STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

VOLUME III – COMBINED DESIGN REPORT
APPENDIX E
INTERCHANGE /INTERSECTION DESIGN STUDIES

FAP ROUTE 318 (IL 29)
SECTION 1, 2, 3, 4, 5, 20, 21, & 6, 8, 9, 10
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES
P–94–009–01 & P–94–019–02

June 2010
Catalog No. 032469-00P

Illinois Department of Transportation
CH2MHILL

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VOLUME III
APPENDIX E1 – INTERCHANGE /INTERSECTION DESIGN STUDIES

INDEX OF SHEETS

SOUTH SECTION – IL 6 TO CHILLICOTHE, IL

1. INTERCHANGE DESIGN STUDY – IL 29 /CEDAR HILLS DRIVE INTERCHANGE (13 SHEETS)
2. INTERCHANGE DESIGN STUDY – IL 29 /ROME WEST ROAD INTERCHANGE (15 SHEETS)
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June 2010
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERCHANGE DESIGN STUDY
IL 29 /CEDAR HILLS DRIVE INTERCHANGE

PREPARED BY : CH2MHILL

FEBRUARY 2008

Illinois Department of Transportation
CH2MHILL

June 2010
Catalog No. 032469-00P

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SHEET NUMBER

		B	A	C	D
RAMP TYPE		NB OFF	SB ON	NB ON	SB OFF
DISTANCE TO ADJACENT RAMPS (FT.)		3200	2020	3200	2020
TERRAIN/GRADE		LEVEL	LEVEL	LEVEL	LEVEL
FREEWAY VOLUME	A.M.	720	280	245	465
	P.M.	735	345	395	475
RAMP VOLUME	A.M.	475	265	115	185
	P.M.	340	610	230	130
TRUCK TYPES		TYP	TYP	TYP	TYP
% OF TRUCKS ON FREEWAY		20	20	20	20
PEAK-HOUR FACTOR		0.90	0.90	0.90	0.90
% OF TRUCKS ON RAMP		20	20	20	20
NUMBER OF LANES ON FREEWAY		2	2	2	2
DESIGN SPEED		70	70	70	70
CHECK POINT VOLUME (FREEWAY + RAMP)	A.M.	880	666	440	568
	P.M.	898	1168	764	581
DENSITY/SPEED* (PC/MI/LN)/(MPH) (FREEWAY)	A.M.	9.1/62.0	5.8/62.9	4.1/62.9	6.4/55.6
	P.M.	9.3/62.4	9.5/62.8	6.6/62.9	6.5/55.8
LEVEL OF SERVICE (RAMP)	A.M.	A	A	A	A
	P.M.	A	A	A	A

* NOTE:
THE PREDICTION OF DENSITY AND THE MODEL TO DETERMINE THIS VARIABLE ARE DISCUSSED IN THE HCM. DENSITY IS MEASURED IN PASSENGER CARS PER MILE PER LANE (PC/MI/LN). THE AVERAGE TRAVEL SPEED MAY BE PREDICTED WITHIN THE RAMP INFLUENCE AREA, BUT SHOULD NOT BE USED AS A PRIMARY MEASURE OF LEVEL OF SERVICE.

PR RAMP A Curve # 1
PI STA. 7+08.60
Δ = 20°44'54" Left
T = 106.55'
L = 210.76'
R = 582.00'
E = 9.67'
e = 8.0%
TR RUN = 41'
SE RUN = 220'
PC STA 6+02.05
PCC STA 8+12.81
ATTAIN SE STA 4+14
TO STA 6+75

PR RAMP A Curve # 2
PI STA. 9+48.12
Δ = 44°20'50" Left
T = 135.31'
L = 256.97'
R = 332.00'
E = 26.51'
e = 8.0%
TR RUN = 0'
SE RUN = 206'
PCC STA 8+12.81
PT STA 10+69.78
ATTAIN SE: SEE CURVE A-1
REMOVE SE STA 9+94
TO STA 12+00

PR IL 29 Curve # 3
PI STA. 2767+07.20
Δ = 13°33'30.59" Right
T = 374.55'
L = 745.60'
R = 3150.76'
E = 22.18'
e = 5.2%
TR RUN = 42'
S.E. RUN = 234'
PC STA 2763+32.65
PT STA 2770+78.25
ATTAIN S.E. STA 2761+35
TO STA 2764+11
REMOVE S.E. STA 2770+00
TO STA 2772+76

PR IL 29 Curve # 4
PI STA. 2806+81.86
Δ = 63°30'14.82" Right
T = 1918.49'
L = 3435.90'
R = 3100.00'
E = 545.63'
e = 5.2%
TR RUN = 42'
S.E. RUN = 234'
PC STA 2787+63.37
PT STA 2821+99.27
ATTAIN S.E. STA 2785+65
TO STA 2788+41
REMOVE S.E. STA 2821+21
TO STA 2823+97

PR RAMP A Curve # 3
PI STA. 17+32.02
Δ = 51°31'57.49" Right
T = 369.26'
L = 688.05'
R = 765.00'
E = 84.46'
e = 8.0%
TR RUN = 0'
SE RUN = 256'
PC STA 13+62.76
PT STA 20+50.81
ATTAIN SE STA 12+00
TO STA 14+56
REMOVE SE THROUGH
STD ENTR TERMINAL

NOTE: FOR DESIGN OF WEST END OF CEDAR HILLS DR, SEE SHEET 2 OF 13.

PR CEDAR HILLS DR Curve # 3
PI STA. 42+49.17
Δ = 3°21'43.76" Right
T = 292.81'
L = 585.46'
R = 9977.00'
E = 4.30'
SE = NC
PC STA 39+56.36
PT STA 45+41.81

PR RAMP D Curve # 5
PI STA. 17+87.41
Δ = 20°44'54" Right
T = 91.53'
L = 181.06'
R = 500.00'
E = 8.31'
e = 8.0%
TR RUN = 0'
SE RUN = 0'-220'
PCC STA 16+95.88
PT STA 18+76.94
ATTAIN SE: SEE CURVE D-2
REMOVE SE STA 18+04
TO STA 20+24 (0%)

PR RAMP D Curve # 4
PI STA. 15+75.84
Δ = 111°13'10" Right
T = 365.25'
L = 485.29
R = 250.00'
E = 192.61'
e = 8.0%
PCC STA 12+10.59
PCC STA 16+95.88
ATTAIN SE: SEE CURVE D-2

PR RAMP D Curve # 3
PI STA. 11+01.53
Δ = 33°26'33" Right
T = 115.66'
L = 224.72'
R = 385.00'
E = 17.00'
e = 8.0%
PCC STA 9+85.87
PCC STA 12+10.59
ATTAIN SE: SEE CURVE D-2

ELEMENTS CONTROLLING DESIGN

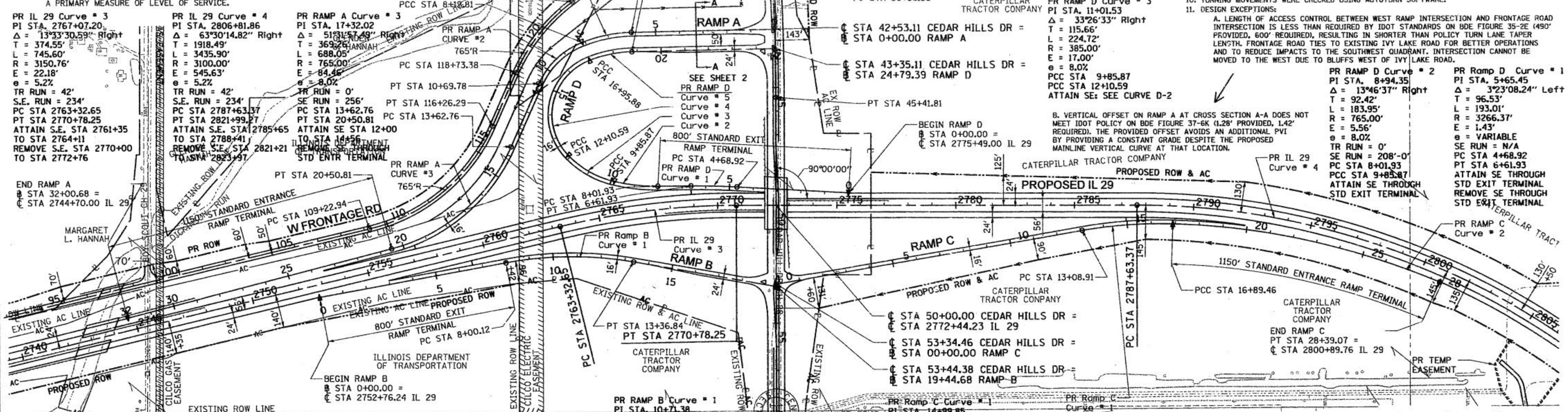
1. DESIGN DESIGNATION FAP ROUTE 318 (IL 29) FREEWAY 14,200 (2032) 70 MPH
   CH 28 (CEDAR HILLS DR) MINOR ARTERIAL 9500 (2032) 55 MPH
2. IL 29 IS THE PREFERENCE ROUTE
3. ANTICIPATED YEAR OF CONSTRUCTION 2012
4. TRAFFIC CONTROL TO BE STOP CONTROL FOR EXIT RAMP TRAFFIC IN CONSTRUCTION YEAR. TRAFFIC SIGNALS REQUIRED IN DESIGN YEAR. (WARRANT 1 IS MET)
5. DESIGN SPEEDS: IL 29 - 70 MPH
   CEDAR HILLS DR - 55 MPH
   RAMP A - 40 MPH (CURVE 1), 30 MPH (CURVE 2), 50 MPH (CURVE 3)
   RAMP B - 50 MPH, RAMP C - 50 MPH, RAMP D - 30 MPH
   WEST FRONTAGE ROAD / IVY LAKE ROAD - 50 MPH
6. IL 29 HAS FULL ACCESS CONTROL
7. IL 29 IS A CLASS II TRUCK ROUTE
8. DESIGN VEHICLE: WB-65

GENERAL NOTES

1. PROFILES ARE PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. TYPE M-4.24 CURB AND GUTTER TO BE USED ON CORNER ISLANDS
3. TYPE M-4.06 CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND
4. ALL DIMENSIONS ARE SHOWN E-E OF CURB EXCEPT WHERE NOTED OTHERWISE
5. IL 29 IS A RURAL FOUR-LANE FREEWAY
6. ALL ENTRANCES AS SHOWN ARE IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS"
7. RAMP EXIT AND ENTRANCE TERMINALS COMPLY WITH IDOT BDE MANUAL DESIGN CRITERIA AND STANDARDS, EXCEPT AS INDICATED IN THE EXCEPTIONS TO POLICY.
8. INTERSECTION SIGHT DISTANCE FOR RAMP INTERSECTIONS COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE BDE MANUAL.
9. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS.
10. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE.
11. DESIGN EXCEPTIONS:
    A. LENGTH OF ACCESS CONTROL BETWEEN WEST RAMP INTERSECTION AND FRONTAGE ROAD INTERSECTION IS LESS THAN REQUIRED BY IDOT STANDARDS ON BDE FIGURE 35-2E (490' PROVIDED, 600' REQUIRED), RESULTING IN SHORTER THAN POLICY TURN LANE TAPER LENGTH. FRONTAGE ROAD TIES TO EXISTING IVY LAKE ROAD FOR BETTER OPERATIONS AND TO REDUCE IMPACTS TO THE SOUTHWEST QUADRANT. INTERSECTION CANNOT BE MOVED TO THE WEST DUE TO BLUFFS WEST OF IVY LAKE ROAD.
    B. VERTICAL OFFSET ON RAMP A AT CROSS SECTION A-A DOES NOT MEET IDOT POLICY ON BDE FIGURE 37-6K (1.28' PROVIDED, 1.42' REQUIRED). THE PROVIDED OFFSET AVOIDS AN ADDITIONAL PVI BY PROVIDING A CONSTANT GRADE DESPITE THE PROPOSED MAINLINE VERTICAL CURVE AT THAT LOCATION.

PR RAMP D Curve # 2
PI STA. 8+94.35
Δ = 13°46'37" Right
T = 92.42'
L = 183.95'
R = 765.00'
E = 5.56'
e = 8.0%
TR RUN = 0'
SE RUN = 208'-0'
PC STA 8+01.93
PCC STA 9+85.87
ATTAIN SE THROUGH
STD EXIT TERMINAL

PR Ramp D Curve # 1
PI STA. 5+65.45
Δ = 3°23'08.24" Left
T = 96.53'
L = 193.01'
R = 3266.37'
E = 1.43'
e = VARIABLE
SE RUN = N/A
PC STA 4+68.92
PT STA 6+61.93
ATTAIN SE THROUGH
STD EXIT TERMINAL
REMOVE SE THROUGH
STD EXIT TERMINAL



TRAFFIC DATA

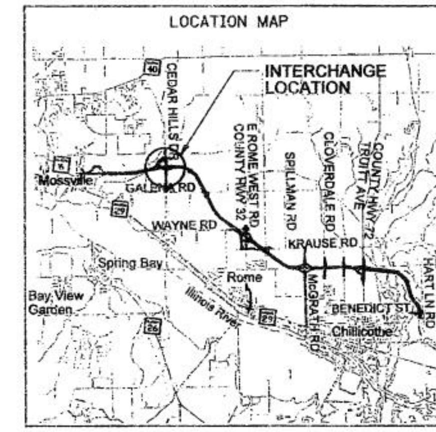
MOVEMENT	YEAR 2001 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR 2012 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB			20		114	57		140	70
AD			20		27	41		45	60
AC			20		135	187		280	345
BA			20		35	114		60	165
BC			20		62	222		180	520
BD			20		56	219		80	385
CD			20		40	67		110	155
CA			20		149	209		245	395
CB			20		167	93		365	185
DC			20		80	65		85	90
DB			20		135	53		340	140
DA			20		30	45		55	65
TOTAL A					490	653		465	475
TOTAL B					569	758		320	1070
TOTAL C					633	843		720	735
TOTAL D					368	490		480	295

PR RAMP B Curve # 1
PI STA. 10+71.38
Δ = 20°30'04.01" Right
T = 271.26'
L = 536.72'
R = 1500.00'
E = 24.33'
e = 6.2%
TR RUN = 0'
SE RUN = 198'
PC STA 8+00.12
PT STA 13+36.84
ATTAIN SE THROUGH
STD EXIT TERMINAL
REMOVE SE STA 12+71
TO STA 14+69 (0%)

PR Ramp C Curve # 1
PI STA. 14+99.85
Δ = 11°41'28" Right
T = 190.94'
L = 380.55'
R = 1865.00'
E = 9.75'
e = 5.4%
TR RUN = 0'
S.E. RUN = 174'
PC STA 13+08.91
PCC STA 16+89.46
ATTAIN SE STA 11+93 (0%)
TO STA 13+67
ATTAIN 5.2% SE THROUGH
STD ENTR TERMINAL

PR Ramp C Curve # 2
PI STA. 22+71.23
Δ = 21°41'18" Right
T = 581.77'
L = 1149.61'
R = 3037.00'
E = 55.22'
e = 5.2%
PCC STA 16+89.46
PT STA 28+39.07
ATTAIN SE: SEE CURVE C-1

LOCATION MAP



INTERCHANGE DESIGN STUDY

FAP ROUTE 318 WITH (IL 29)
CH ROUTE 28 (CEDAR HILLS DR)

SEC. NO. ______ PROJ. NO. HPO-0133 (012)
SCALE 1"=200' COUNTY PEORIA
SJN : P-94-009-01 REV. NO. ___

DESIGNED BY J. MOLLER CH2MHILL DATE 2/08
SATISFACTORY [signature] DISTRICT GEOMETRICS ENGINEER 3-24-08 DATE
SATISFACTORY [signature] DISTRICT PROGRAM DEVELOPMENT ENGINEER 3-24-08 DATE
SATISFACTORY [signature] DISTRICT OPERATIONS ENGINEER 3/25/08 DATE
APPROVED [signature] DISTRICT ENGINEER 3/25/08 DATE

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SHEET NUMBER

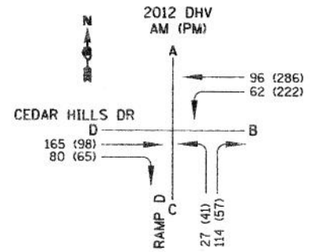
CAPACITY DESIGN STUDY: WEST RAMP INTERSECTION - CONSTRUCTION YEAR (STOP CONTROL)

N/A PHASE
N/A SEC. CYCLE
SIGNAL TYPE 2-WAY STOP

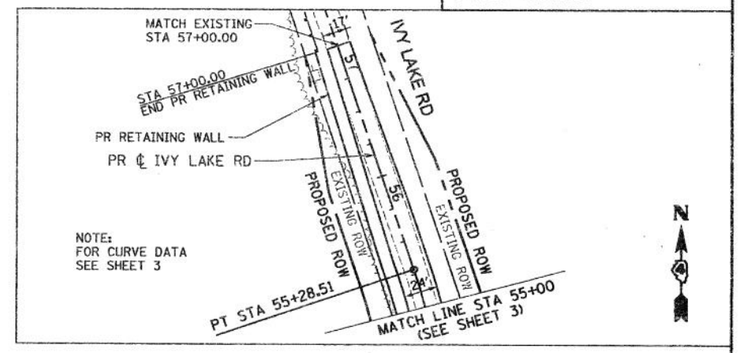
AREA OTHER
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS 2000, 4.1d

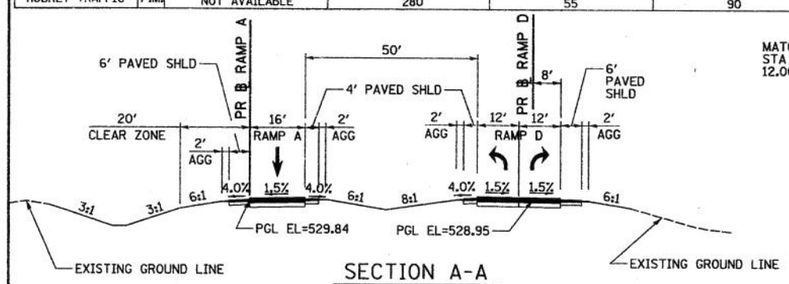
PEAK HOUR FACTOR 0.90
A.M. -- SEC. P.M. -- SEC.
INTERSECTION LEVEL OF SERVICE A.M. - P.M. -

APPROACH		SOUTHBOUND (A)	WESTBOUND (B)		NORTHBOUND (C)		EASTBOUND (D)	
BUS STOP CONDITION			N/A	N/A	N/A	N/A	N/A	
PARKING MANEUVER/HR.			N/A	N/A	N/A	N/A	N/A	
PEDESTRIANS			N/A	N/A	N/A	N/A	N/A	
ARRIVAL TYPE			N/A	N/A	N/A	N/A	N/A	
LANE UTILIZATION FACTOR			N/A	N/A	N/A	N/A	N/A	
BASE SATURATION FLOW			-	1700	-	-	1700	
D - DISTANCE			375'	-	325'	325'	-	
LANE GROUP			L	T	L	R	TR	
LANE WIDTHS			12'	2@12'	12'	12'	2@12'	
GREEN TIME (SECONDS)	A.M.		N/A	N/A	N/A	N/A	N/A	
	P.M.		N/A	N/A	N/A	N/A	N/A	
G/C RATIO	A.M.		N/A	N/A	N/A	N/A	N/A	
	P.M.		N/A	N/A	N/A	N/A	N/A	
LANE GROUP DELAY (SECONDS)	A.M.		8.3	-	11.8	10.1	-	
	P.M.		8.5	-	18.9	9.3	-	
V/C RATIO	A.M.		0.06	-	0.05	0.15	-	
	P.M.		0.19	-	0.15	0.07	-	
LEVEL OF SERVICE	A.M.		A	-	B	B	-	
	P.M.		A	-	C	A	-	
2012 30TH MAX. HOUR TRAFFIC	A.M.		62	96	27	114	245	
	P.M.		222	286	41	57	163	
2012 8TH MAX. HOURLY TRAFFIC	A.M.	NOT AVAILABLE	90		80		135	
	P.M.	NOT AVAILABLE	280		55		90	

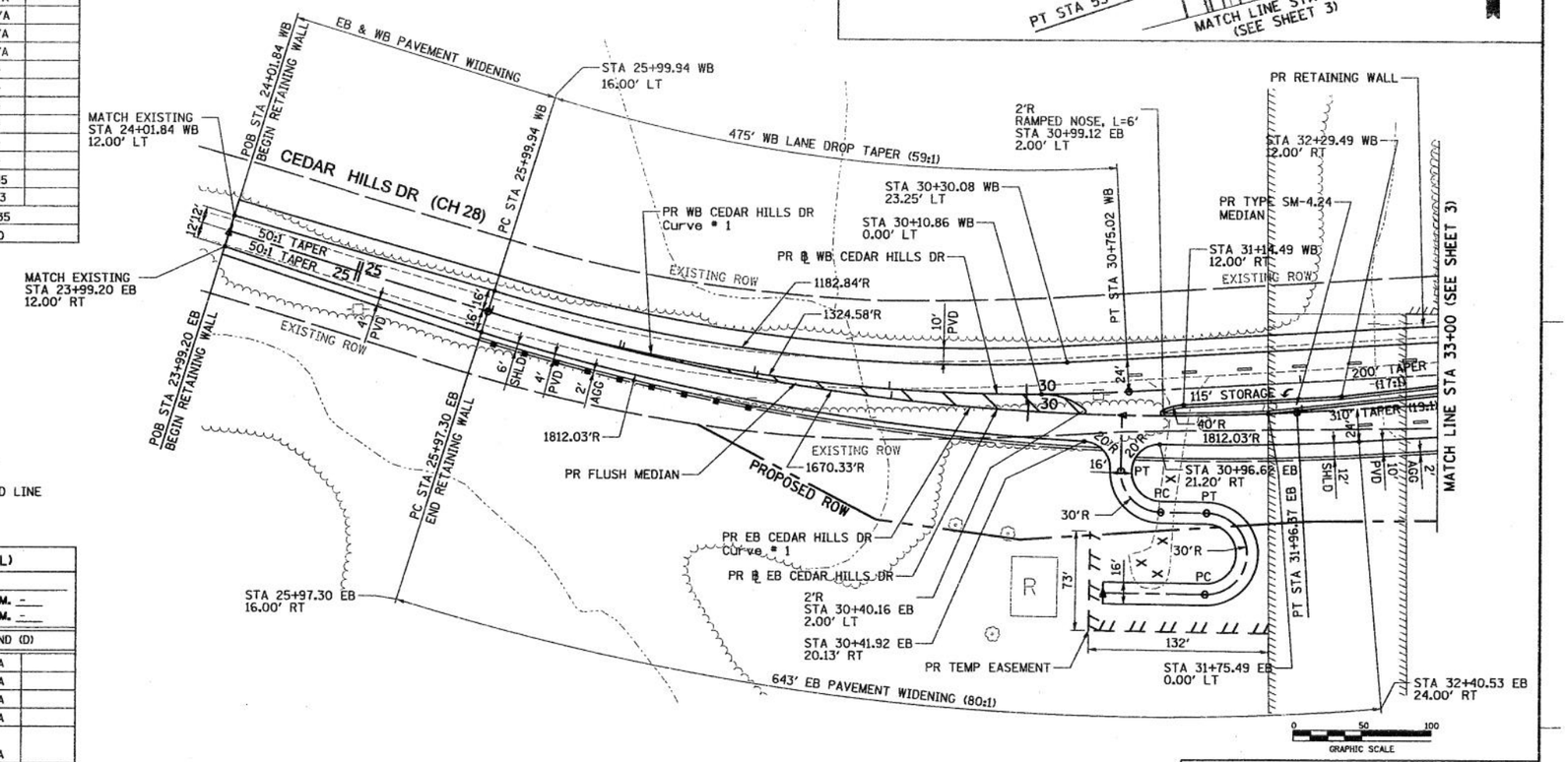


PR WB CEDAR HILLS DR Curve # 1
PI STA. 28+40.06
Δ = 20°32'59.39" Left
T = 240.12'
L = 475.08'
R = 1324.58'
E = 21.59'
e = 5.8%
TR RUN = 0%
SE RUN = 130'-146'
PC STA 25+99.94
PT STA 30+75.02
ATTAIN SE STA 25+13
TO STA 26+43
REMOVE SE STA 30+26
TO STA 31+72





SECTION A-A
RAMPS A & D (RAMP D STA 21+50)



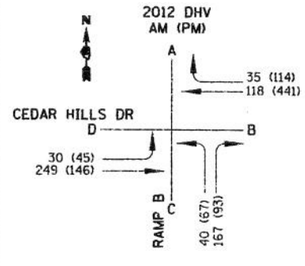
CAPACITY DESIGN STUDY: EAST RAMP INTERSECTION - CONSTRUCTION YEAR (STOP CONTROL)

N/A PHASE
N/A SEC. CYCLE
SIGNAL TYPE 2-WAY STOP

AREA OTHER
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS 2000, 4.1d

PEAK HOUR FACTOR 0.90
A.M. -- SEC. P.M. -- SEC.
INTERSECTION LEVEL OF SERVICE A.M. - P.M. -

APPROACH		SOUTHBOUND (A)	WESTBOUND (B)		NORTHBOUND (C)		EASTBOUND (D)	
BUS STOP CONDITION			N/A	N/A	N/A	N/A	N/A	
PARKING MANEUVER/HR.			N/A	N/A	N/A	N/A	N/A	
PEDESTRIANS			N/A	N/A	N/A	N/A	N/A	
ARRIVAL TYPE			N/A	N/A	N/A	N/A	N/A	
LANE UTILIZATION FACTOR			N/A	N/A	N/A	N/A	N/A	
BASE SATURATION FLOW			1700	-	-	-	1700	
D - DISTANCE			-	270'	265'	240'	-	
LANE GROUP			TR	L	R	L	T	
LANE WIDTHS			2@12'	12'	12'	12'	2@12'	
GREEN TIME (SECONDS)	A.M.		N/A	N/A	N/A	N/A	N/A	
	P.M.		N/A	N/A	N/A	N/A	N/A	
G/C RATIO	A.M.		N/A	N/A	N/A	N/A	N/A	
	P.M.		N/A	N/A	N/A	N/A	N/A	
LANE GROUP DELAY (SECONDS)	A.M.		-	12.2	10.6	7.8	-	
	P.M.		-	13.4	9.5	9.0	-	
V/C RATIO	A.M.		-	0.08	0.22	0.02	-	
	P.M.		-	0.15	0.11	0.05	-	
LEVEL OF SERVICE	A.M.		-	B	B	A	-	
	P.M.		-	B	A	A	-	
2012 30TH MAX. HOUR TRAFFIC	A.M.		153	40	167	30	249	
	P.M.		555	67	93	45	146	
2012 8TH MAX. HOURLY TRAFFIC	A.M.		85	115		155		
	P.M.		305	90		105		



PR EB CEDAR HILLS DR Curve # 1
PI STA. 29+00.09
Δ = 20°32'58.30" Left
T = 302.79'
L = 599.07'
R = 1670.33'
E = 27.22'
e = 5.2%
TR RUN = 69'-77'
SE RUN 179'-201'
PC STA 25+97.30
PT STA 31+96.37
ATTAIN SE STA 24+09
TO STA 26+57
REMOVE SE STA 31+29
TO STA 34+07

N

INTERCHANGE DESIGN STUDY

FAP ROUTE 318 (IL 29)
WITH
CH ROUTE 28 (CEDAR HILLS DR)

SEC. NO. ____ PROJ. NO. HPD-0133 (012)
SCALE ____ COUNTY PEORIA
SJN : P-94-009-01 REV. NO. ____

DESIGNED BY J. MOLLER CH2M HILL DATE 2/08
SATISFACTORY ____ DISTRICT GEOMETRICS ENGINEER DATE 3-24-08
SATISFACTORY ____ DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE
SATISFACTORY ____ DISTRICT OPERATIONS ENGINEER DATE
APPROVED ____ DISTRICT ENGINEER DATE

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3/3/2008

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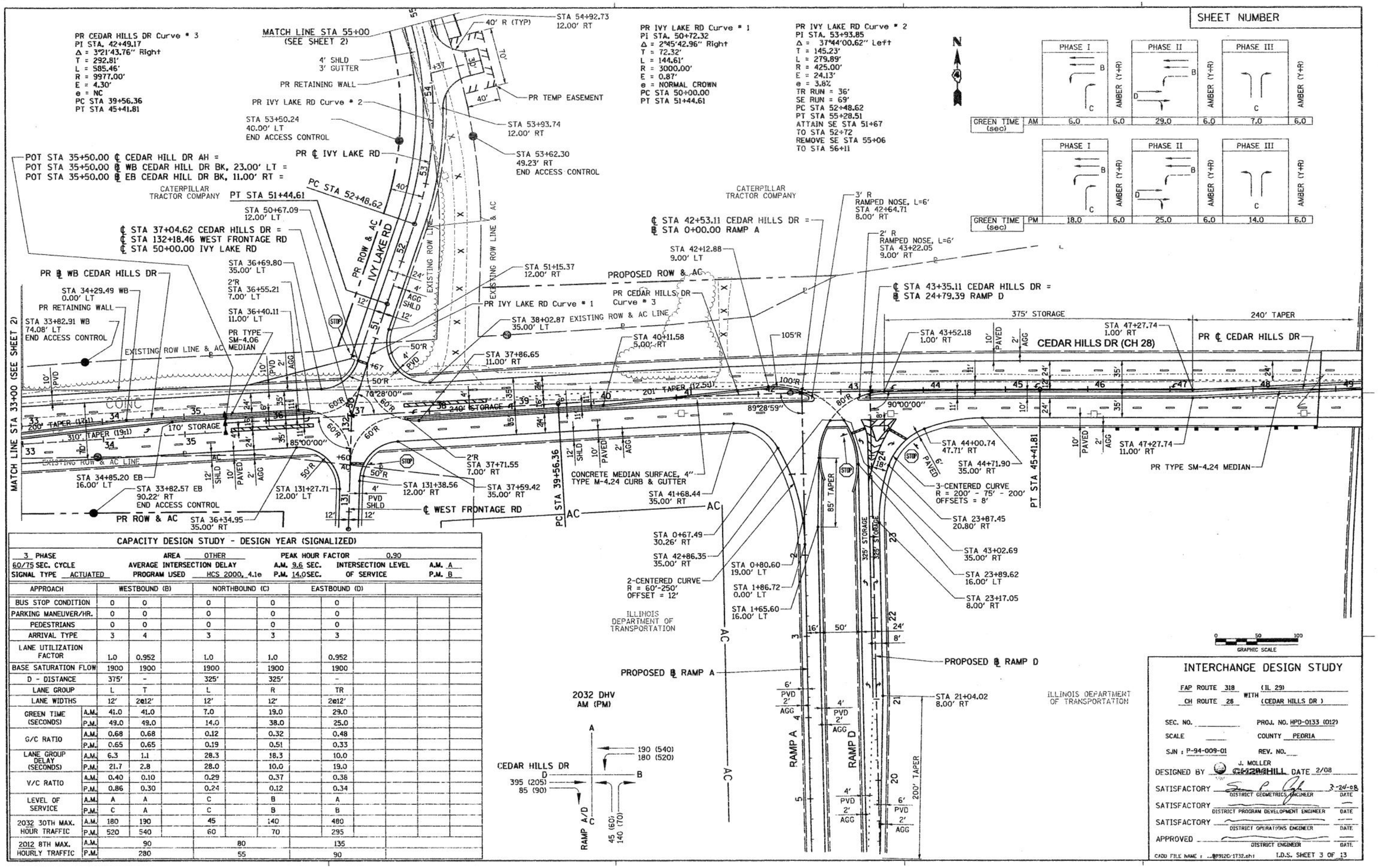

		PHASE I		PHASE II		PHASE III	
GREEN TIME (sec)	AM	6.0	6.0	29.0	6.0	7.0	6.0
			AMBER (Y+R)		AMBER (Y+R)		AMBER (Y+R)

		PHASE I		PHASE II		PHASE III	
GREEN TIME (sec)	PM	18.0	6.0	25.0	6.0	14.0	6.0
			AMBER (Y+R)		AMBER (Y+R)		AMBER (Y+R)

CAPACITY DESIGN STUDY - DESIGN YEAR (SIGNALIZED)

3 PHASE — AREA OTHER — PEAK HOUR FACTOR 0.90
60/75 SEC. CYCLE — AVERAGE INTERSECTION DELAY A.M. 9.6 SEC. — INTERSECTION LEVEL OF SERVICE A.M. A
SIGNAL TYPE ACTUATED — PROGRAM USED HCS 2000, 4.1e — P.M. 14.0 SEC. — P.M. B

APPROACH		WESTBOUND (B)		NORTHBOUND (C)		EASTBOUND (D)	
BUS STOP CONDITION		0	0	0	0	0	
PARKING MANEUVER/HR.		0	0	0	0	0	
PEDESTRIANS		0	0	0	0	0	
ARRIVAL TYPE		3	4	3	3	3	
LANE UTILIZATION FACTOR		1.0	0.952	1.0	1.0	0.952	
BASE SATURATION FLOW		1900	1900	1900	1900	1900	
D - DISTANCE		375'	-	325'	325'	-	
LANE GROUP		L	T	L	R	TR	
LANE WIDTHS		12'	2@12'	12'	12'	2@12'	
GREEN TIME (SECONDS)	A.M.	41.0	41.0	7.0	19.0	29.0	
	P.M.	49.0	49.0	14.0	38.0	25.0	
G/C RATIO	A.M.	0.68	0.68	0.12	0.32	0.48	
	P.M.	0.65	0.65	0.19	0.51	0.33	
LANE GROUP DELAY (SECONDS)	A.M.	6.3	1.1	28.3	18.3	10.0	
	P.M.	21.7	2.8	28.0	10.0	19.0	
V/C RATIO	A.M.	0.40	0.10	0.29	0.37	0.38	
	P.M.	0.86	0.30	0.24	0.12	0.34	
LEVEL OF SERVICE	A.M.	A	A	C	B	A	
	P.M.	C	A	C	B	B	
2032 30TH MAX. HOUR TRAFFIC	A.M.	180	190	45	140	480	
	P.M.	520	540	60	70	295	
2012 8TH MAX. HOURLY TRAFFIC	A.M.	90		80		135	
	P.M.	280		55		90	

INTERCHANGE DESIGN STUDY

FAP ROUTE 318 (IL 29) WITH
CH ROUTE 28 (CEDAR HILLS DR)

SEC. NO. ____ PROJ. NO. HPD-0133 (012)
SCALE ____ COUNTY PEORIA
SJN : P-94-009-01 REV. NO. ____

DESIGNED BY J. MOLLER CH2M HILL DATE 2/08
SATISFACTORY ____ DISTRICT GEOMETRICS ENGINEER DATE 3-24-08
SATISFACTORY ____ DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE
SATISFACTORY ____ DISTRICT OPERATIONS ENGINEER DATE
APPROVED ____ DISTRICT ENGINEER DATE

CADD FILE NAME : ...08912Cr1732.sht I.D.S. SHEET 3 OF 13

•DGN-SPEC•
•DATE-TIME•
•REF-
•REF-
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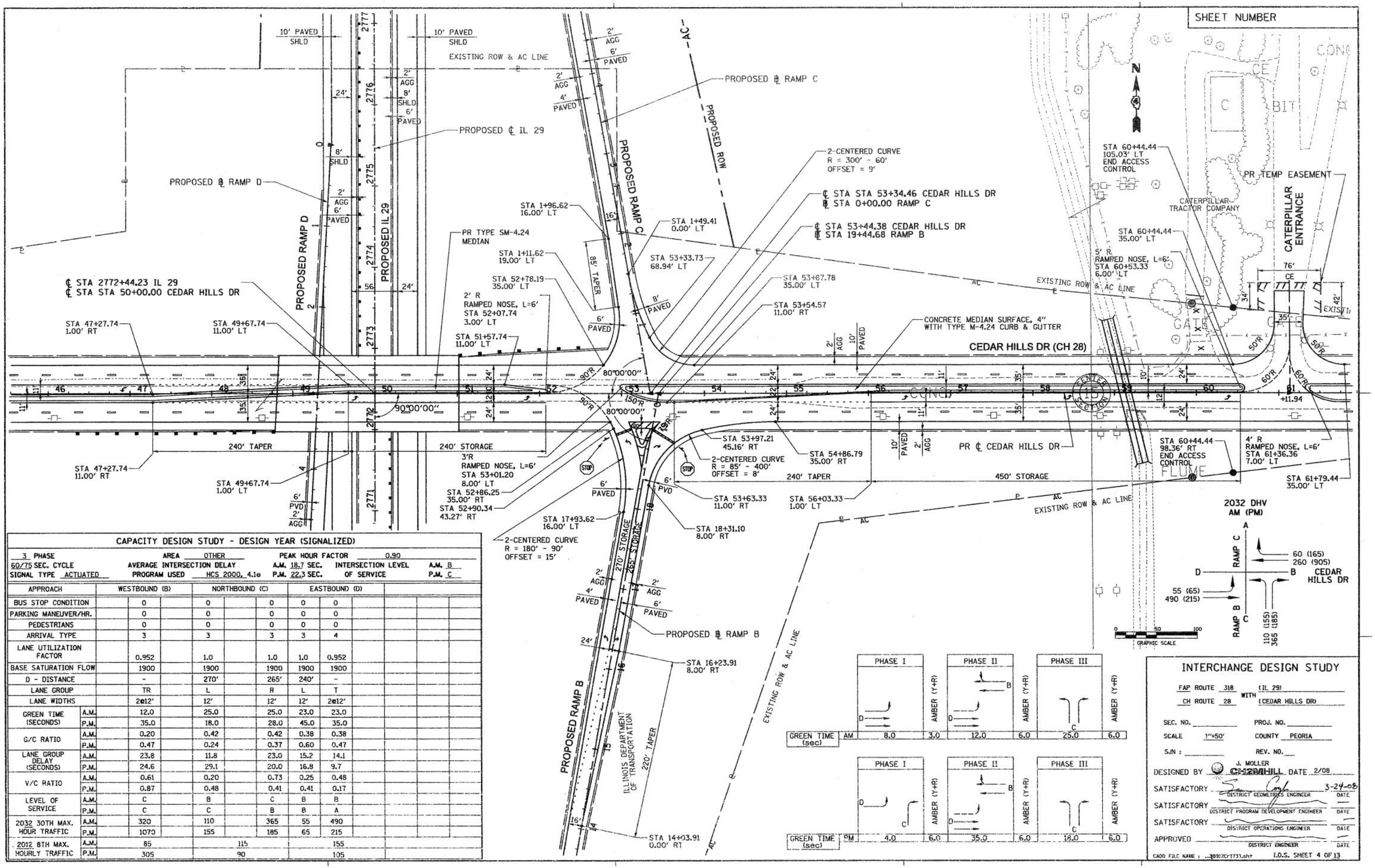
3/3/2008

SHEET NUMBER



CAPACITY DESIGN STUDY - DESIGN YEAR (SIGNALIZED)

3 PHASE — AREA OTHER — PEAK HOUR FACTOR 0.90
60/75 SEC. CYCLE — AVERAGE INTERSECTION DELAY A.M. 18.7 SEC. — INTERSECTION LEVEL OF SERVICE A.M. B
SIGNAL TYPE ACTUATED — PROGRAM USED HCS 2000, 4.1e — P.M. 22.3 SEC. — P.M. C

APPROACH		WESTBOUND (B)		NORTHBOUND (C)			EASTBOUND (D)					
BUS STOP CONDITION		0		0		0	0	0				
PARKING MANEUVER/HR.		0		0		0	0	0				
PEDESTRIANS		0		0		0	0	0				
ARRIVAL TYPE		3		3		3	3	4				
LANE UTILIZATION FACTOR		0.952		1.0		1.0	1.0	0.952				
BASE SATURATION FLOW		1900		1900		1900	1900	1900				
D - DISTANCE		-		270'		265'	240'	-				
LANE GROUP		TR		L		R	L	T				
LANE WIDTHS		2@12'		12'		12'	12'	2@12'				
GREEN TIME (SECONDS)	A.M.	12.0		25.0		25.0	23.0	23.0				
	P.M.	35.0		18.0		28.0	45.0	35.0				
G/C RATIO	A.M.	0.20		0.42		0.42	0.38	0.38				
	P.M.	0.47		0.24		0.37	0.60	0.47				
LANE GROUP DELAY (SECONDS)	A.M.	23.8		11.8		23.0	15.2	14.1				
	P.M.	24.6		29.1		20.0	16.8	9.7				
V/C RATIO	A.M.	0.61		0.20		0.73	0.25	0.48				
	P.M.	0.87		0.48		0.41	0.41	0.17				
LEVEL OF SERVICE	A.M.	C		B		C	B	B				
	P.M.	C		C		B	B	A				
2032 30TH MAX. HOUR TRAFFIC	A.M.	320		110		365	55	490				
	P.M.	1070		155		185	65	215				
2012 8TH MAX. HOURLY TRAFFIC	A.M.	85		115			155					
	P.M.	305		90			105					

INTERCHANGE DESIGN STUDY

FAP ROUTE 318 (IL 29) WITH
CH ROUTE 28 (CEDAR HILLS DR)

SEC. NO. _____ PROJ. NO. _____
SCALE 1"=50' COUNTY PEORIA
SJN : _____ REV. NO. _____

DESIGNED BY J. MOLLER CH2MHILL DATE 2/08
SATISFACTORY _____ DISTRICT GEOMETRICS ENGINEER DATE 3-24-08
SATISFACTORY _____ DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE
SATISFACTORY _____ DISTRICT OPERATIONS ENGINEER DATE
APPROVED _____ DISTRICT ENGINEER DATE

CADD FILE NAME : ...38912Cr1733.sht I.D.S. SHEET 4 OF 13

•DGN-SPEC•
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Plotted by bgarrett
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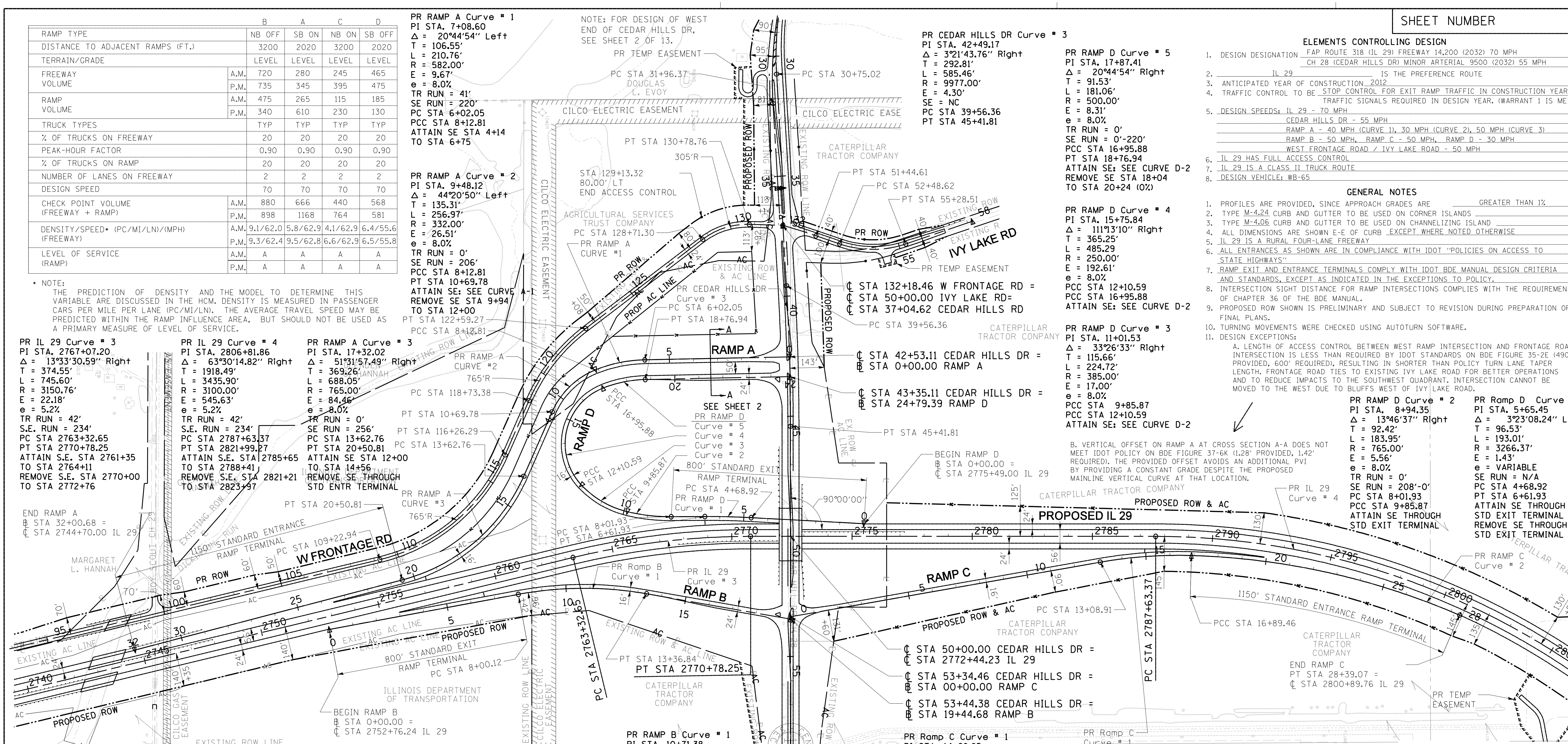
3/5/2008

SHEET NUMBER

		B	A	C	D
RAMP TYPE		NB OFF	SB ON	NB ON	SB OFF
DISTANCE TO ADJACENT RAMPS (FT.)		3200	2020	3200	2020
TERRAIN/GRADE		LEVEL	LEVEL	LEVEL	LEVEL
FREEWAY VOLUME	A.M.	720	280	245	465
	P.M.	735	345	395	475
RAMP VOLUME	A.M.	475	265	115	185
	P.M.	340	610	230	130
TRUCK TYPES		TYP	TYP	TYP	TYP
% OF TRUCKS ON FREEWAY		20	20	20	20
PEAK-HOUR FACTOR		0.90	0.90	0.90	0.90
% OF TRUCKS ON RAMP		20	20	20	20
NUMBER OF LANES ON FREEWAY		2	2	2	2
DESIGN SPEED		70	70	70	70
CHECK POINT VOLUME (FREEWAY + RAMP)	A.M.	880	666	440	568
	P.M.	898	1168	764	581
DENSITY/SPEED* (PC/MI/LN)/(MPH) (FREEWAY)	A.M.	9.1/62.0	5.8/62.9	4.1/62.9	6.4/55.6
	P.M.	9.3/62.4	9.5/62.8	6.6/62.9	6.5/55.8
LEVEL OF SERVICE (RAMP)	A.M.	A	A	A	A
	P.M.	A	A	A	A

* NOTE:
THE PREDICTION OF DENSITY AND THE MODEL TO DETERMINE THIS VARIABLE ARE DISCUSSED IN THE HCM. DENSITY IS MEASURED IN PASSENGER CARS PER MILE PER LANE (PC/MI/LN). THE AVERAGE TRAVEL SPEED MAY BE PREDICTED WITHIN THE RAMP INFLUENCE AREA, BUT SHOULD NOT BE USED AS A PRIMARY MEASURE OF LEVEL OF SERVICE.



PR RAMP A Curve # 1
PI STA. 7+08.60
Δ = 20°44'54" Left
T = 106.55'
L = 210.76'
R = 582.00'
E = 9.67'
e = 8.0%
TR RUN = 41'
SE RUN = 220'
PC STA 6+02.05
PCC STA 8+12.81
ATTAIN SE STA 4+14
TO STA 6+75

PR RAMP A Curve # 2
PI STA. 9+48.12
Δ = 44°20'50" Left
T = 135.31'
L = 256.97'
R = 332.00'
E = 26.51'
e = 8.0%
TR RUN = 0'
SE RUN = 206'
PCC STA 8+12.81
PT STA 10+69.78
ATTAIN SE: SEE CURVE A-1
REMOVE SE STA 9+94
TO STA 12+00

PR IL 29 Curve # 3
PI STA. 2767+07.20
Δ = 13°33'30.59" Right
T = 374.55'
L = 745.60'
R = 3150.76'
E = 22.18'
e = 5.2%
TR RUN = 42'
S.E. RUN = 234'
PC STA 2763+32.65
PT STA 2770+78.25
ATTAIN S.E. STA 2761+35
TO STA 2764+11
REMOVE S.E. STA 2770+00
TO STA 2772+76

PR IL 29 Curve # 4
PI STA. 2806+81.86
Δ = 63°30'14.82" Right
T = 1918.49'
L = 3435.90'
R = 3100.00'
E = 545.63'
e = 5.2%
TR RUN = 42'
S.E. RUN = 234'
PC STA 2787+63.37
PT STA 2821+99.27
ATTAIN S.E. STA 2785+65
TO STA 2788+41
REMOVE S.E. STA 2821+21
TO STA 2823+97

PR RAMP A Curve # 3
PI STA. 17+32.02
Δ = 51°31'57.49" Right
T = 369.26'
L = 688.05'
R = 765.00'
E = 84.46'
e = 8.0%
TR RUN = 0'
SE RUN = 256'
PC STA 13+62.76
PT STA 20+50.81
ATTAIN SE STA 12+00
TO STA 14+56
REMOVE SE THROUGH
STD ENTR TERMINAL

PR CEDAR HILLS DR Curve # 3
PI STA. 42+49.17
Δ = 3°21'43.76" Right
T = 292.81'
L = 585.46'
R = 9977.00'
E = 4.30'
SE = NC
PC STA 39+56.36
PT STA 45+41.81

PR RAMP D Curve # 5
PI STA. 17+87.41
Δ = 20°44'54" Right
T = 91.53'
L = 181.06'
R = 500.00'
E = 8.31'
e = 8.0%
TR RUN = 0'
SE RUN = 0'-220'
PCC STA 16+95.88
PT STA 18+76.94
ATTAIN SE: SEE CURVE D-2
REMOVE SE STA 18+04
TO STA 20+24 (0%)

PR RAMP D Curve # 4
PI STA. 15+75.84
Δ = 111°13'10" Right
T = 365.25'
L = 485.29
R = 250.00'
E = 192.61'
e = 8.0%
PCC STA 12+10.59
PCC STA 16+95.88
ATTAIN SE: SEE CURVE D-2

PR RAMP D Curve # 3
PI STA. 11+01.53
Δ = 33°26'33" Right
T = 115.66'
L = 224.72'
R = 385.00'
E = 17.00'
e = 8.0%
PCC STA 9+85.87
PCC STA 12+10.59
ATTAIN SE: SEE CURVE D-2

ELEMENTS CONTROLLING DESIGN

1. DESIGN DESIGNATION FAP ROUTE 318 (IL 29) FREEWAY 14,200 (2032) 70 MPH
   CH 28 (CEDAR HILLS DR) MINOR ARTERIAL 9500 (2032) 55 MPH
2. IL 29 IS THE PREFERENCE ROUTE
3. ANTICIPATED YEAR OF CONSTRUCTION 2012
4. TRAFFIC CONTROL TO BE STOP CONTROL FOR EXIT RAMP TRAFFIC IN CONSTRUCTION YEAR. TRAFFIC SIGNALS REQUIRED IN DESIGN YEAR. (WARRANT 1 IS MET)
5. DESIGN SPEEDS: IL 29 - 70 MPH
   CEDAR HILLS DR - 55 MPH
   RAMP A - 40 MPH (CURVE 1), 30 MPH (CURVE 2), 50 MPH (CURVE 3)
   RAMP B - 50 MPH, RAMP C - 50 MPH, RAMP D - 30 MPH
   WEST FRONTAGE ROAD / IVY LAKE ROAD - 50 MPH
6. IL 29 HAS FULL ACCESS CONTROL
7. IL 29 IS A CLASS II TRUCK ROUTE
8. DESIGN VEHICLE: WB-65

GENERAL NOTES

1. PROFILES ARE PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. TYPE M-4.24 CURB AND GUTTER TO BE USED ON CORNER ISLANDS
3. TYPE M-4.06 CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND
4. ALL DIMENSIONS ARE SHOWN E-E OF CURB EXCEPT WHERE NOTED OTHERWISE
5. IL 29 IS A RURAL FOUR-LANE FREEWAY
6. ALL ENTRANCES AS SHOWN ARE IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS"
7. RAMP EXIT AND ENTRANCE TERMINALS COMPLY WITH IDOT BDE MANUAL DESIGN CRITERIA AND STANDARDS, EXCEPT AS INDICATED IN THE EXCEPTIONS TO POLICY.
8. INTERSECTION SIGHT DISTANCE FOR RAMP INTERSECTIONS COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE BDE MANUAL.
9. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS.
10. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE.
11. DESIGN EXCEPTIONS:
    A. LENGTH OF ACCESS CONTROL BETWEEN WEST RAMP INTERSECTION AND FRONTAGE ROAD INTERSECTION IS LESS THAN REQUIRED BY IDOT STANDARDS ON BDE FIGURE 35-2E (490' PROVIDED, 600' REQUIRED), RESULTING IN SHORTER THAN POLICY TURN LANE TAPER LENGTH. FRONTAGE ROAD TIES TO EXISTING IVY LAKE ROAD FOR BETTER OPERATIONS AND TO REDUCE IMPACTS TO THE SOUTHWEST QUADRANT. INTERSECTION CANNOT BE MOVED TO THE WEST DUE TO BLUFFS WEST OF IVY LAKE ROAD.
    B. VERTICAL OFFSET ON RAMP A AT CROSS SECTION A-A DOES NOT MEET IDOT POLICY ON BDE FIGURE 37-6K (1.28' PROVIDED, 1.42' REQUIRED). THE PROVIDED OFFSET AVOIDS AN ADDITIONAL PVI BY PROVIDING A CONSTANT GRADE DESPITE THE PROPOSED MAINLINE VERTICAL CURVE AT THAT LOCATION.

PR RAMP D Curve # 2
PI STA. 8+94.35
Δ = 13°46'37" Right
T = 92.42'
L = 183.95'
R = 765.00'
E = 5.56'
e = 8.0%
TR RUN = 0'
SE RUN = 208'-0'
PC STA 8+01.93
PCC STA 9+85.87
ATTAIN SE THROUGH
STD EXIT TERMINAL

PR Ramp D Curve # 1
PI STA. 5+65.45
Δ = 3°23'08.24" Left
T = 96.53'
L = 193.01'
R = 3266.37'
E = 1.43'
e = VARIABLE
SE RUN = N/A
PC STA 4+68.92
PT STA 6+61.93
ATTAIN SE THROUGH
STD EXIT TERMINAL
REMOVE SE THROUGH
STD EXIT TERMINAL

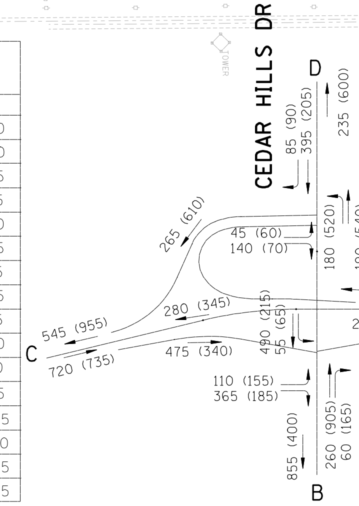
PR RAMP B Curve # 1
PI STA. 10+71.38
Δ = 20°30'04.01" Right
T = 271.26'
L = 536.72'
R = 1500.00'
E = 24.33'
e = 6.2%
TR RUN = 0'
SE RUN = 198'
PC STA 8+00.12
PT STA 13+36.84
ATTAIN SE THROUGH
STD EXIT TERMINAL
REMOVE SE STA 12+71
TO STA 14+69 (0%)

PR Ramp C Curve # 1
PI STA. 14+99.85
Δ = 11°41'28" Right
T = 190.94'
L = 380.55'
R = 1865.00'
E = 9.75'
e = 5.4%
TR RUN = 0'
S.E. RUN = 174'
PC STA 13+08.91
PCC STA 16+89.46
ATTAIN SE STA 11+93 (0%)
TO STA 13+67
ATTAIN 5.2% SE THROUGH
STD ENTR TERMINAL

PR Ramp C Curve # 2
PI STA. 22+71.23
Δ = 21°41'18" Right
T = 581.77'
L = 1149.61'
R = 3037.00'
E = 55.22'
e = 5.2%
PCC STA 16+89.46
PT STA 28+39.07
ATTAIN SE: SEE CURVE C-1

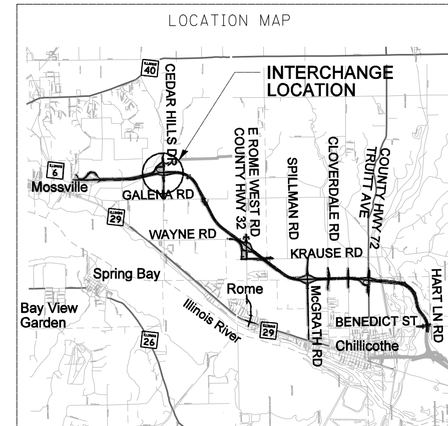
TRAFFIC DATA

MOVE-MENT	YEAR 2001 30TH MAXIMUM HOUR TRAFFIC A.M.	YEAR 2001 P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR 2012 30th MAXIMUM HOUR TRAFFIC A.M.	YEAR 2012 P.M.	ESTIMATED PERCENT INCREASE BY	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	YEAR 2032 P.M.
AB			20		114	57		140	70
AD			20		27	41		45	60
AC			20		135	187		280	345
BA			20		35	114		60	165
BC			20		62	222		180	520
BD			20		56	219		80	385
CD			20		40	67		110	155
CA			20		149	209		245	395
CB			20		167	93		365	185
DC			20		80	65		85	90
DB			20		135	53		340	140
DA			20		30	45		55	65
TOTAL A					490	653		465	475
TOTAL B					569	758		320	1070
TOTAL C					633	843		720	735
TOTAL D					368	490		480	295



2032 DHV
AM (PM)

LOCATION MAP



INTERCHANGE DESIGN STUDY

FAP ROUTE 318 (IL 29)
WITH
CH ROUTE 28 (CEDAR HILLS DR)

SEC. NO. ____ PROJ. NO. HPO-0133 (012)
SCALE 1"=200' COUNTY PEORIA
SJN : P-94-009-01 REV. NO. ___

DESIGNED BY J. MOLLER CH2MHILL DATE 2/08
SATISFACTORY ____ DISTRICT GEOMETRICS ENGINEER DATE
SATISFACTORY ____ DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE
SATISFACTORY ____ DISTRICT OPERATIONS ENGINEER DATE
APPROVED ____ DISTRICT ENGINEER DATE

CADD FILE NAME : $FILEABBREV$ I.D.S. SHEET 1 OF 13

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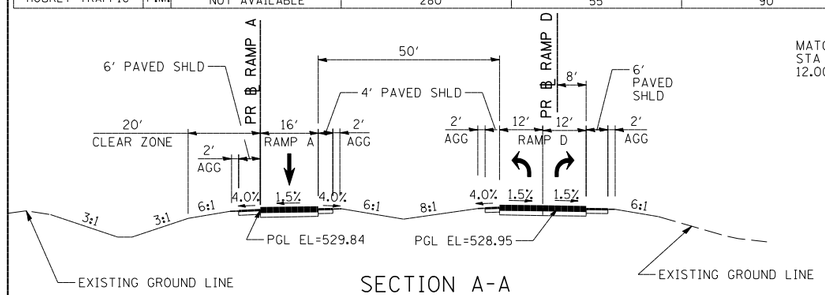
21-APR-2009

SHEET NUMBER

CAPACITY DESIGN STUDY: WEST RAMP INTERSECTION - CONSTRUCTION YEAR (STOP CONTROL)

N/A PHASE — AREA OTHER — PEAK HOUR FACTOR 0.90
N/A SEC. CYCLE — AVERAGE INTERSECTION DELAY — A.M. - SEC. INTERSECTION LEVEL OF SERVICE A.M. -
SIGNAL TYPE 2-WAY STOP — PROGRAM USED HCS 2000, 4.1d — P.M. - SEC. P.M. -

APPROACH		SOUTHBOUND (A)	WESTBOUND (B)		NORTHBOUND (C)		EASTBOUND (D)
BUS STOP CONDITION			N/A	N/A	N/A	N/A	N/A
PARKING MANEUVER/HR.			N/A	N/A	N/A	N/A	N/A
PEDESTRIANS			N/A	N/A	N/A	N/A	N/A
ARRIVAL TYPE			N/A	N/A	N/A	N/A	N/A
LANE UTILIZATION FACTOR			N/A	N/A	N/A	N/A	N/A
BASE SATURATION FLOW			-	1700	-	-	1700
D - DISTANCE			375'	-	325'	325'	-
LANE GROUP			L	T	L	R	TR
LANE WIDTHS			12'	2@12'	12'	12'	2@12'
GREEN TIME (SECONDS)	A.M.		N/A	N/A	N/A	N/A	N/A
	P.M.		N/A	N/A	N/A	N/A	N/A
G/C RATIO	A.M.		N/A	N/A	N/A	N/A	N/A
	P.M.		N/A	N/A	N/A	N/A	N/A
LANE GROUP DELAY (SECONDS)	A.M.		8.3	-	11.8	10.1	-
	P.M.		8.5	-	18.9	9.3	-
V/C RATIO	A.M.		0.06	-	0.05	0.15	-
	P.M.		0.19	-	0.15	0.07	-
LEVEL OF SERVICE	A.M.		A	-	B	B	-
	P.M.		A	-	C	A	-
2012 30TH MAX. HOUR TRAFFIC	A.M.		62	96	27	114	245
	P.M.		222	286	41	57	163
2012 8TH MAX. HOURLY TRAFFIC	A.M.	NOT AVAILABLE	90		80		135
	P.M.	NOT AVAILABLE	280		55		90

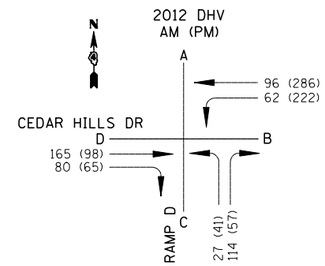


SECTION A-A
RAMPS A & D (RAMP D STA 21+50)

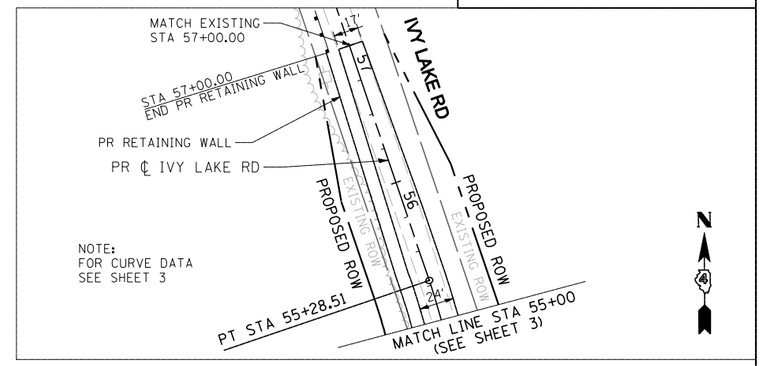
CAPACITY DESIGN STUDY: EAST RAMP INTERSECTION - CONSTRUCTION YEAR (STOP CONTROL)

N/A PHASE — AREA OTHER — PEAK HOUR FACTOR 0.90
N/A SEC. CYCLE — AVERAGE INTERSECTION DELAY — A.M. - SEC. INTERSECTION LEVEL OF SERVICE A.M. -
SIGNAL TYPE 2-WAY STOP — PROGRAM USED HCS 2000, 4.1d — P.M. - SEC. P.M. -

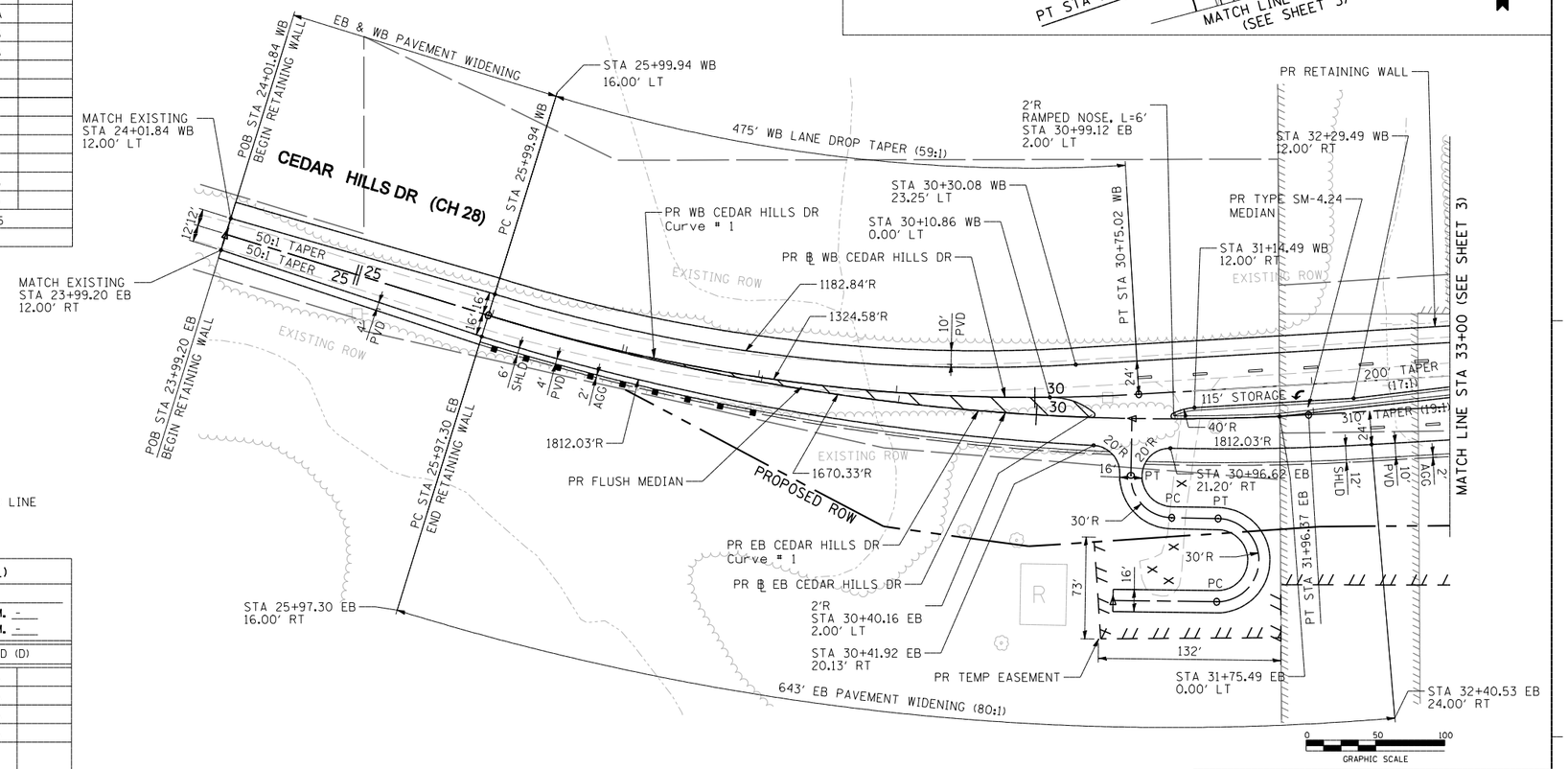
APPROACH		SOUTHBOUND (A)	WESTBOUND (B)		NORTHBOUND (C)		EASTBOUND (D)
BUS STOP CONDITION			N/A	N/A	N/A	N/A	N/A
PARKING MANEUVER/HR.			N/A	N/A	N/A	N/A	N/A
PEDESTRIANS			N/A	N/A	N/A	N/A	N/A
ARRIVAL TYPE			N/A	N/A	N/A	N/A	N/A
LANE UTILIZATION FACTOR			N/A	N/A	N/A	N/A	N/A
BASE SATURATION FLOW			1700	-	-	-	1700
D - DISTANCE			-	270'	265'	240'	-
LANE GROUP			TR	L	R	L	T
LANE WIDTHS			2@12'	12'	12'	12'	2@12'
GREEN TIME (SECONDS)	A.M.		N/A	N/A	N/A	N/A	N/A
	P.M.		N/A	N/A	N/A	N/A	N/A
G/C RATIO	A.M.		N/A	N/A	N/A	N/A	N/A
	P.M.		N/A	N/A	N/A	N/A	N/A
LANE GROUP DELAY (SECONDS)	A.M.		-	12.2	10.6	7.8	-
	P.M.		-	13.4	9.5	9.0	-
V/C RATIO	A.M.		-	0.08	0.22	0.02	-
	P.M.		-	0.15	0.11	0.05	-
LEVEL OF SERVICE	A.M.		-	B	B	A	-
	P.M.		-	B	A	A	-
2012 30TH MAX. HOUR TRAFFIC	A.M.		153	40	167	30	249
	P.M.		555	67	93	45	146
2012 8TH MAX. HOURLY TRAFFIC	A.M.		85	115		155	
	P.M.		305	90		105	

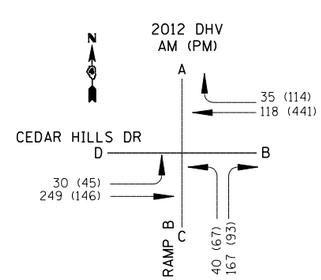


PR WB CEDAR HILLS DR Curve # 1
PI STA. 28+40.06
Δ = 20°32'59.39" Left
T = 240.12'
L = 475.08'
R = 1324.58'
E = 21.59'
e = 5.8%
TR RUN = 0%
SE RUN = 130'-146'
PC STA 25+99.94
PT STA 30+75.02
ATTAIN SE STA 25+13
TO STA 26+43
REMOVE SE STA 30+26
TO STA 31+72



NOTE:
FOR CURVE DATA
SEE SHEET 3





PR EB CEDAR HILLS DR Curve # 1
PI STA. 29+00.09
Δ = 20°32'58.30" Left
T = 302.79'
L = 599.07'
R = 1670.33'
E = 27.22'
e = 5.2%
TR RUN = 69'-77'
SE RUN 179'-201'
PC STA 25+97.30
PT STA 31+96.37
ATTAIN SE STA 24+09
TO STA 26+57
REMOVE SE STA 31+29
TO STA 34+07

INTERCHANGE DESIGN STUDY

FAP ROUTE 318 (IL 29)
WITH
CH ROUTE 28 (CEDAR HILLS DR)

SEC. NO. ____ PROJ. NO. HPD-0133 (012)
SCALE ____ COUNTY PEORIA
SJN : P-94-009-01 REV. NO. ____

DESIGNED BY J. MOLLER CH2MHILL DATE 2/08
SATISFACTORY ____ DISTRICT GEOMETRICS ENGINEER ____ DATE
SATISFACTORY ____ DISTRICT PROGRAM DEVELOPMENT ENGINEER ____ DATE
SATISFACTORY ____ DISTRICT OPERATIONS ENGINEER ____ DATE
APPROVED ____ DISTRICT ENGINEER ____ DATE

CADD FILE NAME : $FILEABBREV$ I.D.S. SHEET 2 OF 13

•DGN-SPEC•
•DATE-TIME•
•REF-
•REF-
•REF-

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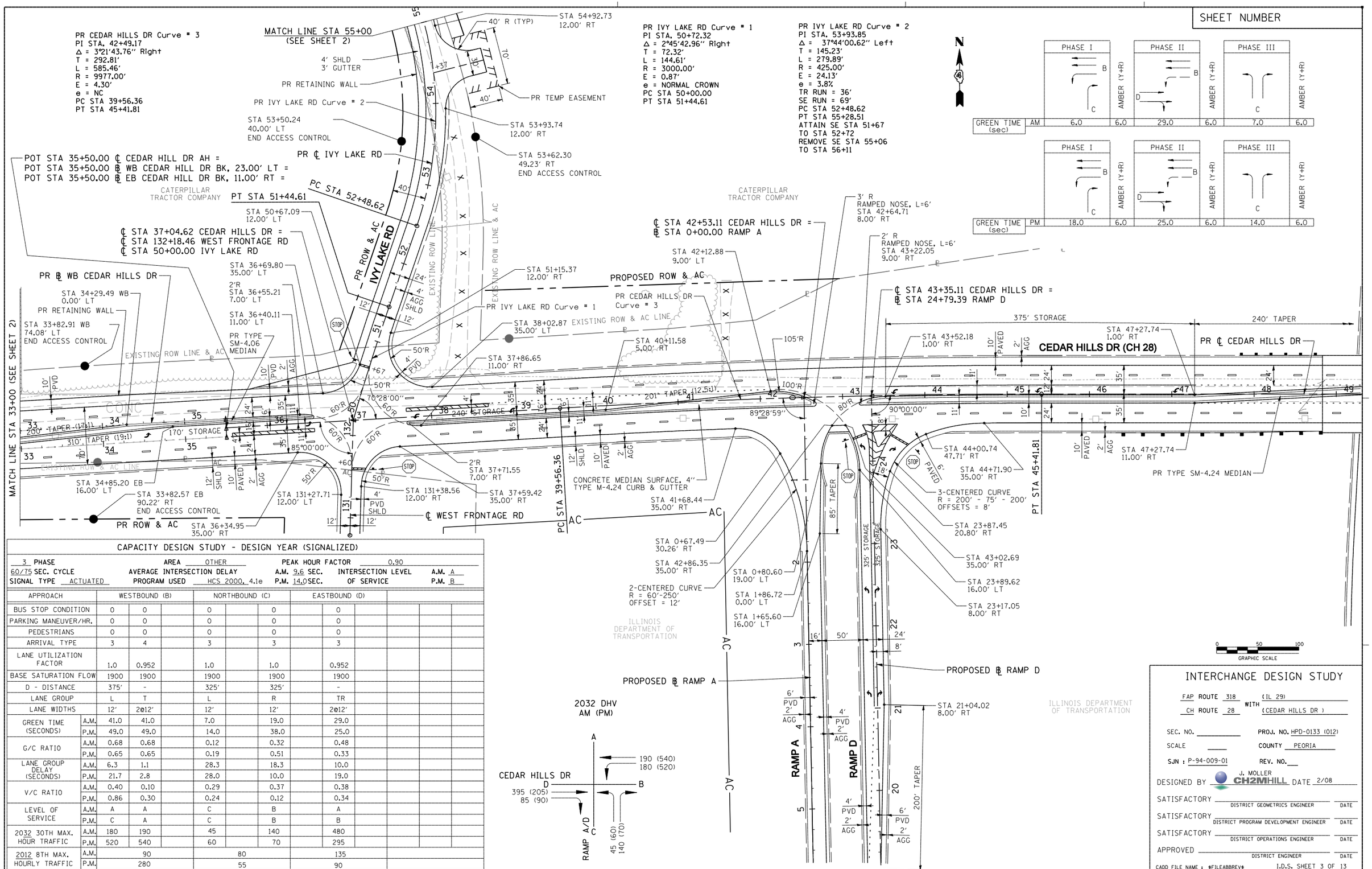
\\pwdevcad\168912_IL29\8912\NCM DRAWINGS\8912CT732a.dgn
a21-APR-2009

SHEET NUMBER

PR CEDAR HILLS DR Curve # 3
PI STA. 42+49.17
Δ = 3°21'43.76" Right
T = 292.81'
L = 585.46'
R = 9977.00'
E = 4.30'
e = NC
PC STA 39+56.36
PT STA 45+41.81

PR IVY LAKE RD Curve # 1
PI STA. 50+72.32
Δ = 2°45'42.96" Right
T = 72.32'
L = 144.61'
R = 3000.00'
E = 0.87'
e = NORMAL CROWN
PC STA 50+00.00
PT STA 51+44.61

PR IVY LAKE RD Curve # 2
PI STA. 53+93.85
Δ = 37°44'00.62" Left
T = 145.23'
L = 279.89'
R = 425.00'
E = 24.13'
e = 3.8%
TR RUN = 36'
SE RUN = 69'
PC STA 52+48.62
PT STA 55+28.51
ATTAIN SE STA 51+67
TO STA 52+72
REMOVE SE STA 55+06
TO STA 56+11



		PHASE I		PHASE II		PHASE III	
GREEN TIME (sec)	AM	6.0	6.0	29.0	6.0	7.0	6.0
			AMBER (Y+R)		AMBER (Y+R)		AMBER (Y+R)

		PHASE I		PHASE II		PHASE III	
GREEN TIME (sec)	PM	18.0	6.0	25.0	6.0	14.0	6.0
			AMBER (Y+R)		AMBER (Y+R)		AMBER (Y+R)

CAPACITY DESIGN STUDY - DESIGN YEAR (SIGNALIZED)

3 PHASE — AREA OTHER — PEAK HOUR FACTOR 0.90
60/75 SEC. CYCLE — AVERAGE INTERSECTION DELAY — A.M. 9.6 SEC. — INTERSECTION LEVEL OF SERVICE — A.M. A
SIGNAL TYPE ACTUATED — PROGRAM USED HCS 2000, 4.1e — P.M. 14.0 SEC. — P.M. B

APPROACH		WESTBOUND (B)			NORTHBOUND (C)			EASTBOUND (D)				
BUS STOP CONDITION		0	0		0		0		0			
PARKING MANEUVER/HR.		0	0		0		0		0			
PEDESTRIANS		0	0		0		0		0			
ARRIVAL TYPE		3	4		3		3		3			
LANE UTILIZATION FACTOR		1.0	0.952		1.0		1.0		0.952			
BASE SATURATION FLOW		1900	1900		1900		1900		1900			
D - DISTANCE		375'	-		325'		325'		-			
LANE GROUP		L	T		L		R		TR			
LANE WIDTHS		12'	2@12'		12'		12'		2@12'			
GREEN TIME (SECONDS)	A.M.	41.0	41.0		7.0		19.0		29.0			
	P.M.	49.0	49.0		14.0		38.0		25.0			
G/C RATIO	A.M.	0.68	0.68		0.12		0.32		0.48			
	P.M.	0.65	0.65		0.19		0.51		0.33			
LANE GROUP DELAY (SECONDS)	A.M.	6.3	1.1		28.3		18.3		10.0			
	P.M.	21.7	2.8		28.0		10.0		19.0			
V/C RATIO	A.M.	0.40	0.10		0.29		0.37		0.38			
	P.M.	0.86	0.30		0.24		0.12		0.34			
LEVEL OF SERVICE	A.M.	A	A		C		B		A			
	P.M.	C	A		C		B		B			
2032 30TH MAX. HOUR TRAFFIC	A.M.	180	190		45		140		480			
	P.M.	520	540		60		70		295			
2012 8TH MAX. HOURLY TRAFFIC	A.M.	90			80				135			
	P.M.	280			55				90			

2032 DHV
AM (PM)

INTERCHANGE DESIGN STUDY

FAP ROUTE 318 (IL 29) WITH
CH ROUTE 28 (CEDAR HILLS DR)

SEC. NO. ____ PROJ. NO. HPD-0133 (012)
SCALE ____ COUNTY PEORIA
SJN : P-94-009-01 REV. NO. ____

DESIGNED BY J. MOLLER CH2MHILL DATE 2/08
SATISFACTORY ____ DISTRICT GEOMETRICS ENGINEER ____ DATE
SATISFACTORY ____ DISTRICT PROGRAM DEVELOPMENT ENGINEER ____ DATE
SATISFACTORY ____ DISTRICT OPERATIONS ENGINEER ____ DATE
APPROVED ____ DISTRICT ENGINEER ____ DATE

CADD FILE NAME : $FILEABBREV$ I.D.S. SHEET 3 OF 13

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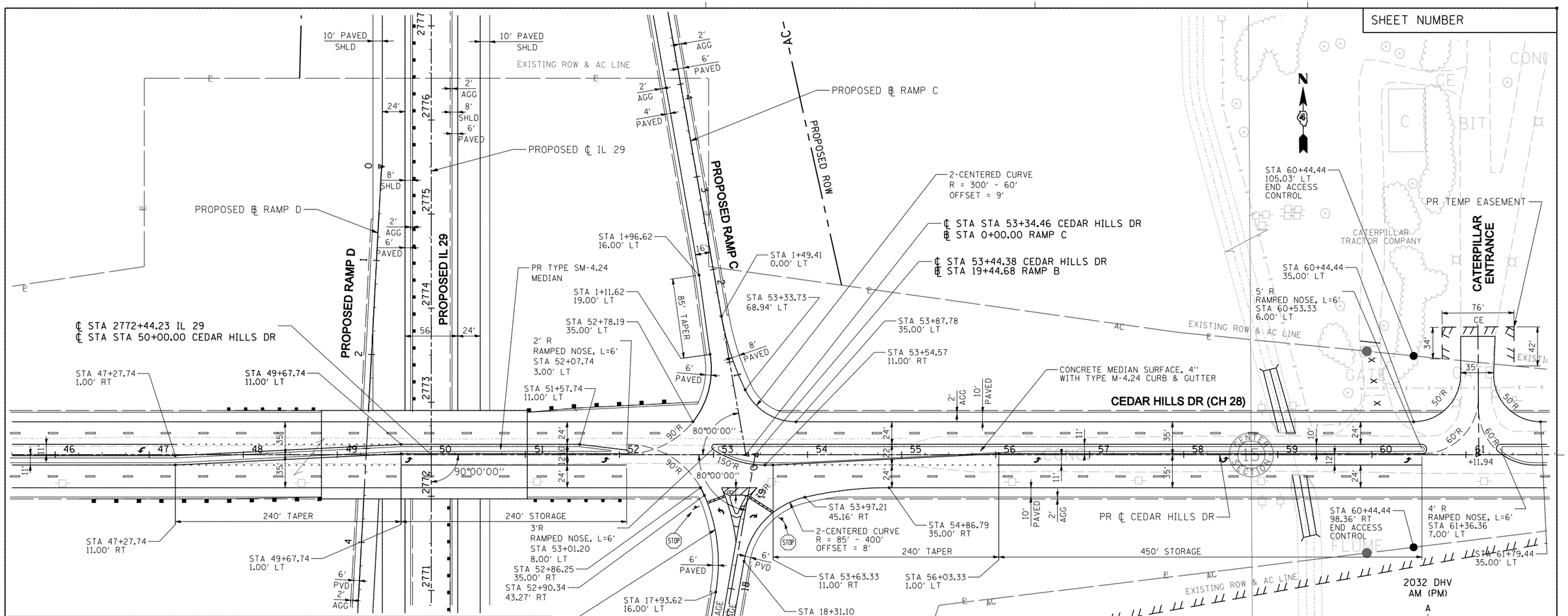
Jul-14-APR-2009

SHEET NUMBER



CAPACITY DESIGN STUDY - DESIGN YEAR (SIGNALIZED)

3 PHASE
60/75 SEC. CYCLE
SIGNAL TYPE ACTUATED

AREA OTHER
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS 2000, 4.1e

PEAK HOUR FACTOR 0.90
A.M. 18.7 SEC. INTERSECTION LEVEL A.M. B
P.M. 22.3 SEC. OF SERVICE P.M. C

APPROACH		WESTBOUND (B)		NORTHBOUND (C)			EASTBOUND (D)					
BUS STOP CONDITION		0		0		0	0	0				
PARKING MANEUVER/HR.		0		0		0	0	0				
PEDESTRIANS		0		0		0	0	0				
ARRIVAL TYPE		3		3		3	3	4				
LANE UTILIZATION FACTOR		0.952		1.0		1.0	1.0	0.952				
BASE SATURATION FLOW		1900		1900		1900	1900	1900				
D - DISTANCE		-		270'		265'	240'	-				
LANE GROUP		TR		L		R	L	T				
LANE WIDTHS		2@12'		12'		12'	12'	2@12'				
GREEN TIME (SECONDS)	A.M.	12.0		25.0		25.0	23.0	23.0				
	P.M.	35.0		18.0		28.0	45.0	35.0				
G/C RATIO	A.M.	0.20		0.42		0.42	0.38	0.38				
	P.M.	0.47		0.24		0.37	0.60	0.47				
LANE GROUP DELAY (SECONDS)	A.M.	23.8		11.8		23.0	15.2	14.1				
	P.M.	24.6		29.1		20.0	16.8	9.7				
V/C RATIO	A.M.	0.61		0.20		0.73	0.25	0.48				
	P.M.	0.87		0.48		0.41	0.41	0.17				
LEVEL OF SERVICE	A.M.	C		B		C	B	B				
	P.M.	C		C		B	B	A				
2032 30TH MAX. HOUR TRAFFIC	A.M.	320		110		365	55	490				
	P.M.	1070		155		185	65	215				
2012 8TH MAX. HOURLY TRAFFIC	A.M.	85		115			155					
	P.M.	305		90			105					

		PHASE I	AMBER (Y+R)	PHASE II	AMBER (Y+R)	PHASE III	AMBER (Y+R)
GREEN TIME (sec)	AM	8.0	3.0	12.0	6.0	25.0	6.0
	PM	4.0	6.0	35.0	6.0	18.0	6.0

INTERCHANGE DESIGN STUDY

FAP ROUTE 318 (IL 29)
WITH
CH ROUTE 28 (CEDAR HILLS DR)

SEC. NO. _____ PROJ. NO. _____
SCALE 1"=50' COUNTY PEORIA
SJN : _____ REV. NO. __

DESIGNED BY J. MOLLER CH2MHILL DATE 2/08
SATISFACTORY _____ DISTRICT GEOMETRICS ENGINEER DATE
SATISFACTORY _____ DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE
SATISFACTORY _____ DISTRICT OPERATIONS ENGINEER DATE
APPROVED _____ DISTRICT ENGINEER DATE

CADD FILE NAME : $FILEABBREV$ I.D.S. SHEET 4 OF 13

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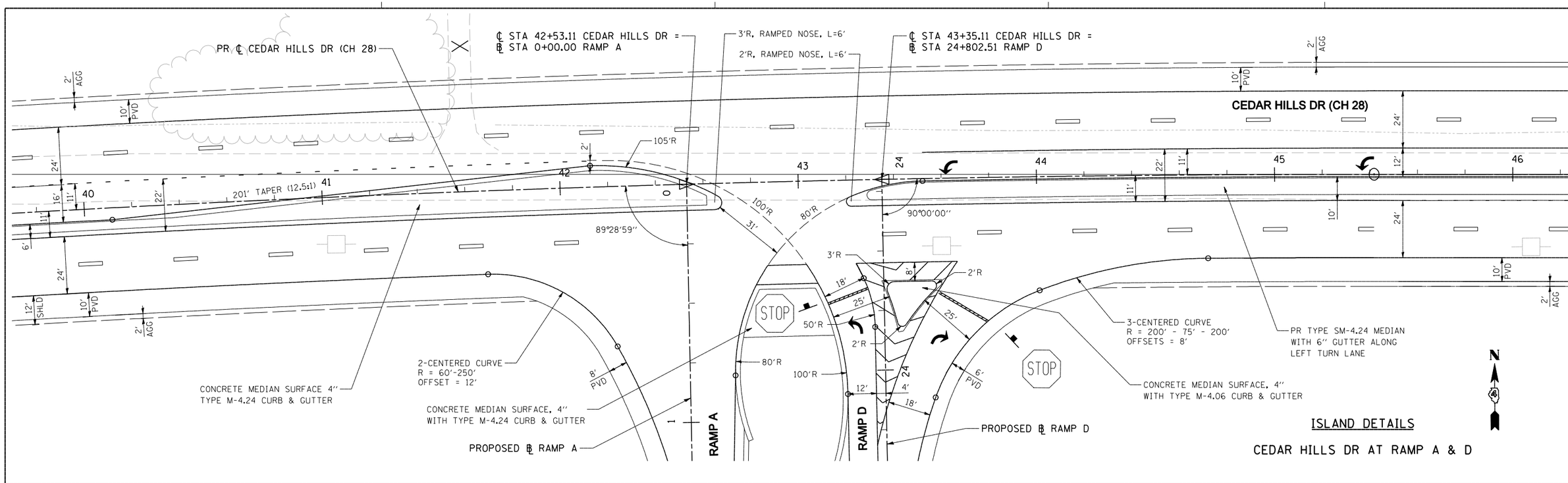
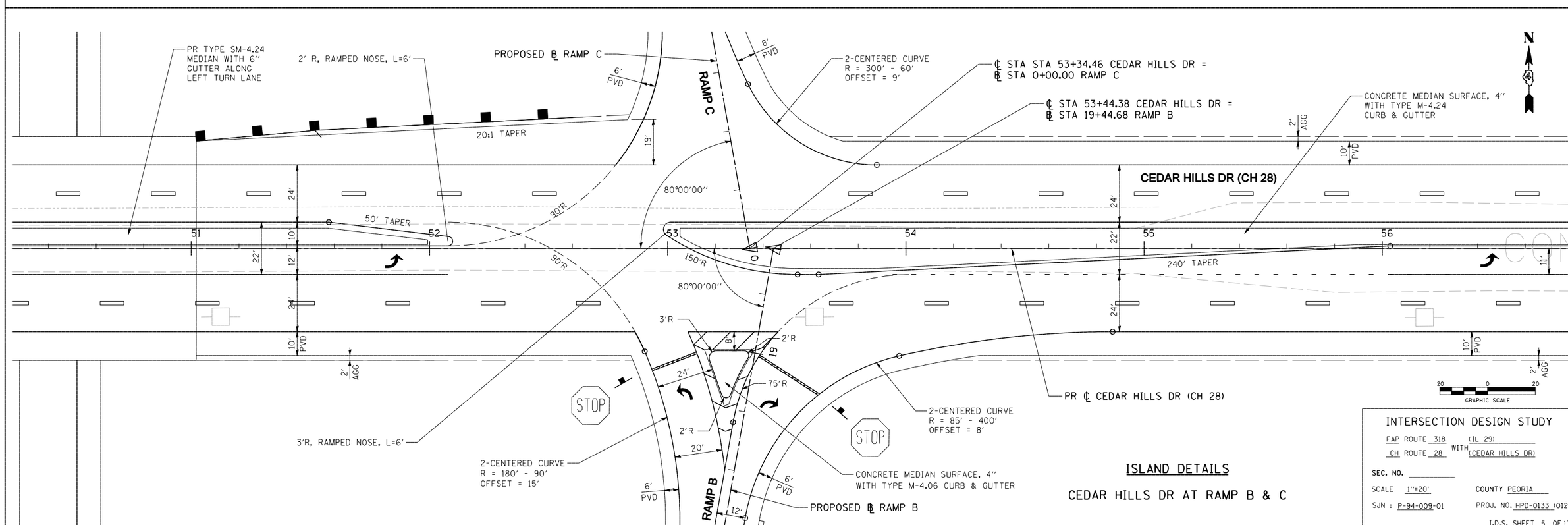
21-APR-2009



ISLAND DETAILS

CEDAR HILLS DR AT RAMP A & D



ISLAND DETAILS

CEDAR HILLS DR AT RAMP B & C

INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29)
CH ROUTE 28 WITH (CEDAR HILLS DR)

SEC. NO. _____

SCALE 1"=20' COUNTY PEORIA

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 5 OF 13

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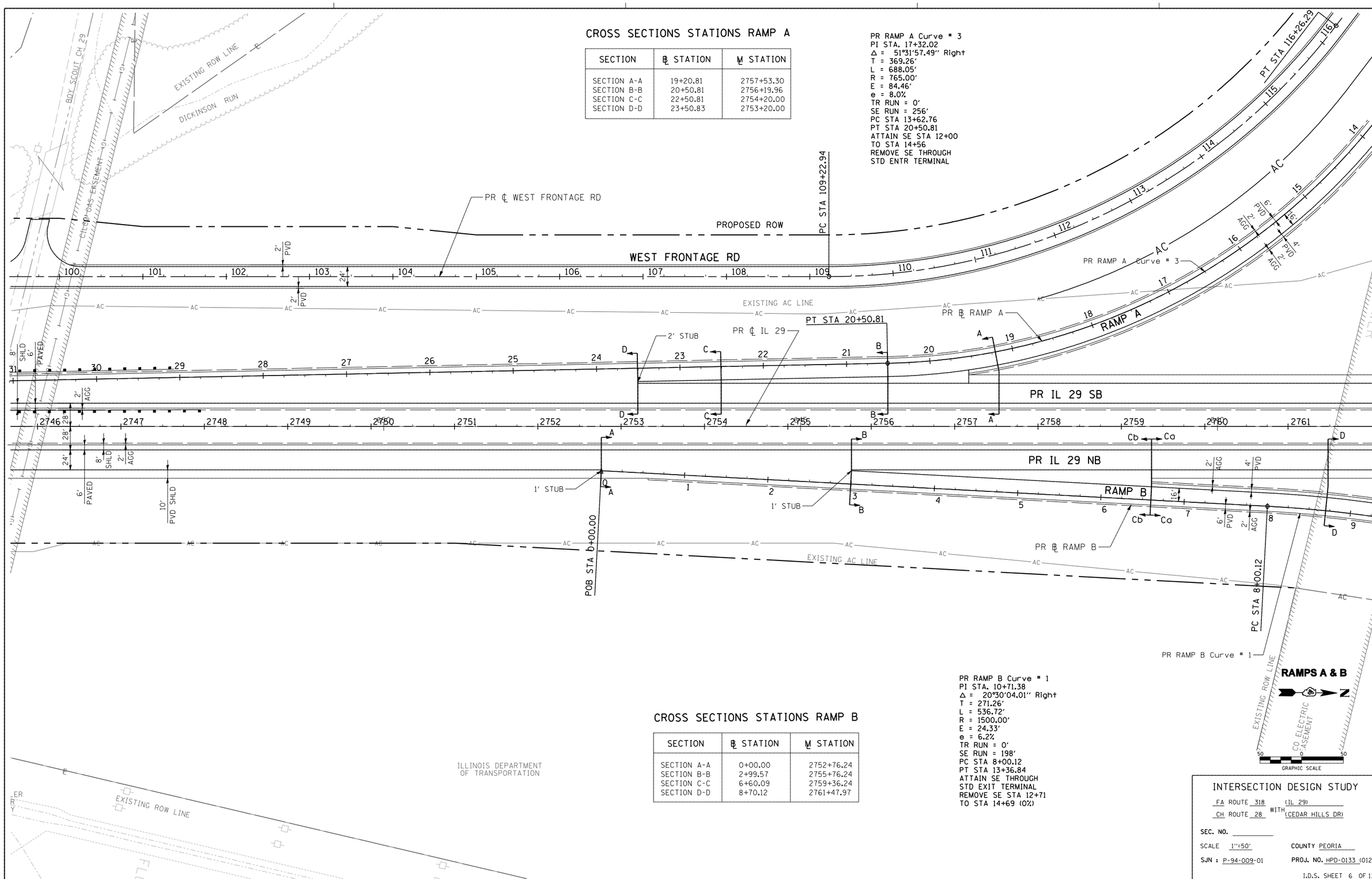
at 4-APR-2009

CROSS SECTIONS STATIONS RAMP A

SECTION	℄ STATION	M STATION
SECTION A-A	19+20.81	2757+53.30
SECTION B-B	20+50.81	2756+19.96
SECTION C-C	22+50.81	2754+20.00
SECTION D-D	23+50.83	2753+20.00

PR RAMP A Curve # 3
PI STA. 17+32.02
Δ = 51°31'57.49" Right
T = 369.26'
L = 688.05'
R = 765.00'
E = 84.46'
e = 8.0%
TR RUN = 0'
SE RUN = 256'
PC STA 13+62.76
PT STA 20+50.81
ATTAIN SE STA 12+00
TO STA 14+56
REMOVE SE THROUGH
STD ENTR TERMINAL



PR RAMP B Curve # 1
PI STA. 10+71.38
Δ = 20°30'04.01" Right
T = 271.26'
L = 536.72'
R = 1500.00'
E = 24.33'
e = 6.2%
TR RUN = 0'
SE RUN = 198'
PC STA 8+00.12
PT STA 13+36.84
ATTAIN SE THROUGH
STD EXIT TERMINAL
REMOVE SE STA 12+71
TO STA 14+69 (0%)

CROSS SECTIONS STATIONS RAMP B

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	2752+76.24
SECTION B-B	2+99.57	2755+76.24
SECTION C-C	6+60.09	2759+36.24
SECTION D-D	8+70.12	2761+47.97

INTERSECTION DESIGN STUDY

FA ROUTE 318 (IL 29)
CH ROUTE 28 WITH (CEDAR HILLS DR)

SEC. NO. _____
SCALE 1"=50'
COUNTY PEORIA
SJN : P-94-009-01
PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 6 OF 13

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PR RAMP D Curve # 3
PI STA. 11+01.53
Δ = 33°26′33″ Right
T = 115.66′
L = 224.72′
R = 385.00′
E = 17.00′
e = 8.0%
PCC STA 9+85.87
PCC STA 12+10.59
ATTAIN SE: SEE CURVE D-2

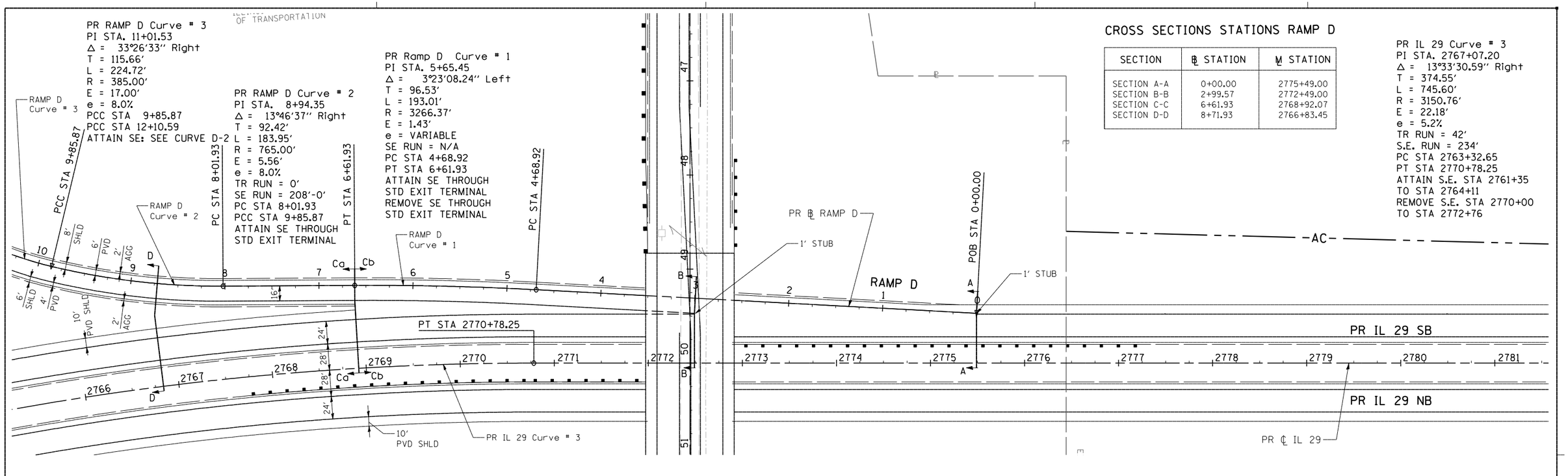
PR RAMP D Curve # 2
PI STA. 8+94.35
Δ = 13°46′37″ Right
T = 92.42′
L = 183.95′
R = 765.00′
E = 5.56′
e = 8.0%
TR RUN = 0′
SE RUN = 208′-0′
PC STA 8+01.93
PCC STA 9+85.87
ATTAIN SE THROUGH
STD EXIT TERMINAL

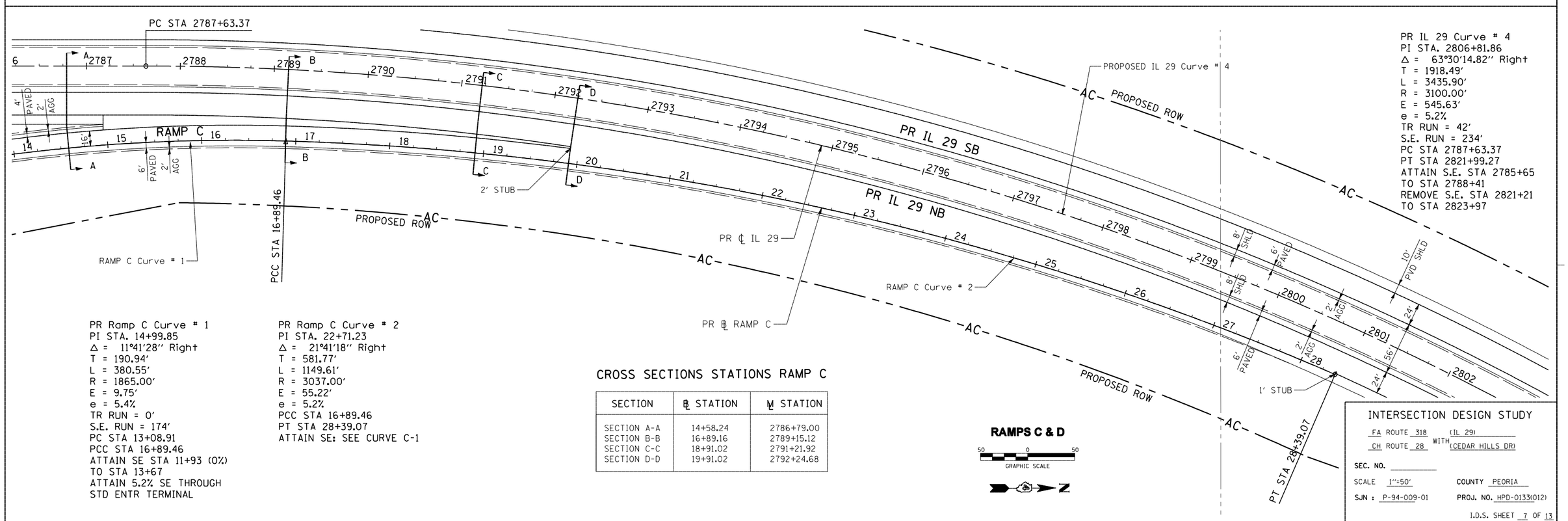
PR Ramp D Curve # 1
PI STA. 5+65.45
Δ = 3°23′08.24″ Left
T = 96.53′
L = 193.01′
R = 3266.37′
E = 1.43′
e = VARIABLE
SE RUN = N/A
PC STA 4+68.92
PT STA 6+61.93
ATTAIN SE THROUGH
STD EXIT TERMINAL
REMOVE SE THROUGH
STD EXIT TERMINAL

PR IL 29 Curve # 3
PI STA. 2767+07.20
Δ = 13°33′30.59″ Right
T = 374.55′
L = 745.60′
R = 3150.76′
E = 22.18′
e = 5.2%
TR RUN = 42′
S.E. RUN = 234′
PC STA 2763+32.65
PT STA 2770+78.25
ATTAIN S.E. STA 2761+35
TO STA 2764+11
REMOVE S.E. STA 2770+00
TO STA 2772+76

CROSS SECTIONS STATIONS RAMP D

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	2775+49.00
SECTION B-B	2+99.57	2772+49.00
SECTION C-C	6+61.93	2768+92.07
SECTION D-D	8+71.93	2766+83.45





PR IL 29 Curve # 4
PI STA. 2806+81.86
Δ = 63°30′14.82″ Right
T = 1918.49′
L = 3435.90′
R = 3100.00′
E = 545.63′
e = 5.2%
TR RUN = 42′
S.E. RUN = 234′
PC STA 2787+63.37
PT STA 2821+99.27
ATTAIN S.E. STA 2785+65
TO STA 2788+41
REMOVE S.E. STA 2821+21
TO STA 2823+97

PR Ramp C Curve # 1
PI STA. 14+99.85
Δ = 11°41′28″ Right
T = 190.94′
L = 380.55′
R = 1865.00′
E = 9.75′
e = 5.4%
TR RUN = 0′
S.E. RUN = 174′
PC STA 13+08.91
PCC STA 16+89.46
ATTAIN SE STA 11+93 (0%)
TO STA 13+67
ATTAIN 5.2% SE THROUGH
STD ENTR TERMINAL

PR Ramp C Curve # 2
PI STA. 22+71.23
Δ = 21°41′18″ Right
T = 581.77′
L = 1149.61′
R = 3037.00′
E = 55.22′
e = 5.2%
PCC STA 16+89.46
PT STA 28+39.07
ATTAIN SE: SEE CURVE C-1

CROSS SECTIONS STATIONS RAMP C

SECTION	℄ STATION	M STATION
SECTION A-A	14+58.24	2786+79.00
SECTION B-B	16+89.16	2789+15.12
SECTION C-C	18+91.02	2791+21.92
SECTION D-D	19+91.02	2792+24.68

RAMPS C & D

50 0 50
GRAPHIC SCALE

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INTERSECTION DESIGN STUDY

FA ROUTE 318 (IL 29)
WITH
CH ROUTE 28 (CEDAR HILLS DR)

SEC. NO. _____

SCALE 1″=50′ COUNTY PEORIA

SJN : P-94-009-01 PROJ. NO. HPD-0133(012)

I.D.S. SHEET 7 OF 13

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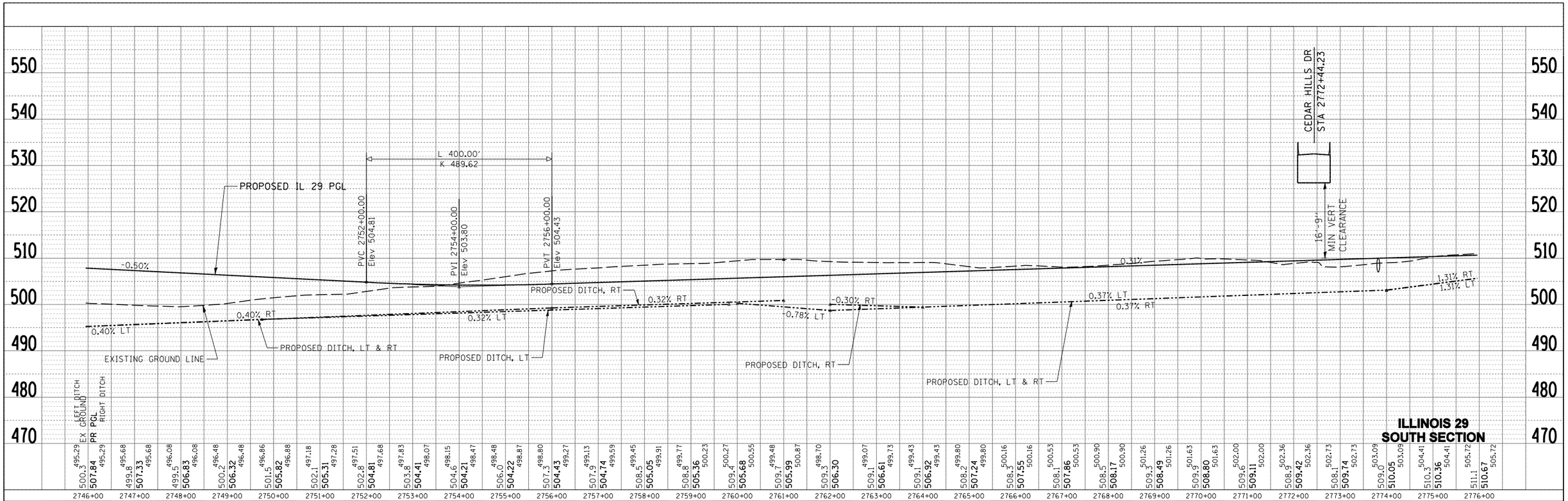

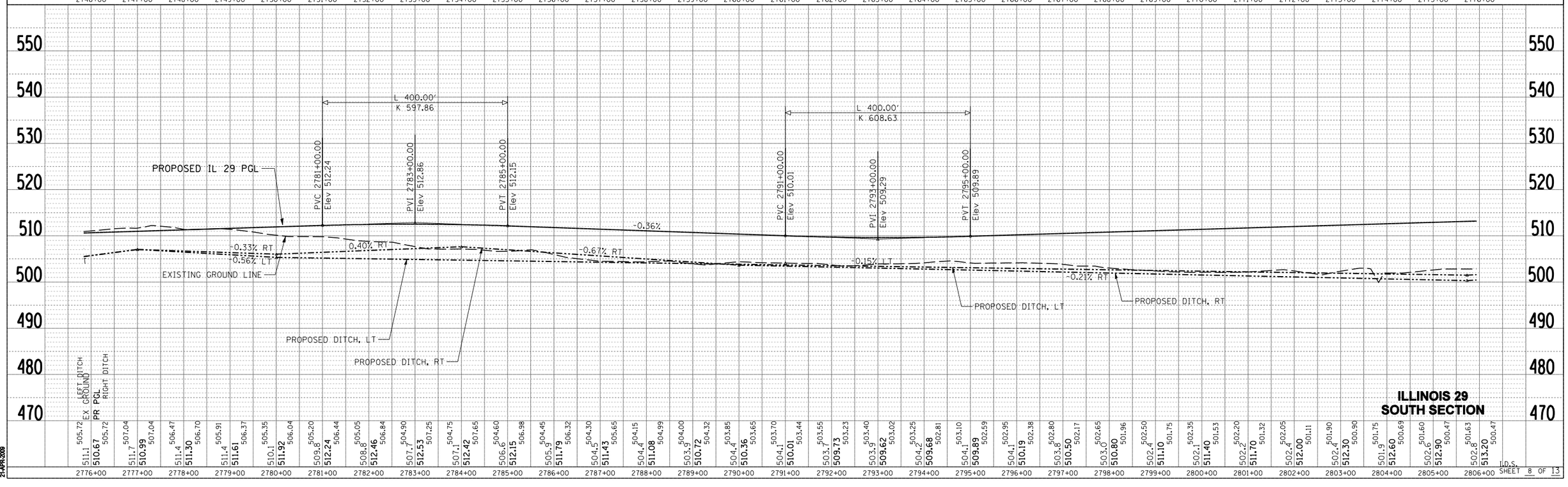

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ALIGNMENT CHECKED
RT. OF WAY CHECKED
BASE FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
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GRADES CHECKED
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STRUCTURE NOTATNS CK'KD
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BY
DATE

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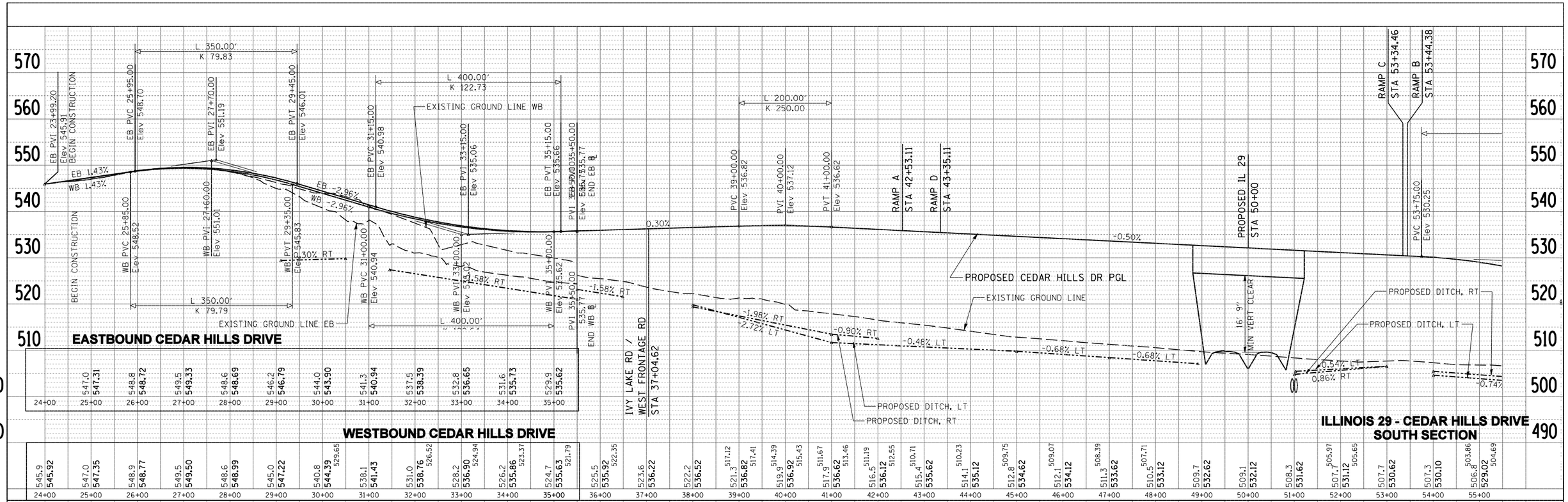
21-APR-2009

I.D.S.
SHEET 8 OF 13



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SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
FIELD BOOK
FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CK'KD
NOTE BOOK
NO.
BY
DATE

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21-APR-2009

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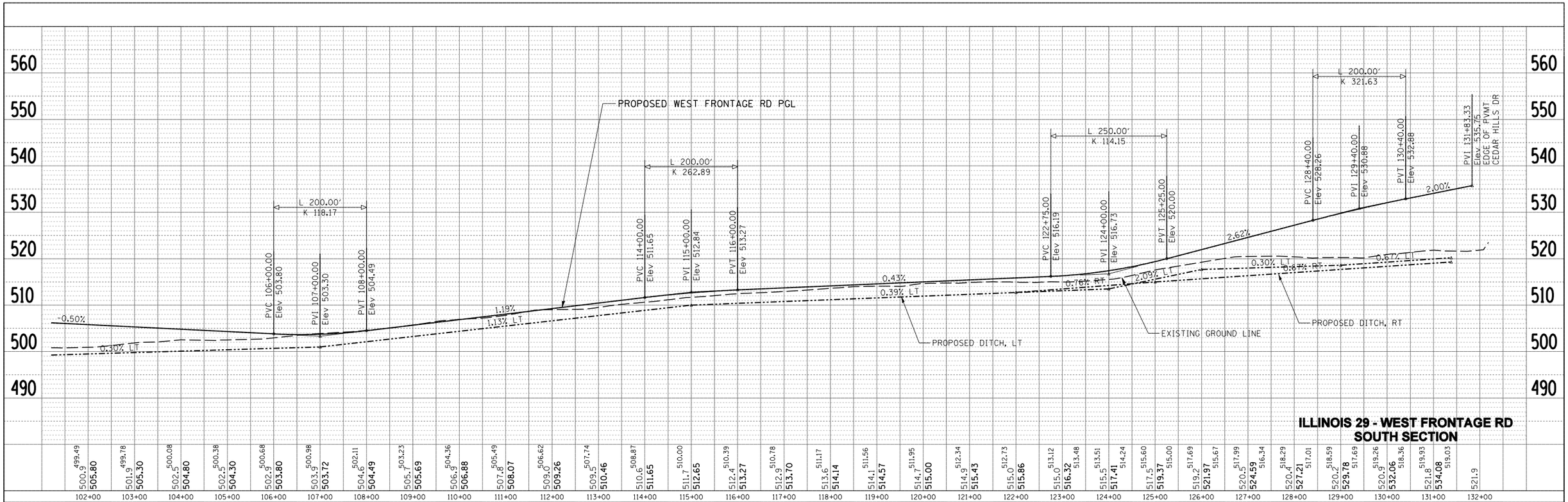
SHEET 9 OF 13



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NOTE BOOK
NO.
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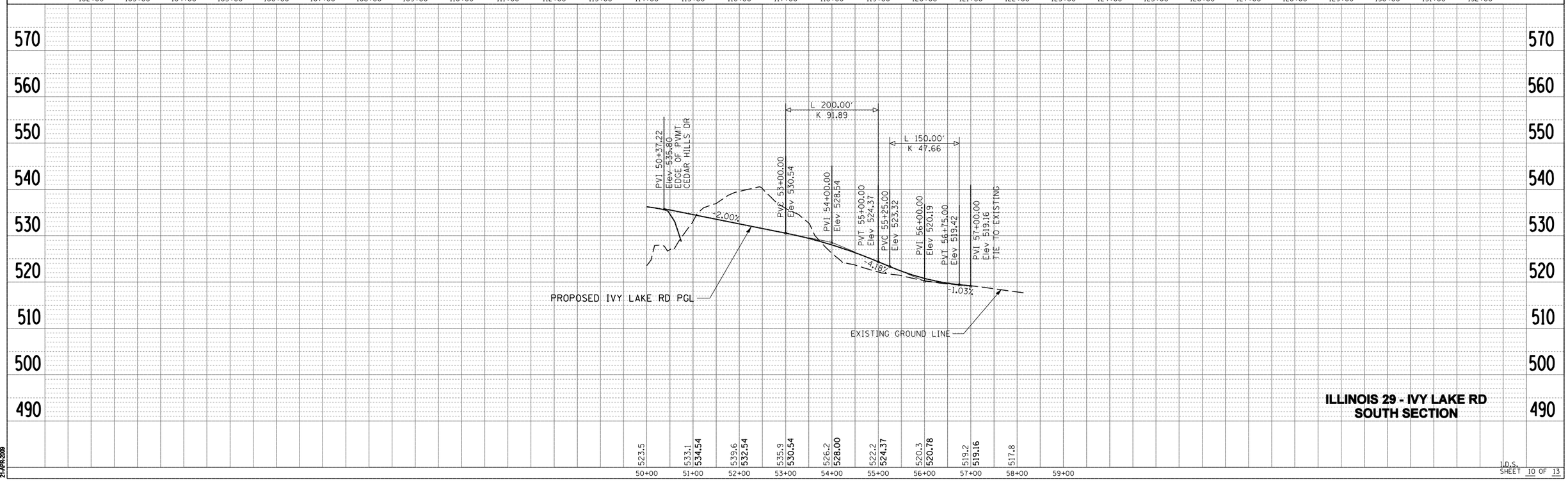

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GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CH'KD
NOTE BOOK
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DATE

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21-APR-2009

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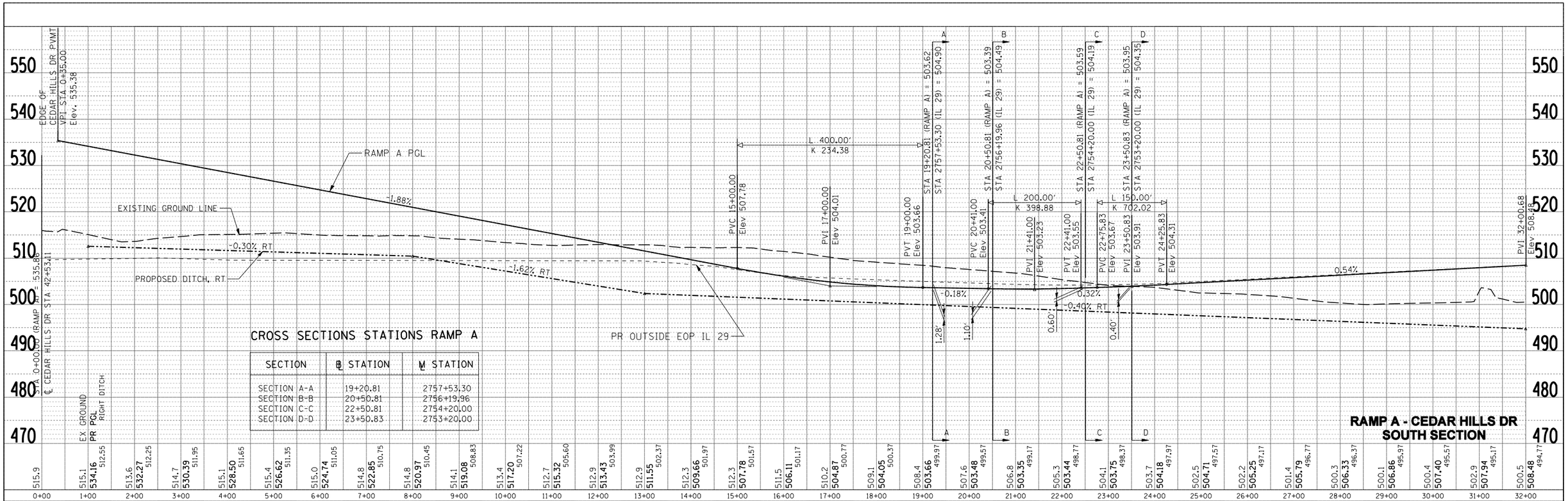
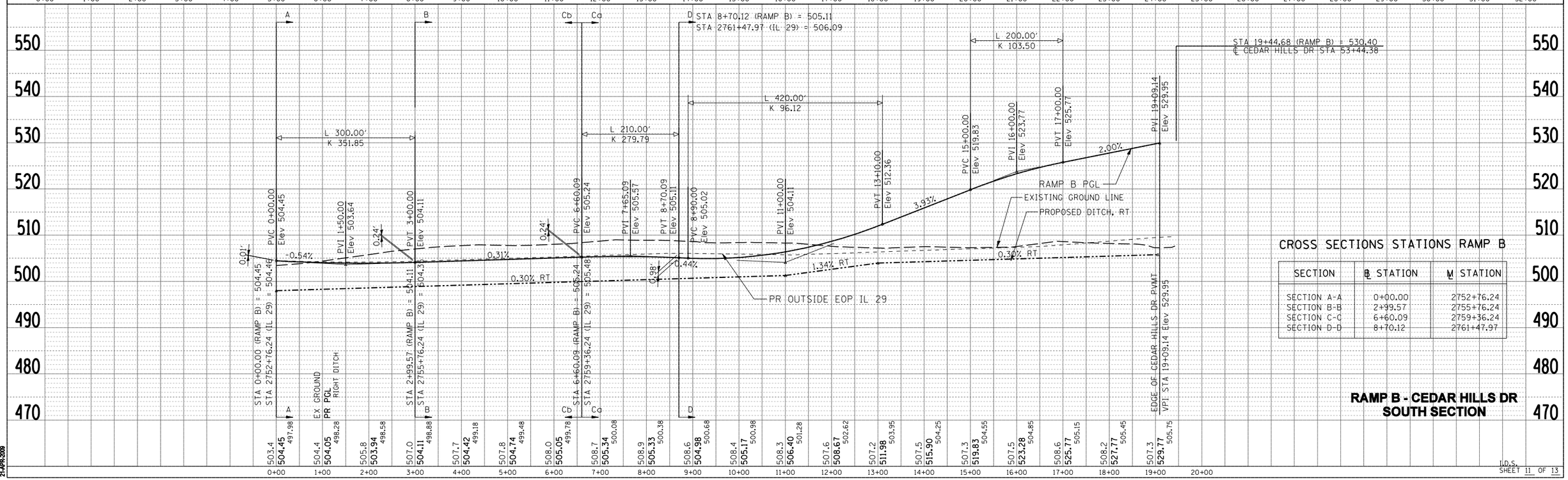
SHEET 10 OF 13



CROSS SECTIONS STATIONS RAMP A

SECTION	B STATION	M STATION
SECTION A-A	19+20.81	2757+53.30
SECTION B-B	20+50.81	2756+19.96
SECTION C-C	22+50.81	2754+20.00
SECTION D-D	23+50.83	2753+20.00



CROSS SECTIONS STATIONS RAMP B

SECTION	B STATION	M STATION
SECTION A-A	0+00.00	2752+76.24
SECTION B-B	2+99.57	2755+76.24
SECTION C-C	6+60.09	2759+36.24
SECTION D-D	8+70.12	2761+47.97

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PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
BY
DATE

PROFILE
NOTE BOOK NO.
SURVEYED 01/01/70
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CK'KD
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21-APR-2009

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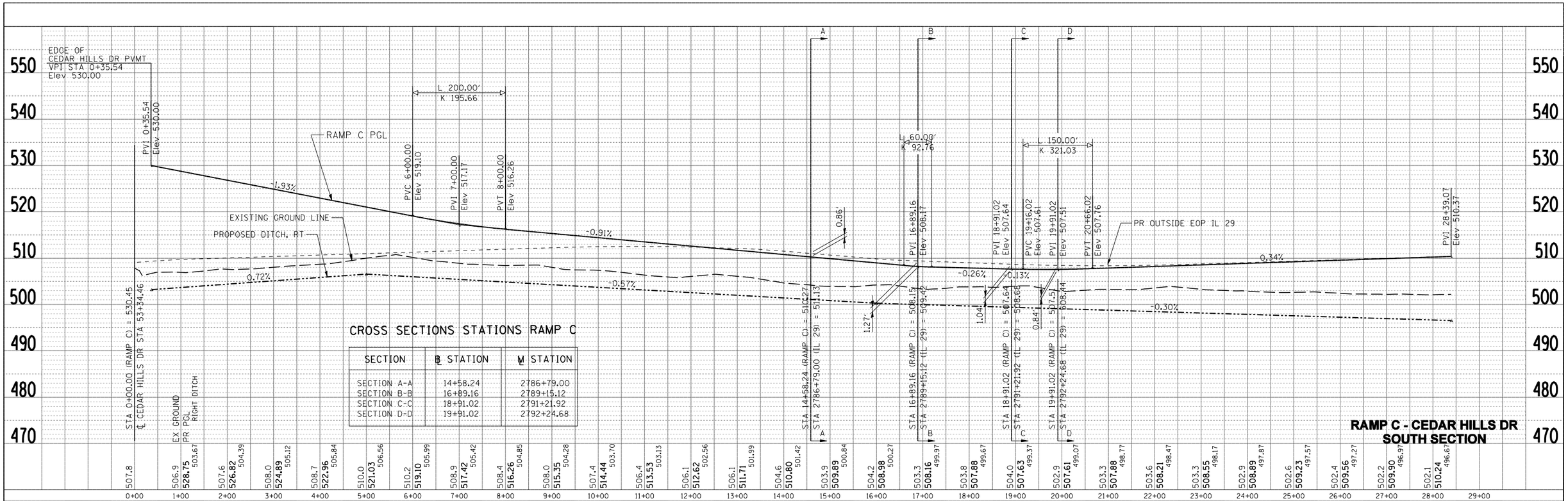
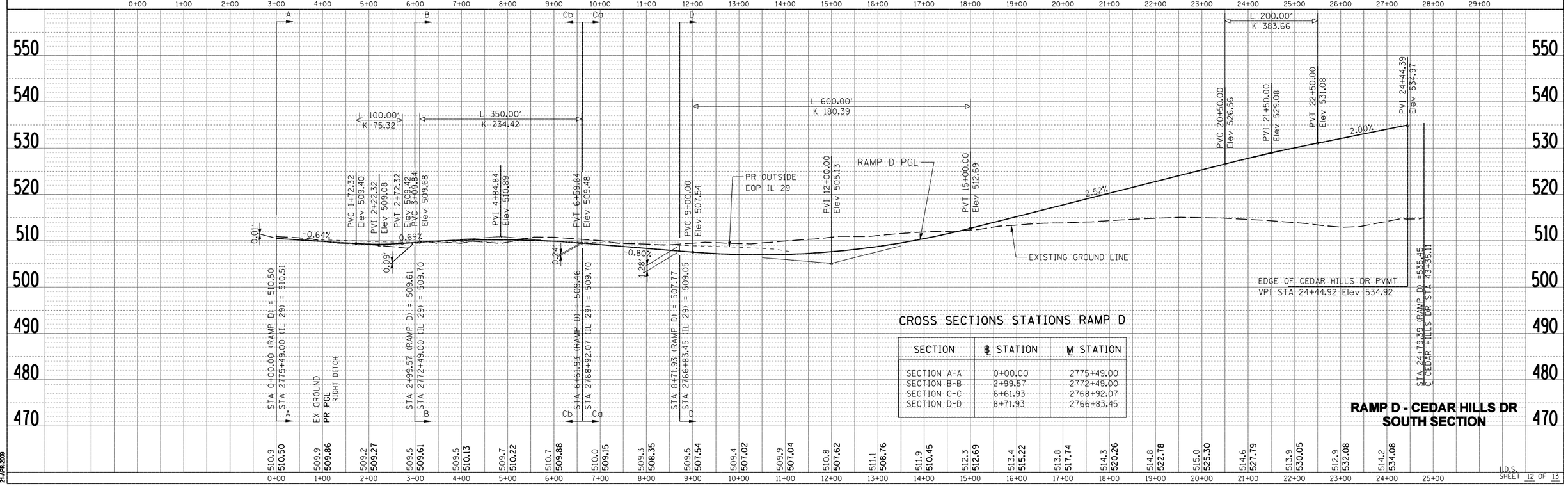
SHEET 11 OF 13



CROSS SECTIONS STATIONS RAMP C

SECTION	℄ STATION	M STATION
SECTION A-A	14+58.24	2786+79.00
SECTION B-B	16+89.16	2789+15.12
SECTION C-C	18+91.02	2791+21.92
SECTION D-D	19+91.02	2792+24.68



CROSS SECTIONS STATIONS RAMP D

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	2775+49.00
SECTION B-B	2+99.57	2772+49.00
SECTION C-C	6+61.93	2768+92.07
SECTION D-D	8+71.93	2766+83.45

PLAN
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ALIGNMENT CHECKED
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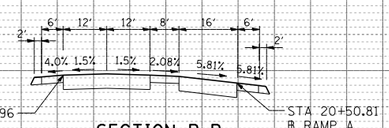
SHEET 12 OF 13

CROSS SECTIONS STATIONS RAMP A

SECTION	℄ STATION	M STATION
SECTION A-A	19+20.81	2757+53.30
SECTION B-B	20+50.81	2756+19.96
SECTION C-C	22+50.81	2754+20.00
SECTION D-D	23+50.83	2753+20.00



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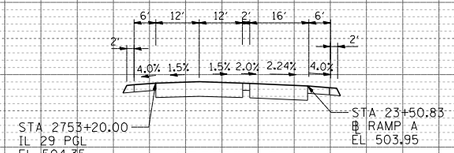

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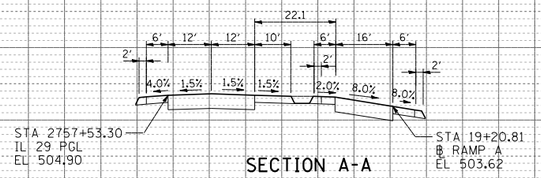

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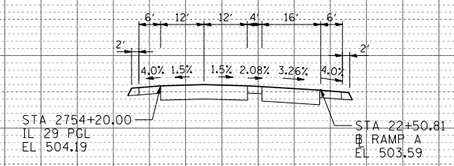
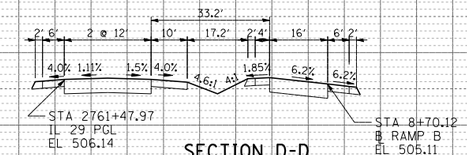


SECTION C-C

CROSS SECTIONS STATIONS RAMP B

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	2752+76.24
SECTION B-B	2+99.57	2755+76.24
SECTION C-C	6+60.09	2759+36.24
SECTION D-D	8+70.12	2761+47.97



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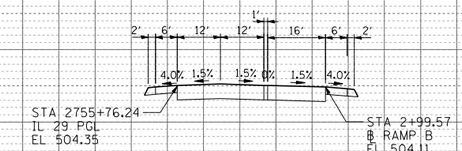

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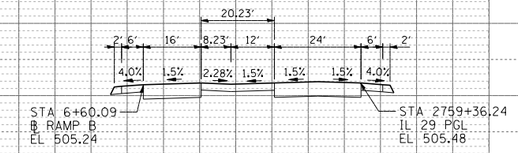
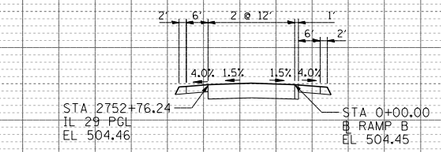


SECTION Cb-Cb



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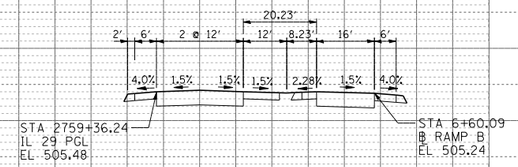
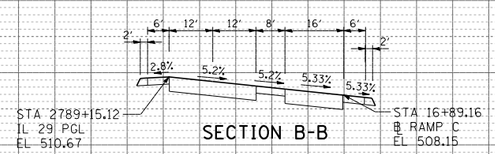


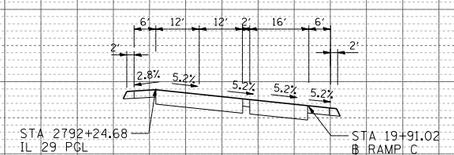
SECTION Ca-Ca

CROSS SECTIONS STATIONS RAMP C

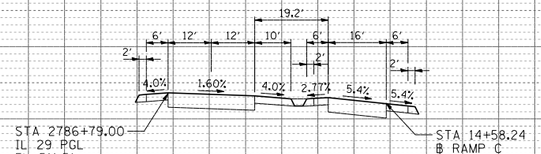
SECTION	℄ STATION	M STATION
SECTION A-A	14+58.24	2786+79.00
SECTION B-B	16+89.16	2789+15.12
SECTION C-C	18+91.02	2791+21.92
SECTION D-D	19+91.02	2792+24.68



SECTION B-B



SECTION D-D



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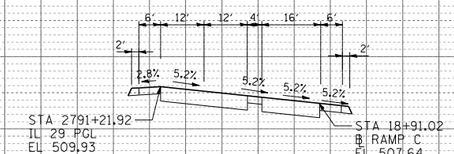
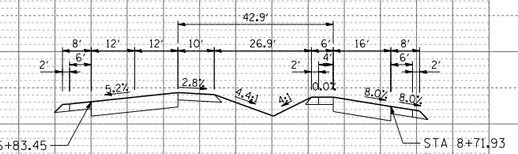


SECTION C-C

CROSS SECTIONS STATIONS RAMP D

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	2775+49.00
SECTION B-B	2+99.57	2772+49.00
SECTION C-C	6+61.93	2768+92.07
SECTION D-D	8+71.93	2766+83.45



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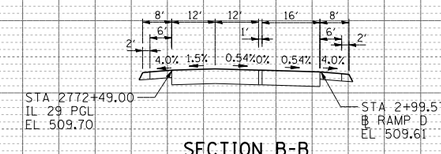

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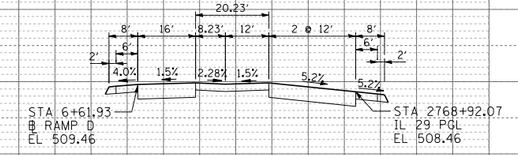
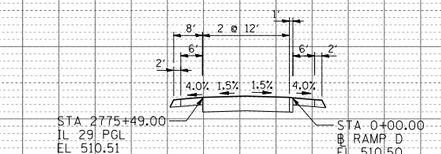


SECTION Cb-Cb



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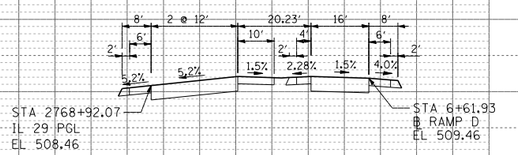

SECTION Ca-Ca

RAMP CROSS SECTIONS - CEDAR HILLS DR SOUTH SECTION

I.D.S.
SHEET 13 OF 13

PLAN	BY	DATE
SURVEYED / PLOTTED / ALIGNMENT CHECKED / RT. OF WAY CHECKED / CADD FILE NAME		
NOTE BOOK NO.		

PROFILE	BY	DATE
SURVEYED / PLOTTED / GRADES CHECKED / B.M. NOTED / STRUCTURE NOTATNS CH'KD		
NOTE BOOK NO.		

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21-APR-2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERCHANGE DESIGN STUDY
IL 29 /ROME WEST ROAD INTERCHANGE

PREPARED BY : CH2MHILL

SEPTEMBER 2007

Illinois Department of Transportation

CH2MHILL

June 2010
Catalog No. 032469-00P

mfox
C:\Projects\168912 - IDOT Illinois 29 - Phase I Engineering Services\Appendix E_ROMEWEST_IDS_CoverSheet.aht
17-MAR-2009

RAMP TYPE		NB OFF	SB ON	NB ON	SB OFF
DISTANCE TO ADJACENT RAMPS (FT.)		3290	3160	3290	3160
TERRAIN/GRADE		LEVEL	LEVEL	LEVEL	LEVEL
FREEWAY VOLUME	A.M.	334	375	242	470
	P.M.	601	295	460	373
RAMP VOLUME	A.M.	92	114	66	95
	P.M.	141	114	116	78
TRUCK TYPES		TYP	TYP	TYP	TYP
% OF TRUCKS ON FREEWAY		20	20	20	20
PEAK-HOUR FACTOR		0.90	0.90	0.90	0.90
% OF TRUCKS ON RAMP		20	20	20	20
NUMBER OF LANES ON FREEWAY		2	2	2	2
DESIGN SPEED		70	70	70	70
CHECK POINT VOLUME (FREEWAY + RAMP)	A.M.	408	597	377	574
	P.M.	735	500	704	456
DENSITY/SPEED* (PC/MI/LN)/(MPH) (FREEWAY)	A.M.	5.1/63.2	4.7/63.2	3.0/63.2	6.5/63.2
	P.M.	7.9/63.0	4.0/63.2	5.6/63.2	5.5/63.2
LEVEL OF SERVICE (RAMP)	A.M.	A	A	A	A
	P.M.	A	A	A	A

• NOTE:
THE PREDICTION OF DENSITY AND THE MODEL TO DETERMINE THIS VARIABLE ARE DISCUSSED IN THE HCM. DENSITY IS MEASURED IN PASSENGER CARS PER MILE PER LANE (PC/MI/LN). THE AVERAGE TRAVEL SPEED MAY BE PREDICTED WITHIN THE RAMP INFLUENCE AREA, BUT SHOULD NOT BE USED AS A PRIMARY MEASURE OF LEVEL OF SERVICE.

GENERAL NOTES

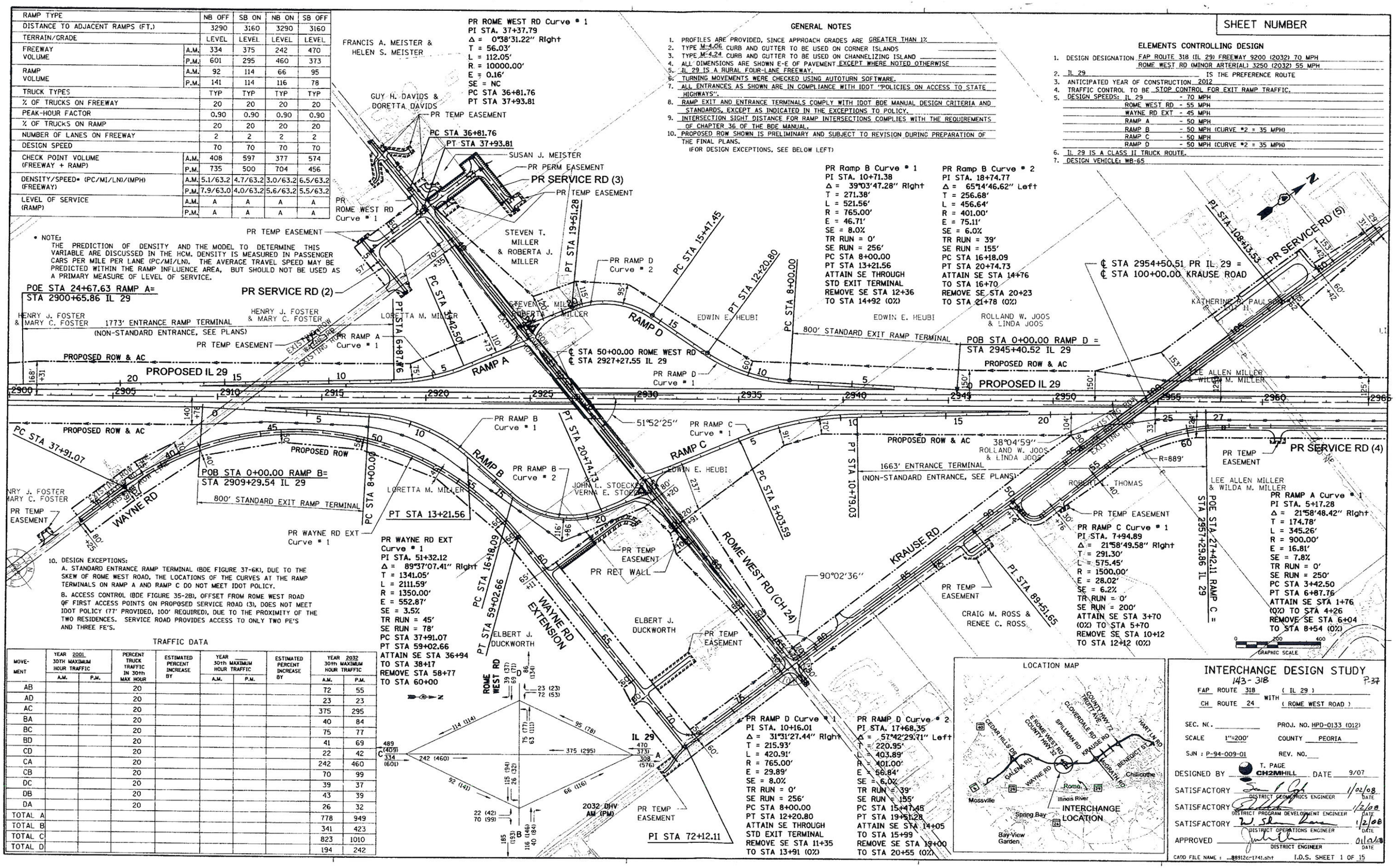
1. PROFILES ARE PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. TYPE M-4.06 CURB AND GUTTER TO BE USED ON CORNER ISLANDS
3. TYPE M-4.24 CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND
4. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT EXCEPT WHERE NOTED OTHERWISE
5. IL 29 IS A RURAL FOUR-LANE FREEWAY.
6. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE.
7. ALL ENTRANCES AS SHOWN ARE IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
8. RAMP EXIT AND ENTRANCE TERMINALS COMPLY WITH IDOT BDE MANUAL DESIGN CRITERIA AND STANDARDS, EXCEPT AS INDICATED IN THE EXCEPTIONS TO POLICY.
9. INTERSECTION SIGHT DISTANCE FOR RAMP INTERSECTIONS COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE BDE MANUAL.
10. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF THE FINAL PLANS.

(FOR DESIGN EXCEPTIONS, SEE BELOW LEFT)

SHEET NUMBER

ELEMENTS CONTROLLING DESIGN

1. DESIGN DESIGNATION FAP ROUTE 318 (IL 29) FREEWAY 9200 (2032) 70 MPH
   ROME WEST RD (MINOR ARTERIAL) 3250 (2032) 55 MPH
2. IL 29 IS THE PREFERENCE ROUTE
3. ANTICIPATED YEAR OF CONSTRUCTION 2012
4. TRAFFIC CONTROL TO BE STOP CONTROL FOR EXIT RAMP TRAFFIC.
5. DESIGN SPEEDS: IL 29 - 70 MPH
   ROME WEST RD - 55 MPH
   WAYNE RD EXT - 45 MPH
   RAMP A - 50 MPH
   RAMP B - 50 MPH (CURVE #2 = 35 MPH)
   RAMP C - 50 MPH
   RAMP D - 50 MPH (CURVE #2 = 35 MPH)
6. IL 29 IS A CLASS II TRUCK ROUTE.
7. DESIGN VEHICLE: WB-65



10. DESIGN EXCEPTIONS:
A. STANDARD ENTRANCE RAMP TERMINAL (BDE FIGURE 37-6K), DUE TO THE SKEW OF ROME WEST ROAD, THE LOCATIONS OF THE CURVES AT THE RAMP TERMINALS ON RAMP A AND RAMP C DO NOT MEET IDOT POLICY.
B. ACCESS CONTROL (BDE FIGURE 35-2B), OFFSET FROM ROME WEST ROAD OF FIRST ACCESS POINTS ON PROPOSED SERVICE ROAD (3), DOES NOT MEET IDOT POLICY (77' PROVIDED, 100' REQUIRED), DUE TO THE PROXIMITY OF THE TWO RESIDENCES. SERVICE ROAD PROVIDES ACCESS TO ONLY TWO PE'S AND THREE FE'S.

TRAFFIC DATA

MOVEMENT	YEAR 2001 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30TH MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB			20					72	55
AD			20					23	23
AC			20					375	295
BA			20					40	84
BC			20					75	77
BD			20					41	69
CD			20					22	42
CA			20					242	460
CB			20					70	99
DC			20					39	37
DB			20					43	39
DA			20					26	32
TOTAL A								778	949
TOTAL B								341	423
TOTAL C								823	1010
TOTAL D								194	242

LOCATION MAP

INTERCHANGE DESIGN STUDY

143-318 P-37

FAP ROUTE 318 (IL 29) WITH
CH ROUTE 24 (ROME WEST ROAD)

SEC. NO. _____ PROJ. NO. HPD-0133 (012)
SCALE 1"=200' COUNTY PEORIA
SJN : P-94-009-01 REV. NO. _____

DESIGNED BY T. PAGE CH2MHILL DATE 9/07
SATISFACTORY DISTRICT GEOMETRICS ENGINEER 1/02/08 DATE
SATISFACTORY DISTRICT PROGRAM DEVELOPMENT ENGINEER 1/2/08 DATE
SATISFACTORY DISTRICT OPERATIONS ENGINEER 1/2/08 DATE
APPROVED DISTRICT ENGINEER 01/02/08 DATE

CADD FILE NAME : ...88912c-1741.sht I.D.S. SHEET 1 OF 15

•DGN-SPEC• •DATE-TIME• •REF- •REF- •REF- •REF-

Plotted by bgarvin
\\atherwood\168912_\206912\dgn drawings\88912c1741.sht
9/27/2007

SHEET NUMBER

2032 DHV
AM (PM)

23 (23)
72 (55)
RAMP D
63 (111)
75 (77)
ROME WEST RD
69 (71)
39 (37)
RAMP A

TYPICAL CHANNELIZED ISLAND DESIGN
IN ACCORDANCE WITH IDOT'S "TRANSITIONAL APPROACHES TO CHANNELIZED INTERSECTIONS"

STA 38+74.24
43.34' LT
END ACCESS CONTROL

STA 38+75.10
16.93' LT

12067.39'R

STA 39+10.57
18.00' LT

1' R
STA 39+11.23
3.01' LT

STA 40+61.39
4.95' LT

14078.82'R

STA 43+54.48
25.00' LT

STA 44+27.66
25.00' LT

℄ STA 45+54.58 ROME WEST RD =
℄ STA 22+14.19 RAMP D

PROPOSED ROW & AC

EXISTING ROW

EXISTING ROW

MATCHLINE STA 38+50.00

STA 38+74.13
12.43' RT

5535.07'R

4891.11'R

2' R RAMPED NOSE
L = 6' STA 41+40.67
5.50' LT

8855.99'R

℄ ROME WEST RD

STA 40+40.57
1.99' RT

PR CORRUGATED
MEDIAN

CONCRETE MEDIAN SURFACE, 4"
WITH TYPE M-4.24 CURB & GUTTER

EX WAYNE RD

EXISTING ROW

EXISTING ROW

STA 44+16.91
11.00' RT

STA 44+16.91
25.00' RT

10' SHOULDER
8' PAVED, 2' AGG

2-CENTERED CURVE
R = 85' - 400'
OFFSET = 8'

STA 45+17.24
35.16' LT

STA 45+62.13
11.00' LT

STA 45+41.43
25.00' RT

2-CENTERED CURVE
R = 50' - 300'
OFFSET = 11'

8' SHOULDER
6' PAVED, 2' AGG

PT STA 19+51.28

STA 21+14.80
0.00'

SILOS

PROPOSED ROW & AC

RAMP D

8' SHOULDER
6' PAVED, 2' AGG

PROPOSED ℄ RAMP D

6' SHOULDER
4' PAVED, 2' AGG

PROPOSED RAMP D CURVE #2

STA 20+37.75
16.00' LT (RAMP D)

2-CENTERED CURVE
R = 90' - 180'
OFFSET = 23'

STA 21+57.93
62.00' LT (RAMP D)

STA 46+37.30
25.00' LT

℄ STA 46+24.68 ROME WEST RD =
℄ STA. 0+00.00 RAMP A

10' SHOULDER
8' PAVED, 2' AGG

STA 49+49.30
1.00' RT

ROME WEST RD
240' STORAGE

240' TAPER

50' TAPER

20:1 TAPER

STA 47+59.30
11.00' RT

2' R
RAMPED NOSE,
L =6'
STA 47+09.30
3.00' RT

STA 46+50.11
25.00' RT

3' R RAMPED
NOSE, L =6'
STA 46+18.37
8.00' RT

STA 0+61.17
19.00' LT

STA 1+46.17
16.00' LT

STA 1+67.33
0.00'

STA 0+79.32
13.20' RT

85' TAPER

PROPOSED IL 29

STA 51+89.30
11.00' LT

STA 51+89.30
1.00' LT

240' TAPER

℄ STA 50+00.00 ROME WEST RD =
℄ STA. 2927+27.55 IL 29

STA 49+49.30
11.00' RT

PR TYPE SM-4.24 MEDIAN

PROPOSED ℄ IL 29

PR Ramp B Curve # 2
PI STA. 18+74.77
Δ = 65°14'46.62" Left
T = 256.68'
L = 456.64'
R = 401.00'
E = 75.11'
SE = 6.0%
TR RUN = 39'
SE RUN = 155'
PC STA 16+18.09
PT STA 20+74.73
ATTAIN SE STA 14+76
TO STA 16+70
REMOVE SE STA 20+23
TO STA 21+78 (0%)

PR RAMP A Curve # 1
PI STA. 5+17.28
Δ = 21°58'48.42" Right
T = 174.78'
L = 345.26'
R = 900.00'
E = 16.81'
SE = 7.8%
TR RUN = 0'
SE RUN = 250'
PC STA 3+42.50
PT STA 6+87.76
ATTAIN SE STA 1+76
(0%) TO STA 4+26
REMOVE SE STA 6+04
TO STA 8+54 (0%)

RAMP A

8' SHOULDER
6' PAVED, 2' AGG

6' SHOULDER
4' PAVED, 2' AGG

PC STA 3+42.50

PROPOSED ROW & AC

PROPOSED ℄ RAMP A

PROPOSED RAMP A CURVE #1

PT STA 6+87.76

8' SHOULDER
6' PAVED, 2' AGG

GRAPHIC SCALE 0 50 100

CAPACITY DESIGN STUDY

N/A PHASE
N/A SEC. CYCLE
SIGNAL TYPE 2-WAY STOP

AREA OTHER
AVERAGE INTERSECTION DELAY A.M. - SEC. P.M. - SEC.
PROGRAM USED HCS 2000, 4.1d

PEAK HOUR FACTOR 0.90
INTERSECTION LEVEL OF SERVICE A.M. - P.M. -

APPROACH		SB		WB		EB			
BUS STOP CONDITION		N/A		N/A	N/A	N/A			
PARKING MANEUVER/HR.		N/A		N/A	N/A	N/A			
PEDESTRIANS		N/A		N/A	N/A	N/A			
ARRIVAL TYPE		N/A		N/A	N/A	N/A			
LANE UTILIZATION FACTOR		1.0		1.0	1.0	1.0			
BASE SATURATION FLOW		-		-	1700	1700			
D - DISTANCE		N/A		240'	N/A	N/A			
LANE GROUP		LR		L	T	TR			
LANE WIDTHS		16'		12'	14'	14'			
GREEN TIME (SECONDS)	A.M.	N/A		N/A	N/A	N/A			
	P.M.	N/A		N/A	N/A	N/A			
G/C RATIO	A.M.	N/A		N/A	N/A	N/A			
	P.M.	N/A		N/A	N/A	N/A			
LANE GROUP DELAY (SECONDS)	A.M.	11.1		7.8	-	-			
	P.M.	11.2		7.8	-	-			
V/C RATIO	A.M.	0.13		0.06	-	-			
	P.M.	0.11		0.06	-	-			
LEVEL OF SERVICE	A.M.	B		A	-	-			
	P.M.	B		A	-	-			
2032 30TH MAX. HOUR TRAFFIC	A.M.	95		75	63	108			
	P.M.	78		77	111	108			
2012 8TH MAX. HOURLY TRAFFIC	A.M.	NOT AVAILABLE							
	P.M.	NOT AVAILABLE							

INTERCHANGE DESIGN STUDY

FAP ROUTE 318 (IL 29) WITH
CH ROUTE 24 (ROME WEST RD)

SEC. NO. ____ PROJ. NO. HPD-0133 (012)
SCALE 1"=50' COUNTY PEORIA
SJN : P-94-009-01 REV. NO. ____

DESIGNED BY T. PAGE / CH2MHILL DATE 9/07
SATISFACTORY — DISTRICT GEOMETRICS ENGINEER — DATE 1/02/08
SATISFACTORY — DISTRICT PROGRAM DEVELOPMENT ENGINEER — DATE 1/2/08
SATISFACTORY — DISTRICT OPERATIONS ENGINEER — DATE 1/2/08
APPROVED — DISTRICT ENGINEER — DATE 01/02/08

CADD FILE NAME : ...\8912cr1742.sht I.D.S. SHEET 2 OF 15

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Plotted by: tgarrick
Date/Time: Jan 11, 2008 8:56:12 AM
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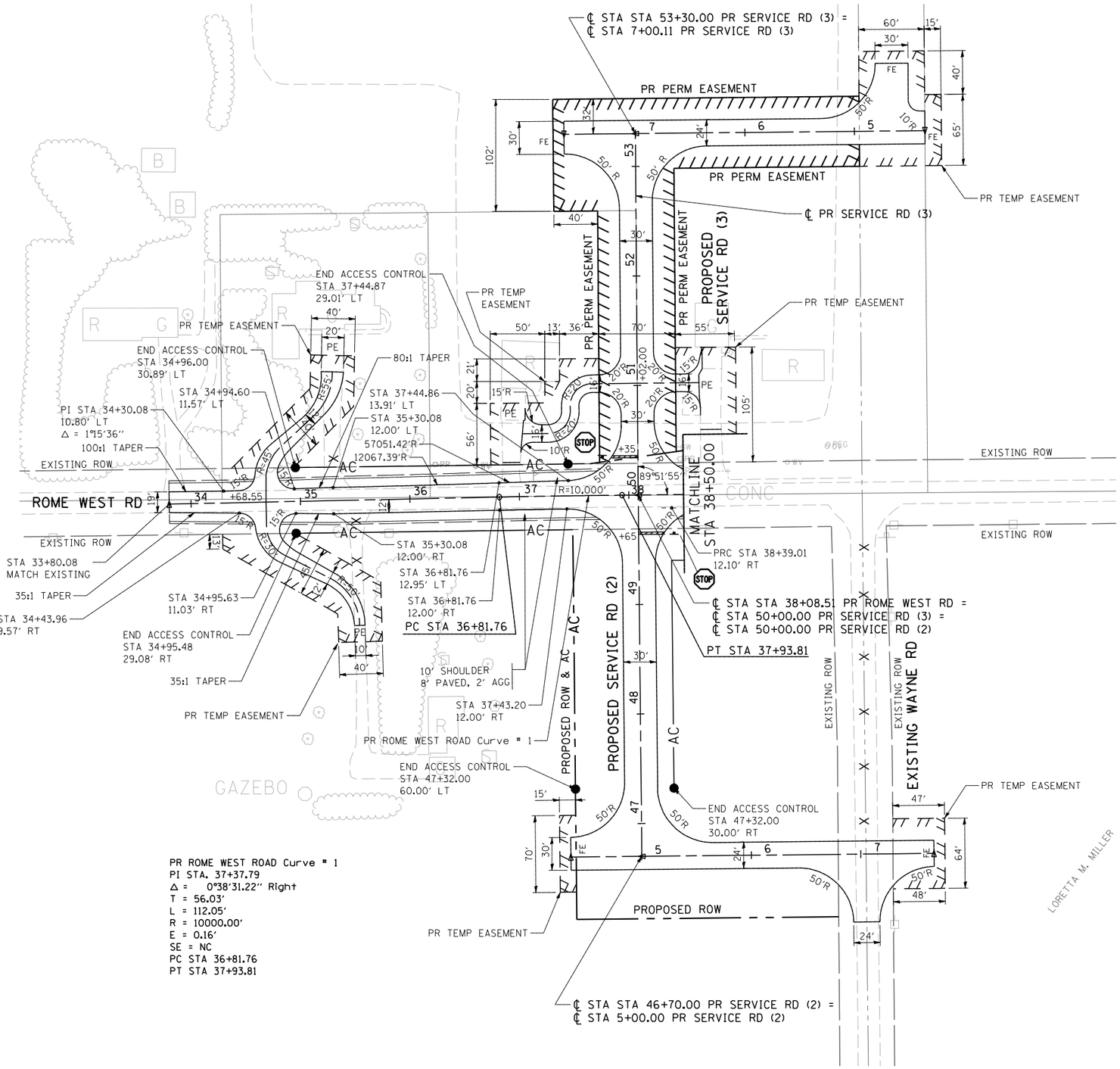

PR ROME WEST ROAD Curve # 1
PI STA. 37+37.79
Δ = 0°38'31.22" Right
T = 56.03'
L = 112.05'
R = 10000.00'
E = 0.16'
SE = NC
PC STA 36+81.76
PT STA 37+93.81

INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29)
CH ROUTE 24 WITH (ROME WEST RD)

SEC. NO. _____

SCALE 1"=50' COUNTY PEORIA

SJN : P-94-009-01 PROJ. NO. _____

CADD FILE NAME : $FILEABBREV$ I.D.S. SHEET 3 OF 15

BDE-9808

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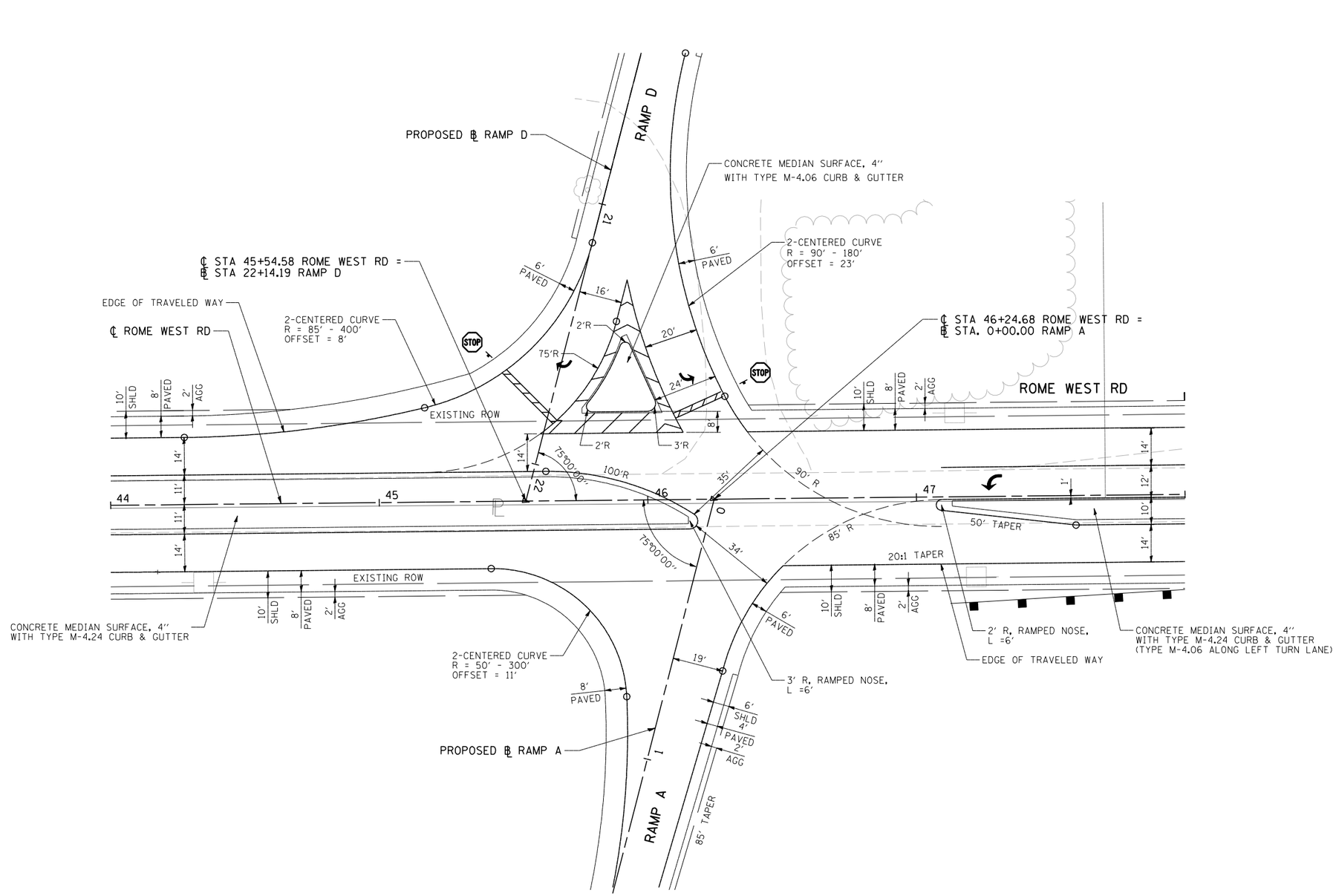
21-APR-2009



ISLANDS DETAIL

ROME WEST ROAD AT RAMPS A & D

20 0 20
GRAPHIC SCALE

INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29)
CH ROUTE 24 WITH (ROME WEST RD)

SEC. NO. _____

SCALE 1"=20' COUNTY PEORIA

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 4 OF 15

BDE-9808

•DGN-SPEC•
•DATE-TIME•
•REF-
•REF-
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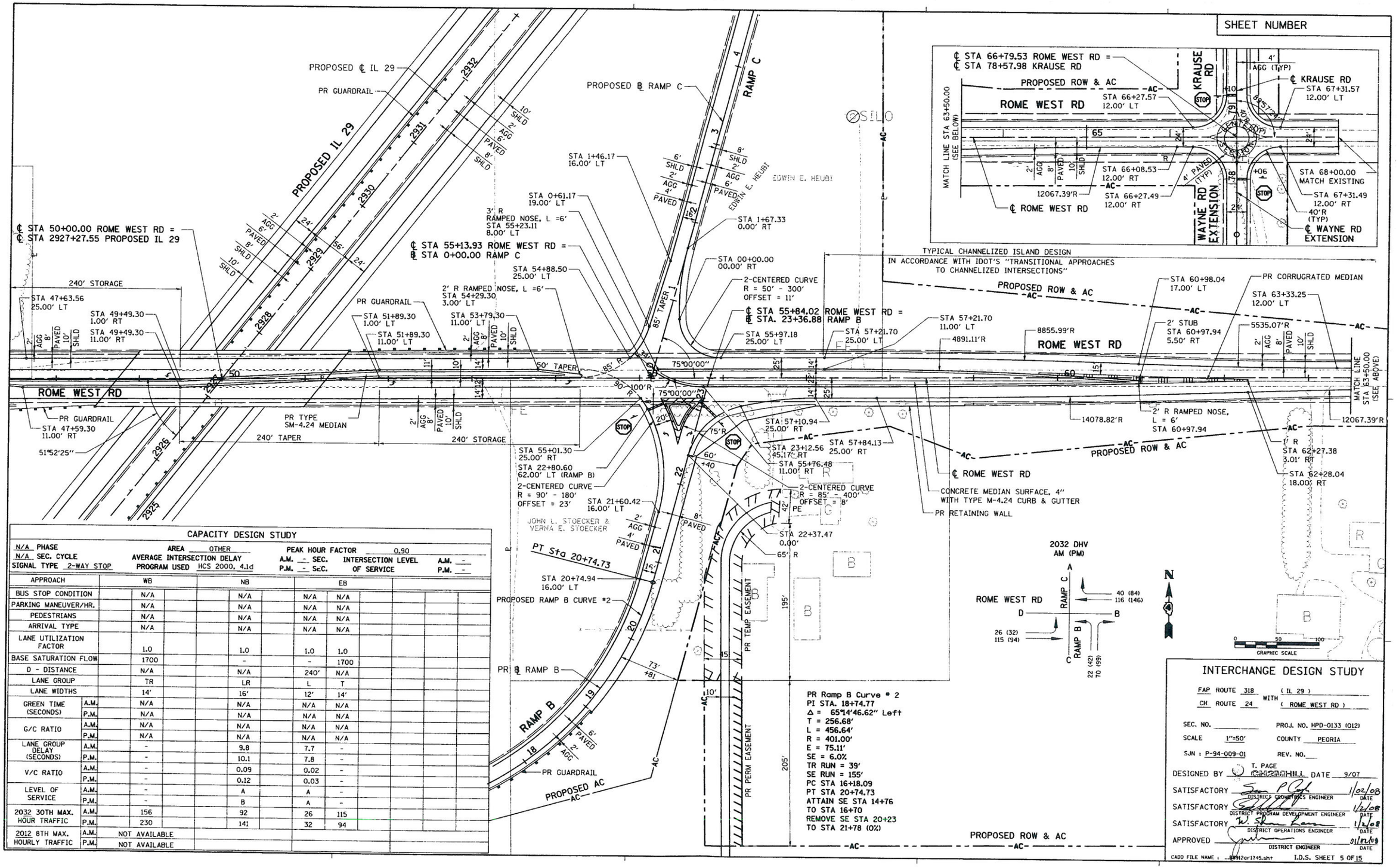
21-APR-2009

SHEET NUMBER



CAPACITY DESIGN STUDY

N/A PHASE
N/A SEC. CYCLE
SIGNAL TYPE 2-WAY STOP

AREA OTHER
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS 2000, 4.1d

PEAK HOUR FACTOR 0.90
A.M. -- SEC. P.M. -- SEC.
INTERSECTION LEVEL OF SERVICE A.M. -- P.M. --

APPROACH		WB	NB	EB						
BUS STOP CONDITION		N/A	N/A	N/A	N/A					
PARKING MANEUVER/HR.		N/A	N/A	N/A	N/A					
PEDESTRIANS		N/A	N/A	N/A	N/A					
ARRIVAL TYPE		N/A	N/A	N/A	N/A					
LANE UTILIZATION FACTOR		1.0	1.0	1.0	1.0					
BASE SATURATION FLOW		1700	-	-	1700					
D - DISTANCE		N/A	N/A	240'	N/A					
LANE GROUP		TR	LR	L	T					
LANE WIDTHS		14'	16'	12'	14'					
GREEN TIME (SECONDS)	A.M.	N/A	N/A	N/A	N/A					
	P.M.	N/A	N/A	N/A	N/A					
G/C RATIO	A.M.	N/A	N/A	N/A	N/A					
	P.M.	N/A	N/A	N/A	N/A					
LANE GROUP DELAY (SECONDS)	A.M.	-	9.8	7.7	-					
	P.M.	-	10.1	7.8	-					
V/C RATIO	A.M.	-	0.09	0.02	-					
	P.M.	-	0.12	0.03	-					
LEVEL OF SERVICE	A.M.	-	A	A	-					
	P.M.	-	B	A	-					
2032 30TH MAX. HOUR TRAFFIC	A.M.	156	92	26	115					
	P.M.	230	141	32	94					
2012 8TH MAX. HOURLY TRAFFIC	A.M.	NOT AVAILABLE								
	P.M.	NOT AVAILABLE								

PR Ramp B Curve # 2
PI STA. 18+74.77
Δ = 65°14'46.62" Left
T = 256.68'
L = 456.64'
R = 401.00'
E = 75.11'
SE = 6.0%
TR RUN = 39'
SE RUN = 155'
PC STA 16+18.09
PT STA 20+74.73
ATTAIN SE STA 14+76
TO STA 16+70
REMOVE SE STA 20+23
TO STA 21+78 (0%)

INTERCHANGE DESIGN STUDY

FAP ROUTE 318 (IL 29) WITH
CH ROUTE 24 (ROME WEST RD)

SEC. NO. ____ PROJ. NO. HPD-0133 (012)
SCALE 1"=50' COUNTY PEORIA
SJN : P-94-009-01 REV. NO. ____

DESIGNED BY T. PAGE (CH2M HILL) DATE 9/07
SATISFACTORY ____ DISTRICT GEOMETRICS ENGINEER 1/02/08 DATE
SATISFACTORY ____ DISTRICT PROGRAM DEVELOPMENT ENGINEER 1/2/08 DATE
SATISFACTORY ____ DISTRICT OPERATIONS ENGINEER 1/2/08 DATE
APPROVED ____ DISTRICT ENGINEER 01/02/08 DATE

CADD FILE NAME : ...89912cr1745.sht I.D.S. SHEET 5 OF 15

Plotted by bgarrick
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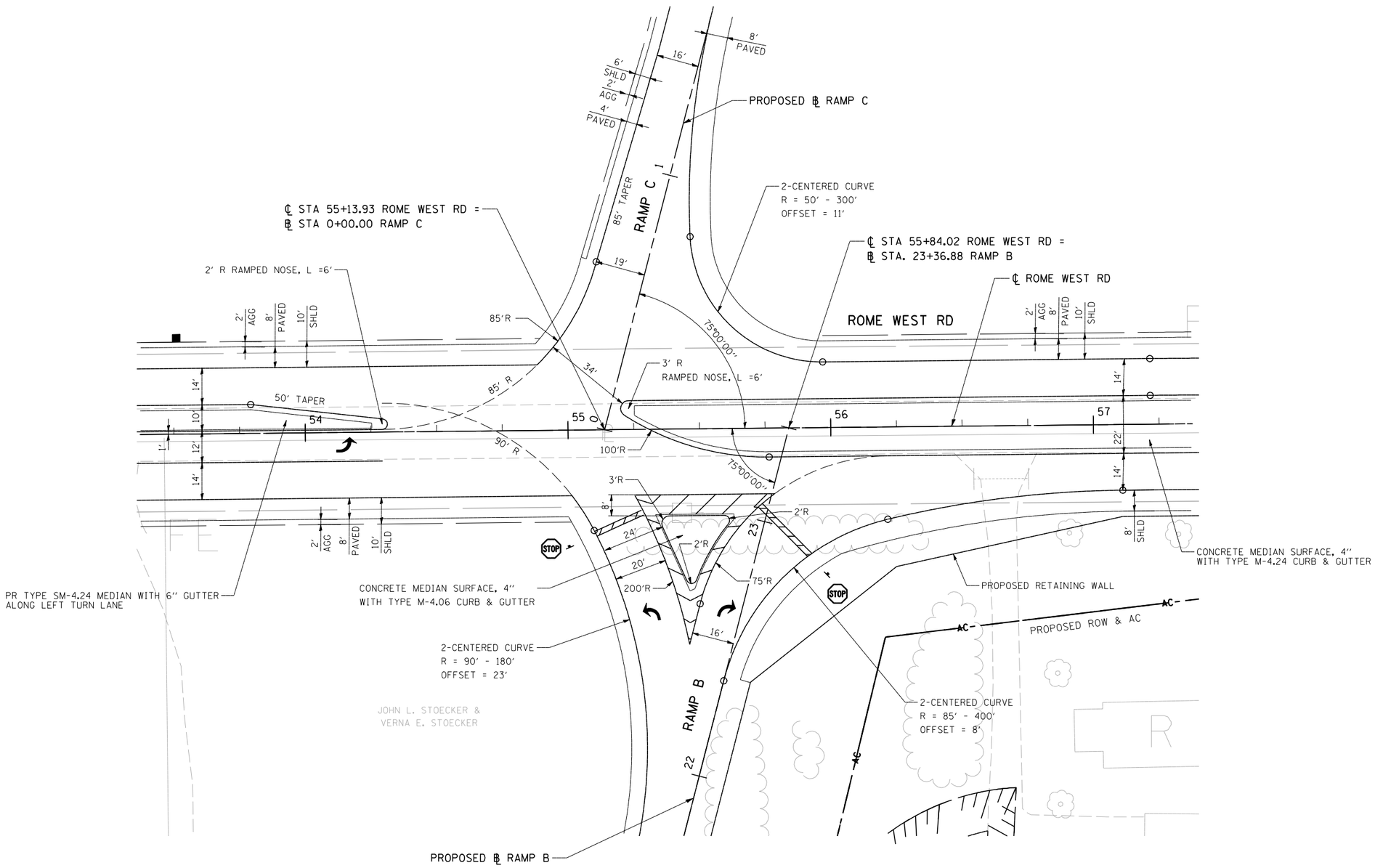
8/28/2007



ISLAND DETAIL

ROME WEST ROAD AT RAMPS B & C

20 0 20
GRAPHIC SCALE

INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29)
CH ROUTE 24 WITH (ROME WEST RD)

SEC. NO. _____

SCALE 1"=20' COUNTY PEORIA

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 6 OF 15

BDE-9808

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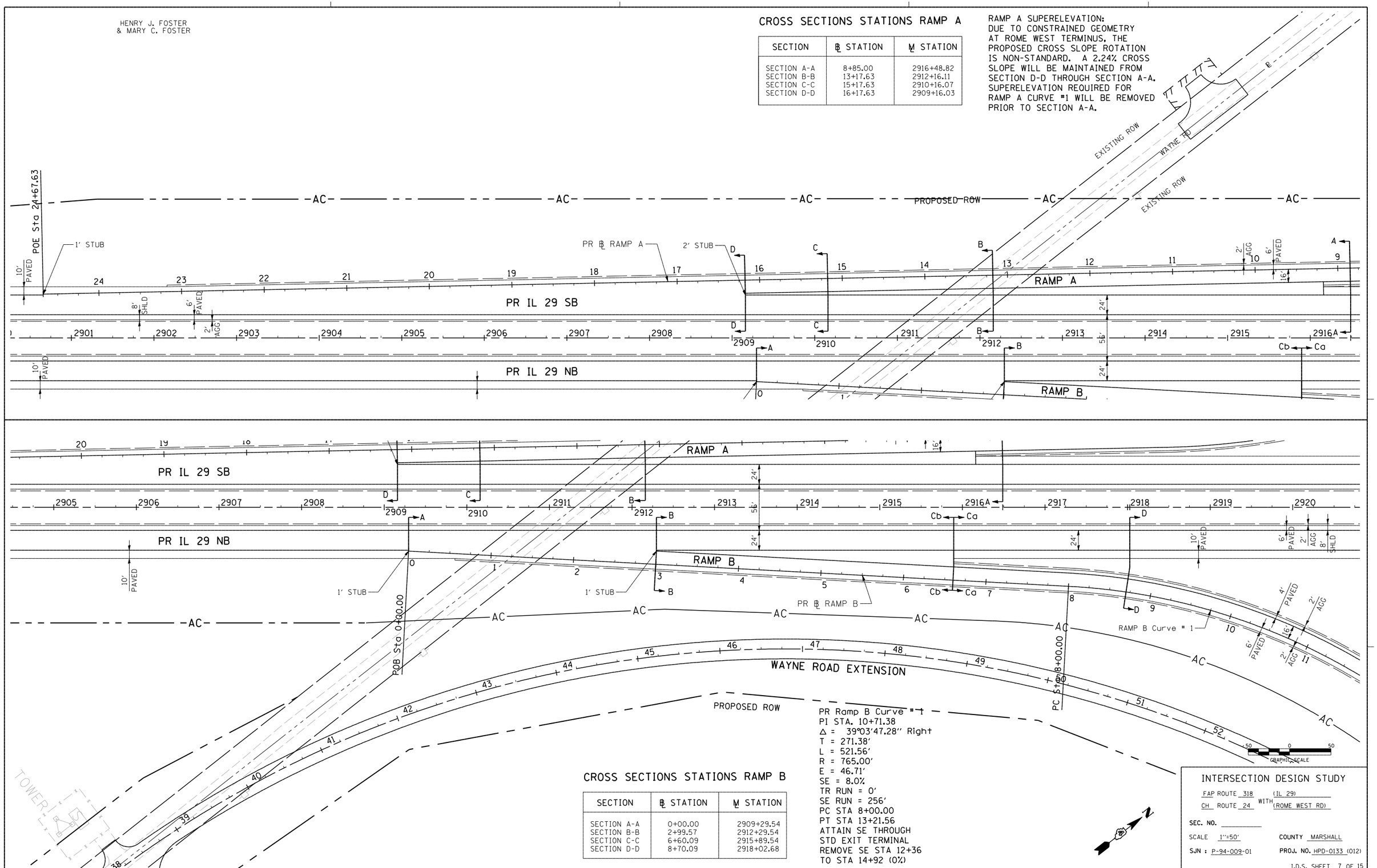
21-APR-2009

HENRY J. FOSTER
& MARY C. FOSTER

CROSS SECTIONS STATIONS RAMP A

SECTION	℄ STATION	M STATION
SECTION A-A	8+85.00	2916+48.82
SECTION B-B	13+17.63	2912+16.11
SECTION C-C	15+17.63	2910+16.07
SECTION D-D	16+17.63	2909+16.03

RAMP A SUPERELEVATION:
DUE TO CONSTRAINED GEOMETRY AT ROME WEST TERMINUS, THE PROPOSED CROSS SLOPE ROTATION IS NON-STANDARD. A 2.24% CROSS SLOPE WILL BE MAINTAINED FROM SECTION D-D THROUGH SECTION A-A. SUPERELEVATION REQUIRED FOR RAMP A CURVE #1 WILL BE REMOVED PRIOR TO SECTION A-A.



PR Ramp B Curve # 1
PI STA. 10+71.38
Δ = 39°03'47.28" Right
T = 271.38'
L = 521.56'
R = 765.00'
E = 46.71'
SE = 8.0%
TR RUN = 0'
SE RUN = 256'
PC STA 8+00.00
PT STA 13+21.56
ATTAIN SE THROUGH
STD EXIT TERMINAL
REMOVE SE STA 12+36
TO STA 14+92 (0%)

CROSS SECTIONS STATIONS RAMP B

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	2909+29.54
SECTION B-B	2+99.57	2912+29.54
SECTION C-C	6+60.09	2915+89.54
SECTION D-D	8+70.09	2918+02.68

INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29)
WITH
CH ROUTE 24 (ROME WEST RD)

SEC. NO. _____

SCALE 1"=50' COUNTY MARSHALL

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 7 OF 15

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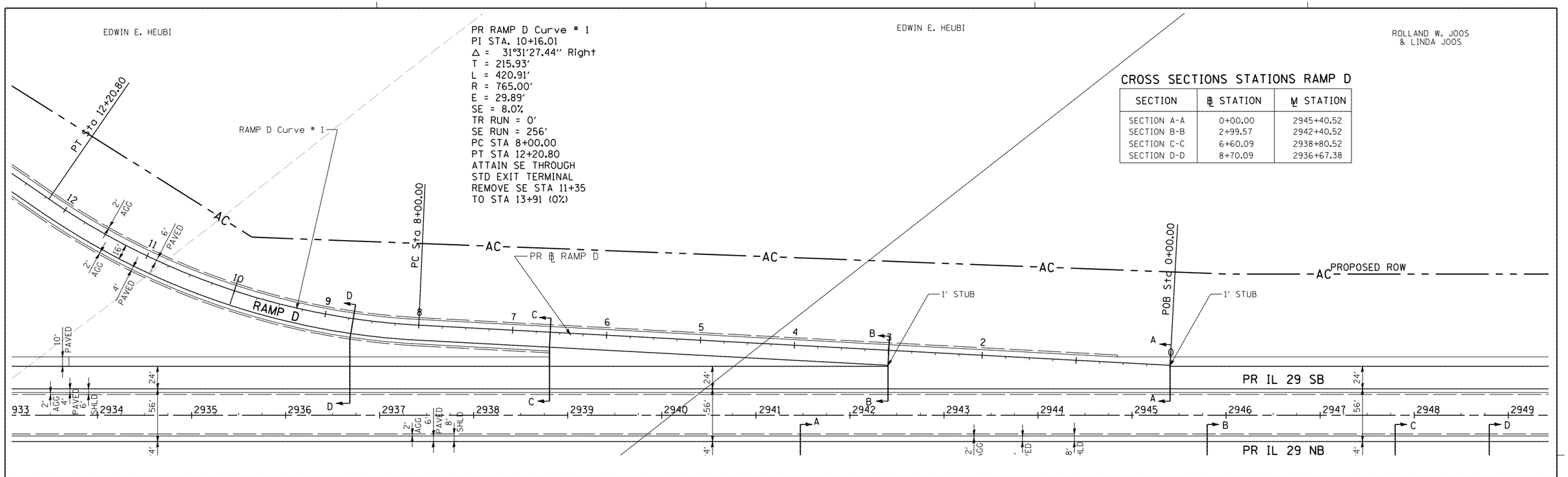
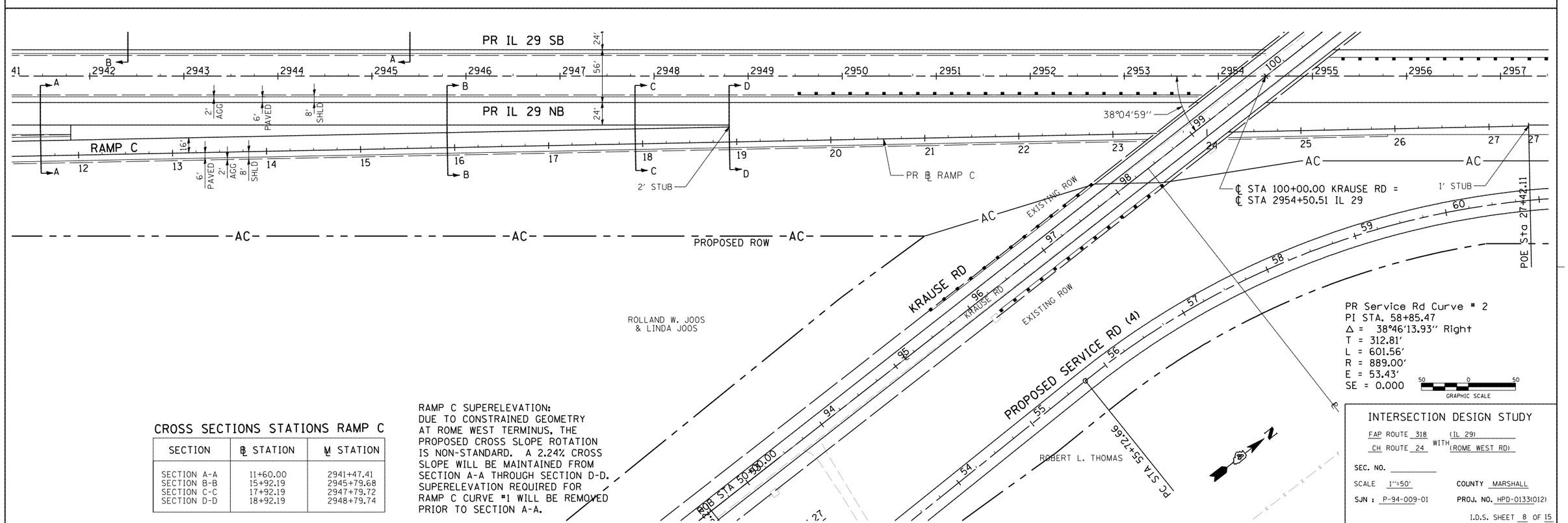


CROSS SECTIONS STATIONS RAMP D

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	2945+40.52
SECTION B-B	2+99.57	2942+40.52
SECTION C-C	6+60.09	2938+80.52
SECTION D-D	8+70.09	2936+67.38



PR Service Rd Curve # 2
PI STA. 58+85.47
Δ = 38°46'13.93" Right
T = 312.81'
L = 601.56'
R = 889.00'
E = 53.43'
SE = 0.000

GRAPHIC SCALE 50 0 50

CROSS SECTIONS STATIONS RAMP C

SECTION	℄ STATION	M STATION
SECTION A-A	11+60.00	2941+47.41
SECTION B-B	15+92.19	2945+79.68
SECTION C-C	17+92.19	2947+79.72
SECTION D-D	18+92.19	2948+79.74

RAMP C SUPERELEVATION:
DUE TO CONSTRAINED GEOMETRY AT ROME WEST TERMINUS, THE PROPOSED CROSS SLOPE ROTATION IS NON-STANDARD. A 2.24% CROSS SLOPE WILL BE MAINTAINED FROM SECTION A-A THROUGH SECTION D-D. SUPERELEVATION REQUIRED FOR RAMP C CURVE #1 WILL BE REMOVED PRIOR TO SECTION A-A.

INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29)
CH ROUTE 24 WITH (ROME WEST RD)

SEC. NO. _____

SCALE 1"=50' COUNTY MARSHALL

SJN : P-94-009-01 PROJ. NO. HPD-0133(012)

I.D.S. SHEET 8 OF 15

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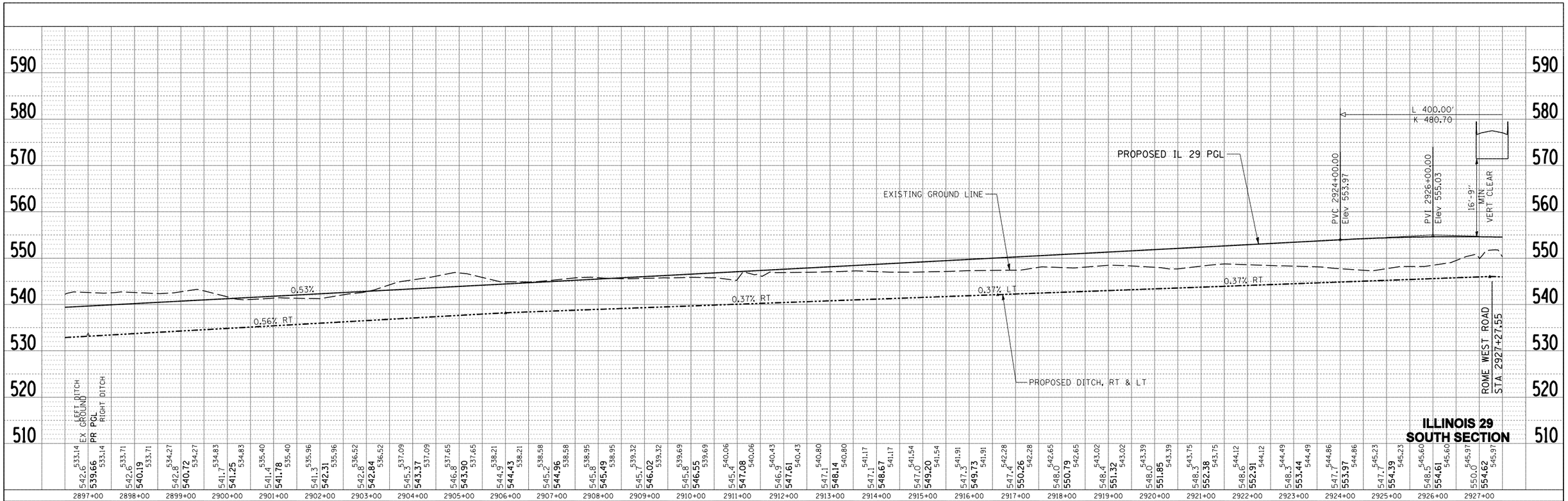

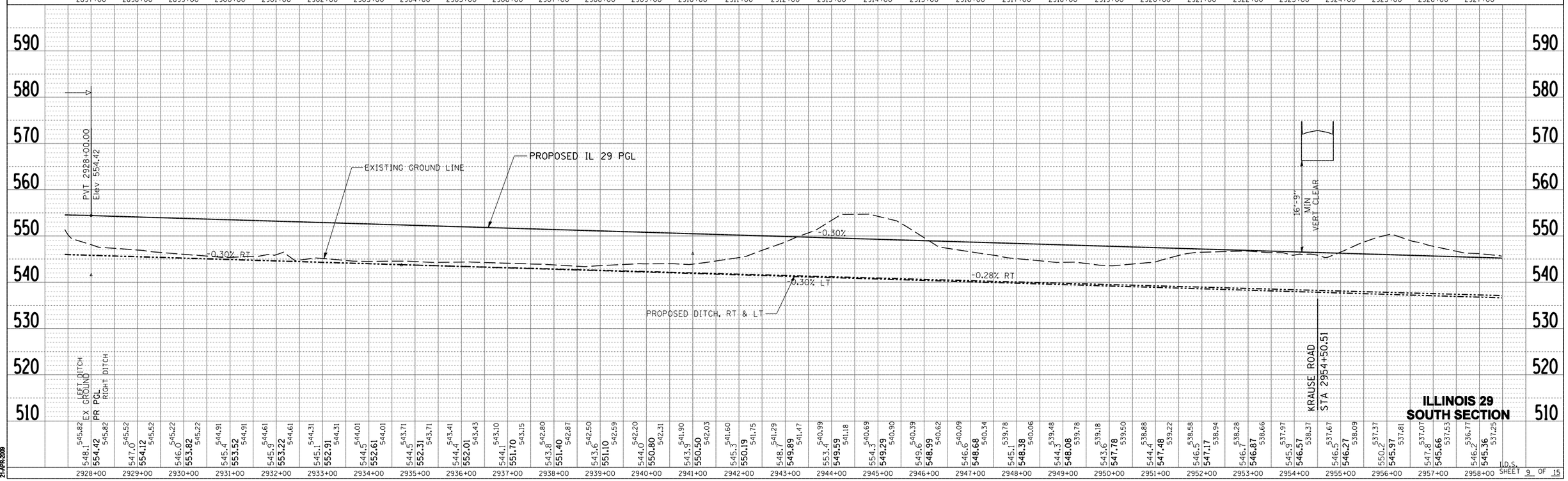

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GRADES CHECKED		
B.M. NOTED		
STRUCTURE NOTATNS CH'KD		
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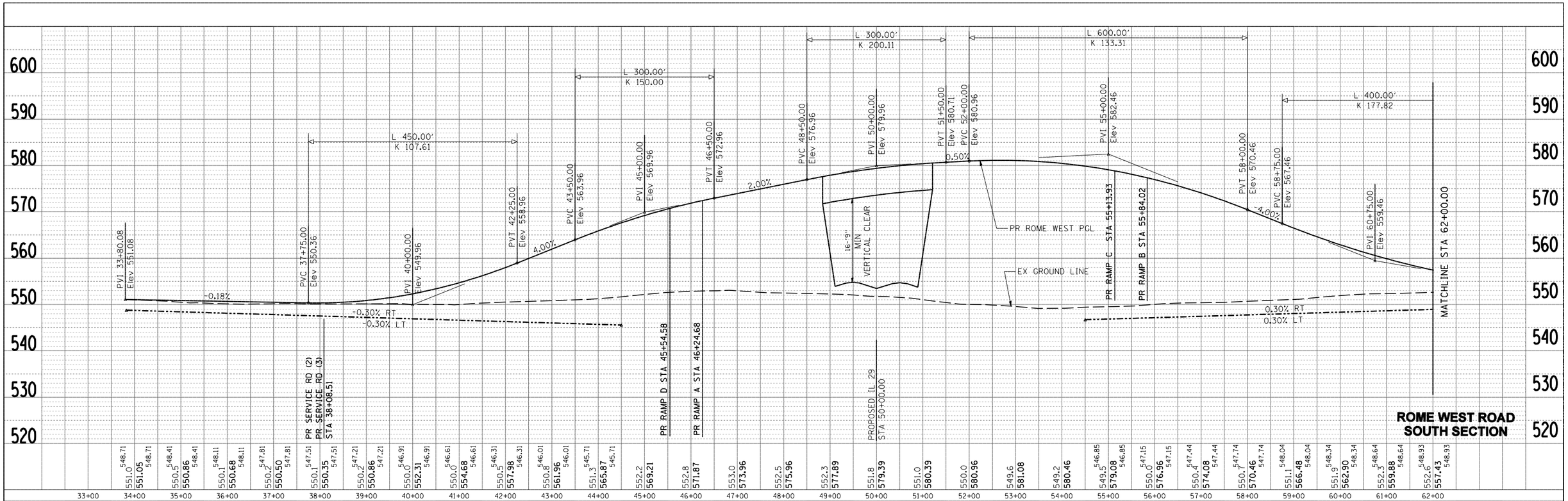
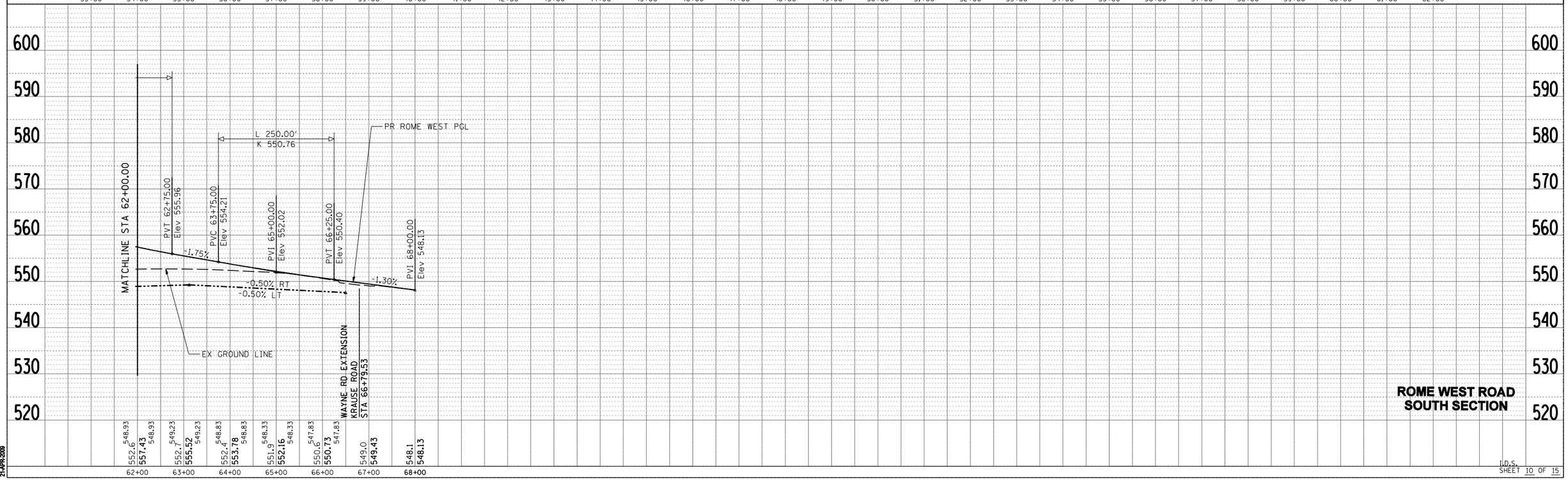
SHEET 9 OF 15





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B.M. NOTED
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21-APR-2009

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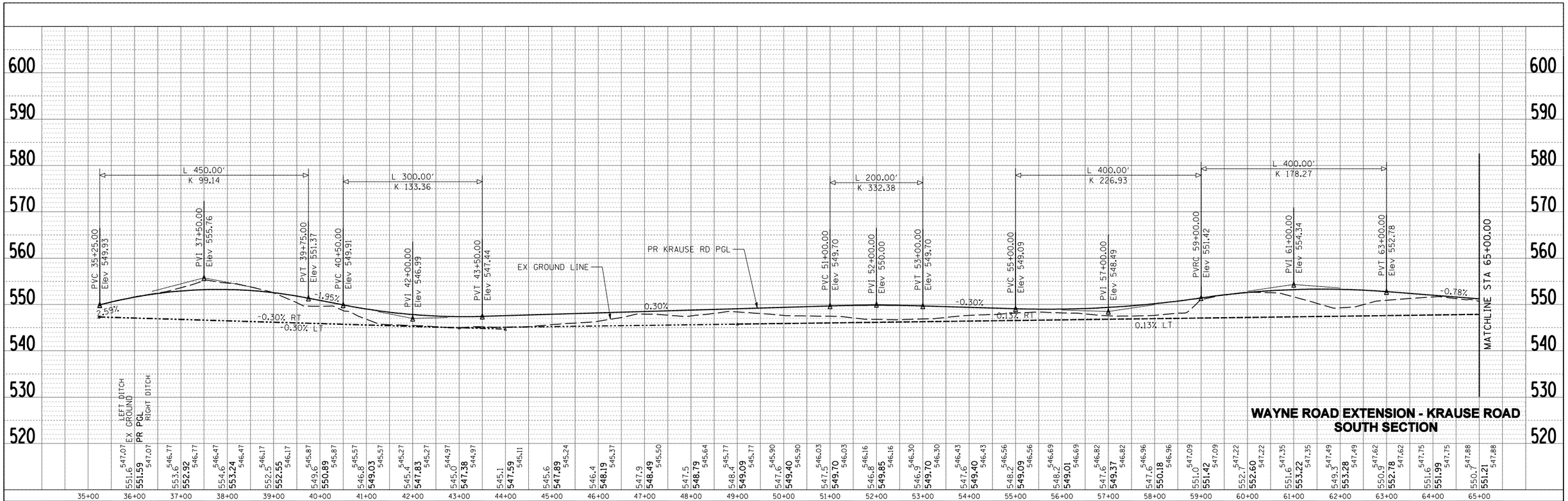

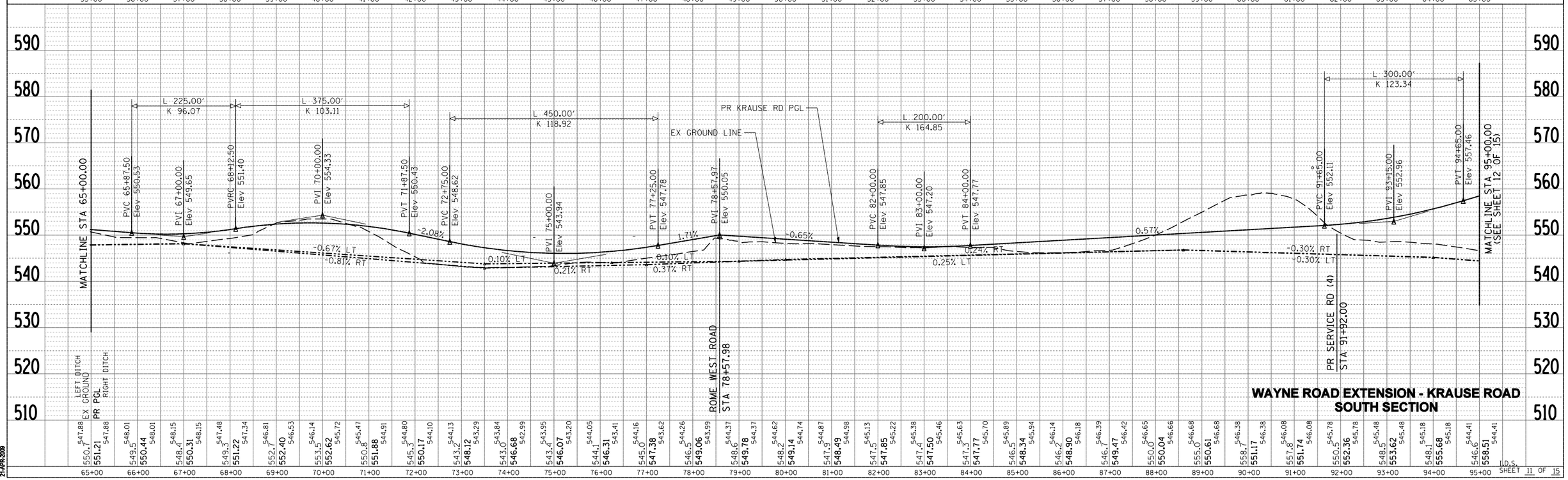

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GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CK'KD
NOTE BOOK
NO.
BY
DATE

gregsley
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21-APR-2009

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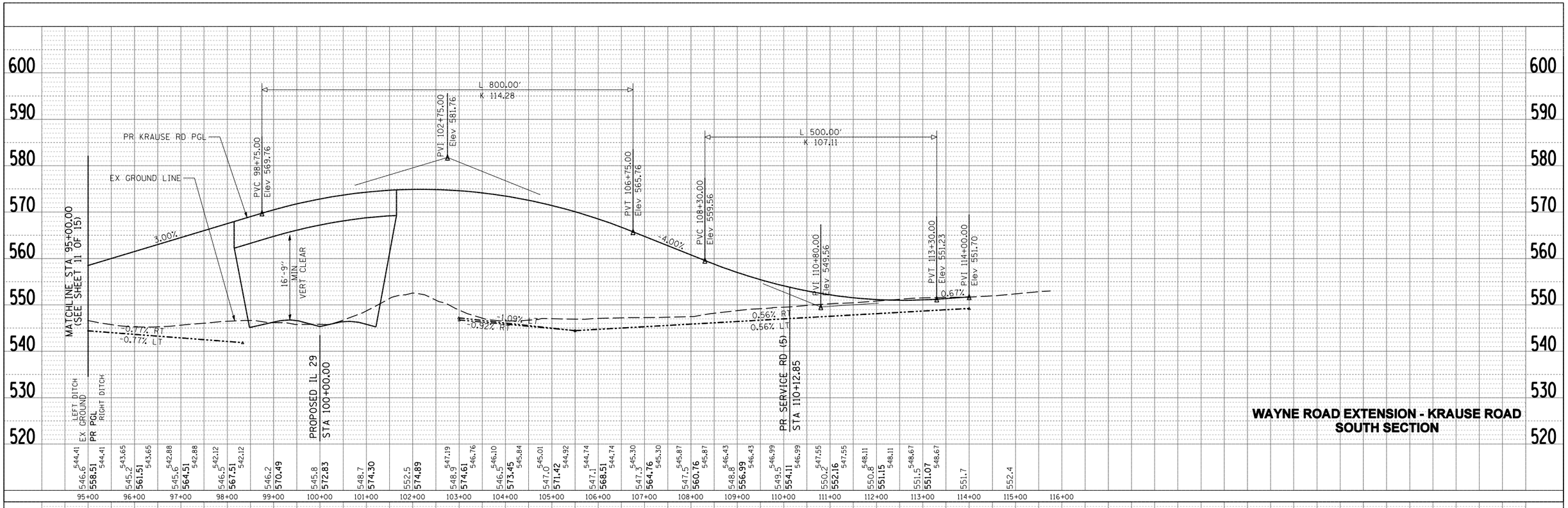
SHEET 11 OF 15



PLAN

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B.M. NOTED	
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NOTE BOOK
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BY	DATE

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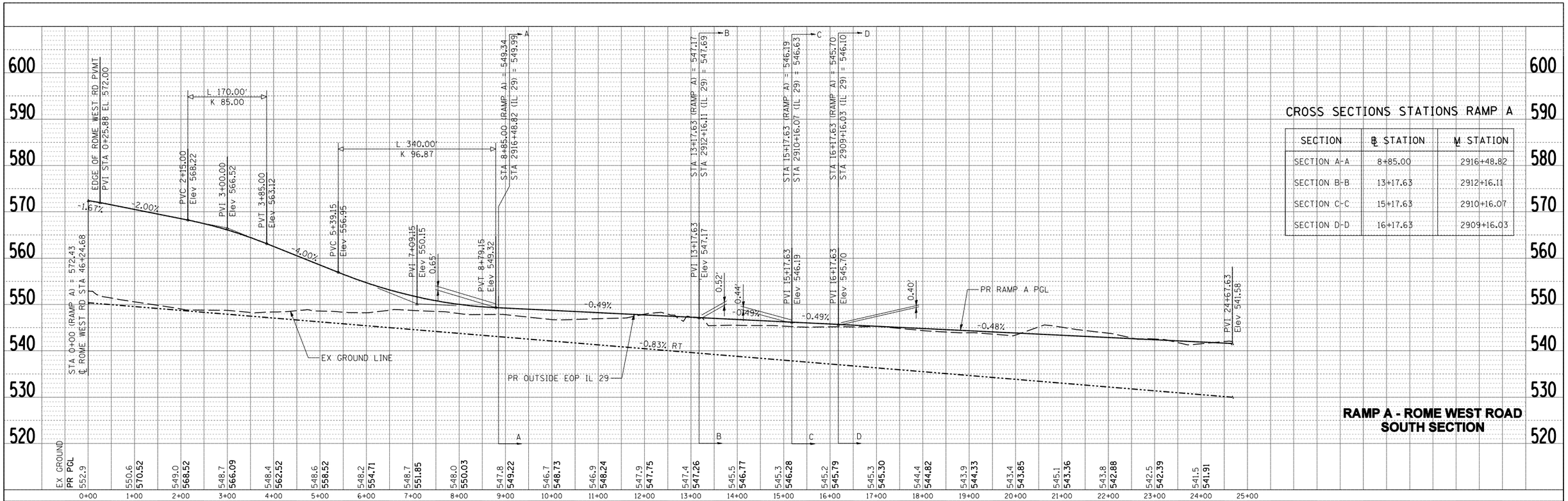
21-APR-2009

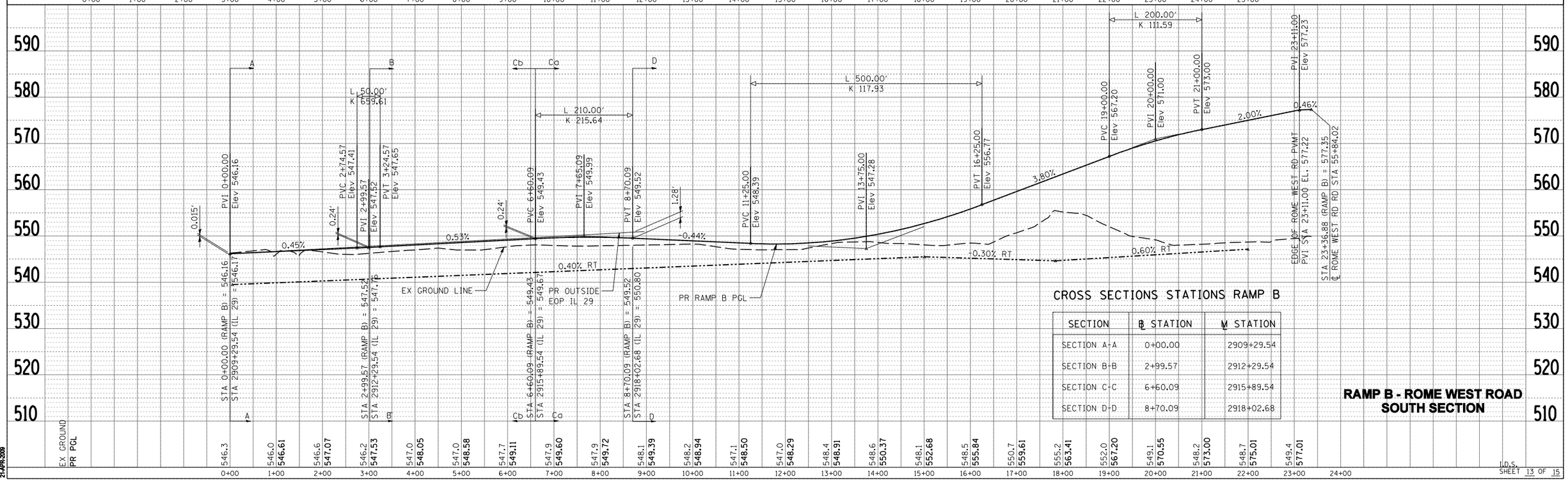
I.D.S.
SHEET 12 OF 15



CROSS SECTIONS STATIONS RAMP A

SECTION	℄ STATION	M STATION
SECTION A-A	8+85.00	2916+48.82
SECTION B-B	13+17.63	2912+16.11
SECTION C-C	15+17.63	2910+16.07
SECTION D-D	16+17.63	2909+16.03

RAMP A - ROME WEST ROAD SOUTH SECTION



CROSS SECTIONS STATIONS RAMP B

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	2909+29.54
SECTION B-B	2+99.57	2912+29.54
SECTION C-C	6+60.09	2915+89.54
SECTION D-D	8+70.09	2918+02.68

RAMP B - ROME WEST ROAD SOUTH SECTION

PLAN — SURVEYED / PLOTTED / ALIGNMENT CHECKED / RT. OF WAY CHECKED / CADD FILE NAME — NOTE BOOK NO. — BY — DATE

PROFILE — SURVEYED / PLOTTED / GRADES CHECKED / B.M. NOTED / STRUCTURE NOTATNS CK'KD — NOTE BOOK NO. — BY — DATE

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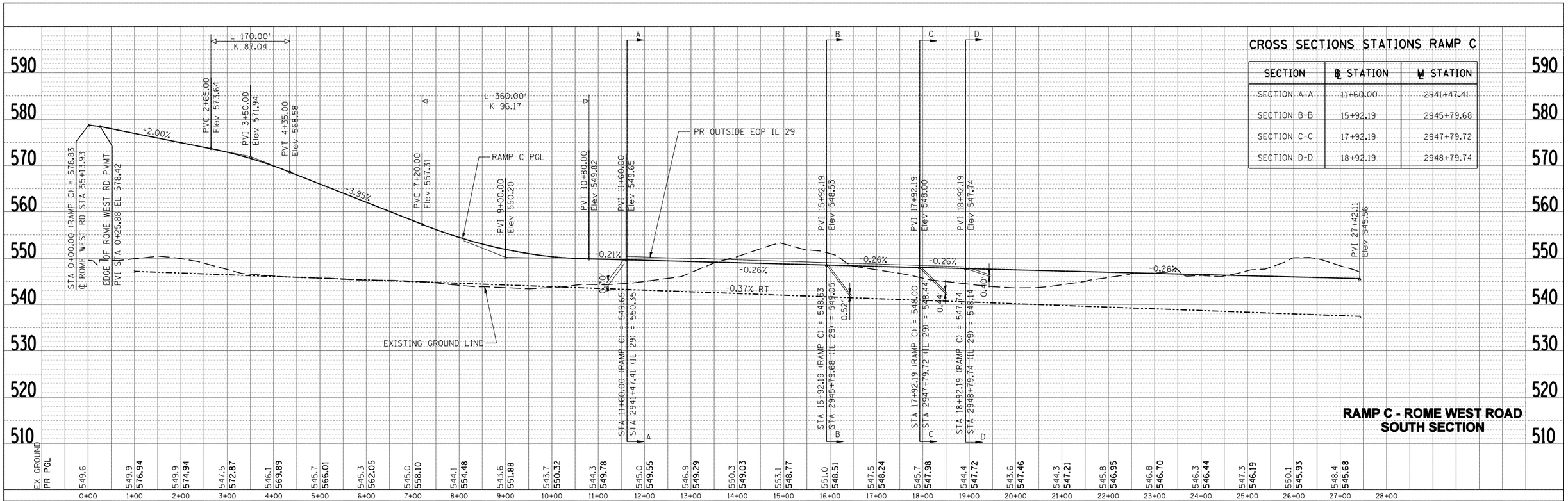
21-APR-2009

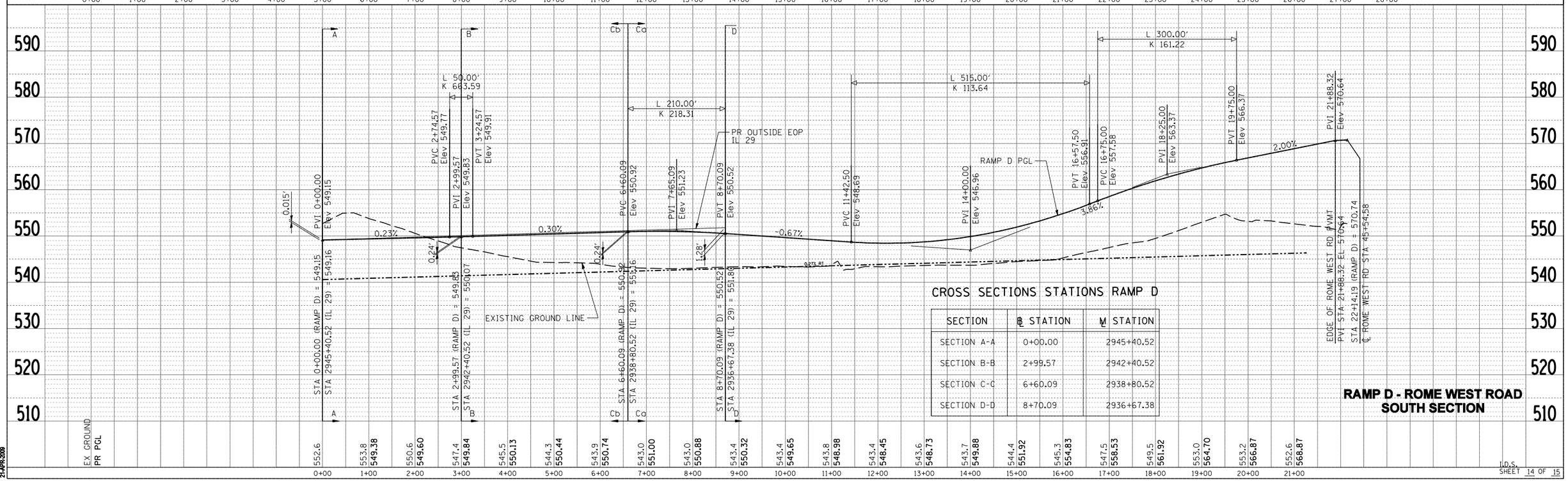
I.D.S.
SHEET 13 OF 15



CROSS SECTIONS STATIONS RAMP C

SECTION	℄ STATION	M STATION
SECTION A-A	11+60.00	2941+47.41
SECTION B-B	15+92.19	2945+79.68
SECTION C-C	17+92.19	2947+79.72
SECTION D-D	18+92.19	2948+79.74

RAMP C - ROME WEST ROAD SOUTH SECTION



CROSS SECTIONS STATIONS RAMP D

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	2945+40.52
SECTION B-B	2+99.57	2942+40.52
SECTION C-C	6+60.09	2938+80.52
SECTION D-D	8+70.09	2936+67.38

RAMP D - ROME WEST ROAD SOUTH SECTION

PLAN	BY	DATE
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PLOTTED		
ALIGNMENT CHECKED		
RT. OF WAY CHECKED		
NOTE BOOK		
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D400 TILE NAME		

PROFILE	BY	DATE
SURVEYED		
PLOTTED		
GRADES CHECKED		
B.M. NOTED		
STRUCTURE NOTATNS CK'KD		
NOTE BOOK		
NO.		

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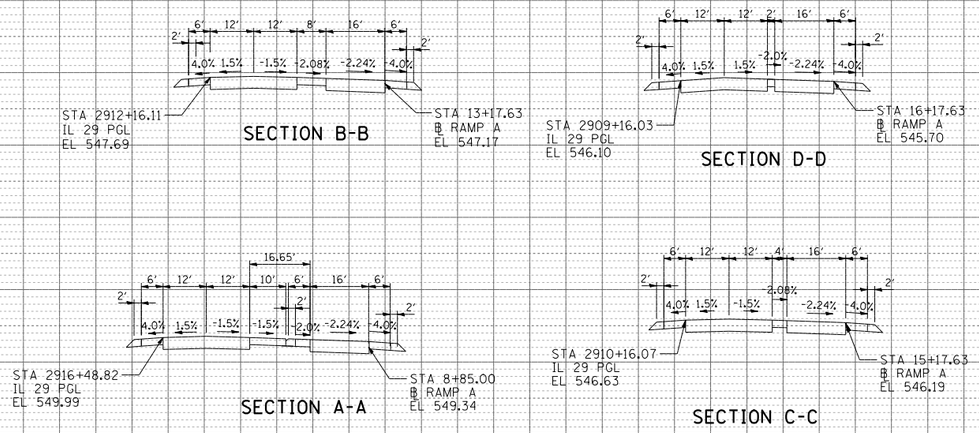
21-APR-2009

I.D.S.
SHEET 14 OF 15

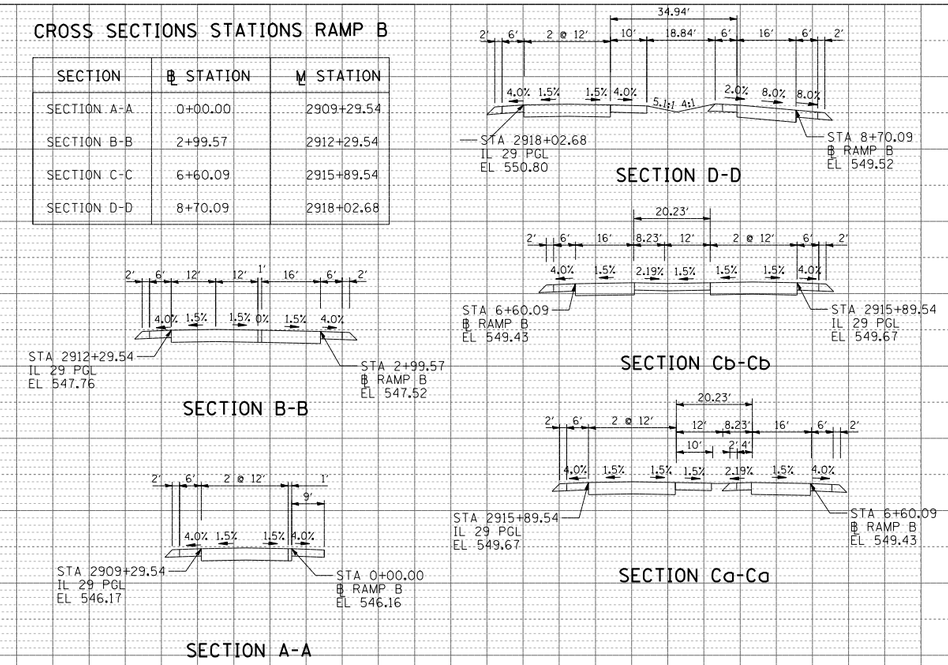
CROSS SECTIONS STATIONS RAMP A

SECTION	℄ STATION	M STATION
SECTION A-A	8+85.00	2916+48.82
SECTION B-B	13+17.63	2912+16.11
SECTION C-C	15+17.63	2910+16.07
SECTION D-D	16+17.63	2909+16.03



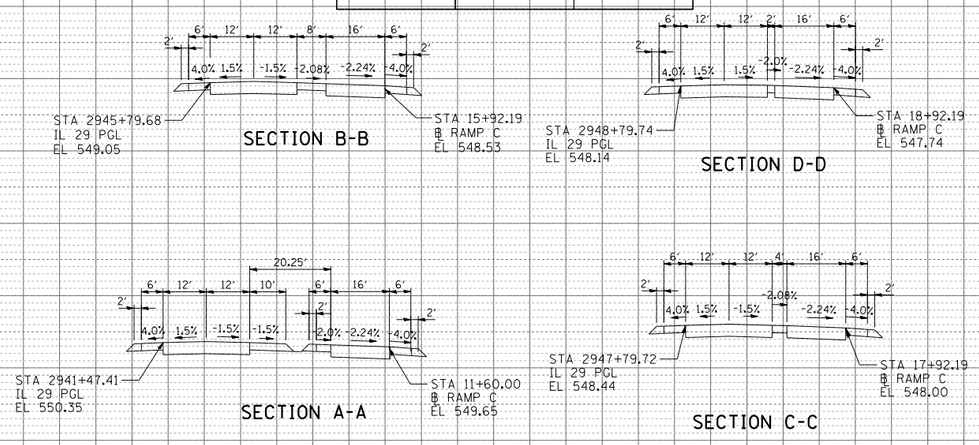
CROSS SECTIONS STATIONS RAMP B

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	2909+29.54
SECTION B-B	2+99.57	2912+29.54
SECTION C-C	6+60.09	2915+89.54
SECTION D-D	8+70.09	2918+02.68



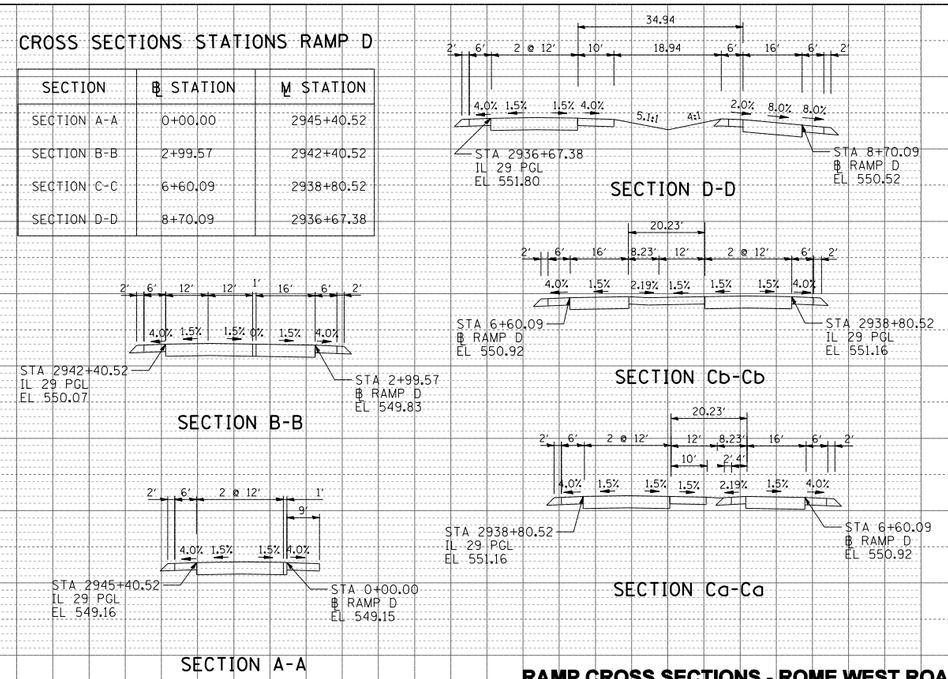
CROSS SECTIONS STATIONS RAMP C

SECTION	℄ STATION	M STATION
SECTION A-A	11+60.00	2941+47.41
SECTION B-B	15+92.19	2945+79.68
SECTION C-C	17+92.19	2947+79.72
SECTION D-D	18+92.19	2948+79.74



CROSS SECTIONS STATIONS RAMP D

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	2945+40.52
SECTION B-B	2+99.57	2942+40.52
SECTION C-C	6+60.09	2938+80.52
SECTION D-D	8+70.09	2936+67.38



RAMP CROSS SECTIONS - ROME WEST ROAD
SOUTH SECTION

I.D.S.
SHEET 15 OF 15

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
BOND TILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

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21-APR-2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERSECTION DESIGN STUDY
EXISTING IL 29 /KNOX STREET INTERSECTION

PREPARED BY : CH2MHILL

JANUARY 2009

Illinois Department of Transportation
CH2MHILL

June 2010
Catalog No. 032469-00P

mfox
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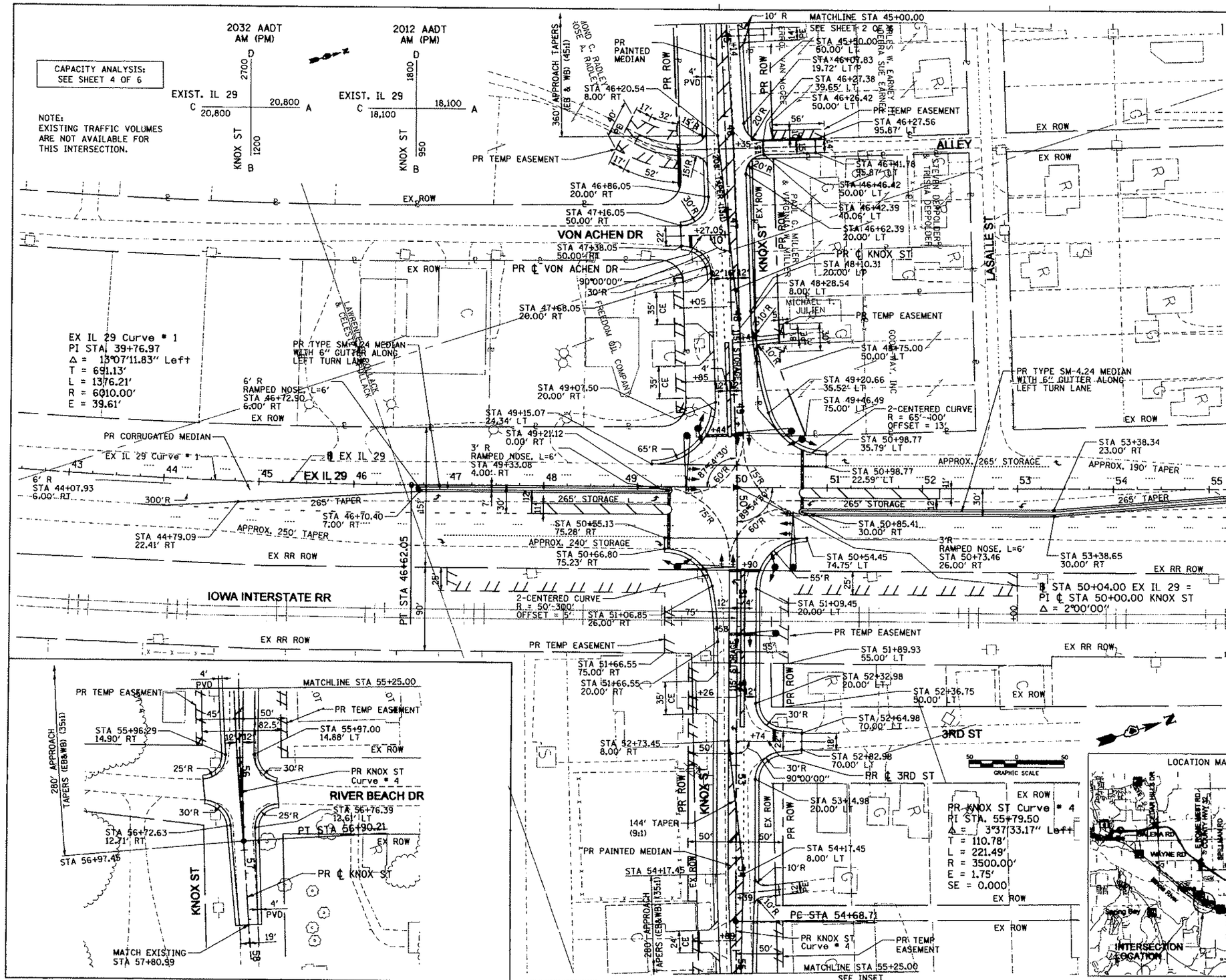
17-MAR-2009



SHEET NUMBER

ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION KNOX ST - LOCAL ROAD
   EX IL 29 - PRINCIPAL ARTERIAL
   SRA: YES____ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN KNOX ST 2700 (2032)
   DESIGN EX IL 29 20,800 (2032)
3. EX IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE 2-WAY STOP CONTROL IN CONSTRUCTION YEAR. TRAFFIC SIGNALS REQUIRED IN DESIGN YEAR (WARRANT 1 IS MET). TRAFFIC SIGNALS ARE SHOWN ON PLAN BECAUSE WARRANTS WILL BE MET BY THE END OF THE DESIGN LIFE.
6. DESIGN CRITERIA:
7. DESIGN VEHICLE: WB-65 TRUCK ROUTE DESIGNATION CLASS II
8. DESIGN SPEED KNOX ST WEST - 45 MPH POSTED SPEED KNOX ST WEST - 40 MPH
   KNOX ST EAST - 30 MPH KNOX ST EAST - 30 MPH
   EX IL 29 - 60 MPH EX IL 29 - 55 MPH

GENERAL NOTES

1. PROFILES *ARE* PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT EXCEPT WHERE NOTED OTHERWISE
3. INTERSECTION *IS NOT* A HIGH ACCIDENT LOCATION
4. INTERSECTION *IS NOT* PART OF INTERCONNECTED SYSTEM
5. INTERSECTION SIGHT DISTANCE COMPLIES WITH CHAPTER 36 OF THE IDOT BDE MANUAL.
6. TURNING MOVEMENTS CHECKED USING AUTOTURN SOFTWARE.
7. EXPECTED PEDESTRIAN/BICYCLE USAGE NONE
8. PAVEMENT MARKINGS TO BE INSTALLED PER THE MUTCD, AND IDOT POLICIES.
9. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY BUREAU OF OPERATIONS POLICIES.
10. PROPOSED ROW IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF THE FINAL PLANS.
11. ALL ENTRANCES AS SHOWN *ARE* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
12. DECISION OF WHETHER TO PROVIDE WARNING LIGHTS AND/OR GATES AT THE RAILROAD CROSSING WILL BE MADE DURING PHASE II, WITH INVOLVEMENT OF THE ICC.
13. SCOPE OF WORK: RECONSTRUCTION
14. DESIGN EXCEPTIONS: SEE BELOW

14. DESIGN EXCEPTIONS: CONTINUED FROM ABOVE

A. SOME OF THE EXISTING IL 29 TURN LANE TAPER AND STORAGE LENGTHS AT KNOX ST. DO NOT MEET THE IDOT POLICY LENGTH OF 265' FOR EACH (BDE FIG. 36-31h
NB RIGHT TURN LANE -- EXISTING TAPER (250') AND STORAGE (240') LENGTHS ARE ALLOWED TO REMAIN BECAUSE ADDITIONAL CONSTRUCTION IS NOT COST-EFFECTIVE.
SB RIGHT TURN LANE -- EXISTING TAPER (190') IS ALLOWED TO REMAIN BECAUSE ADDITIONAL CONSTRUCTION IS NOT COST-EFFECTIVE.

B. NB PROVIDED STORAGE LENGTH (180') AT MARQUETTE ST. DOES NOT MEET THE IDOT POLICY LENGTH OF 265' EACH DUE THE PROXIMITY OF THE KNOX ST. INTERSECTION.

INTERSECTION DESIGN STUDY

P-37 143-329

ROUTE (KNOX ST) WITH
FAP ROUTE 318 (EXISTING IL 29)

SEC. NO. ____ PROJ. NO. HPD-0133 (012)
SCALE 1"=50' COUNTY PEORIA
SJN : P-94-009-01 REV. NO. ____

DESIGNED BY CHRISTHILL DATE 1/09
SATISFACTORY DISTRICT GEOMETRICS ENGINEER 2-2-09 DATE
SATISFACTORY DISTRICT PROGRAM DEVELOPMENT ENGINEER 2-3-09 DATE
SATISFACTORY DISTRICT OPERATIONS ENGINEER 2/4/09 DATE
APPROVED DISTRICT ENGINEER 02/06/09 DATE

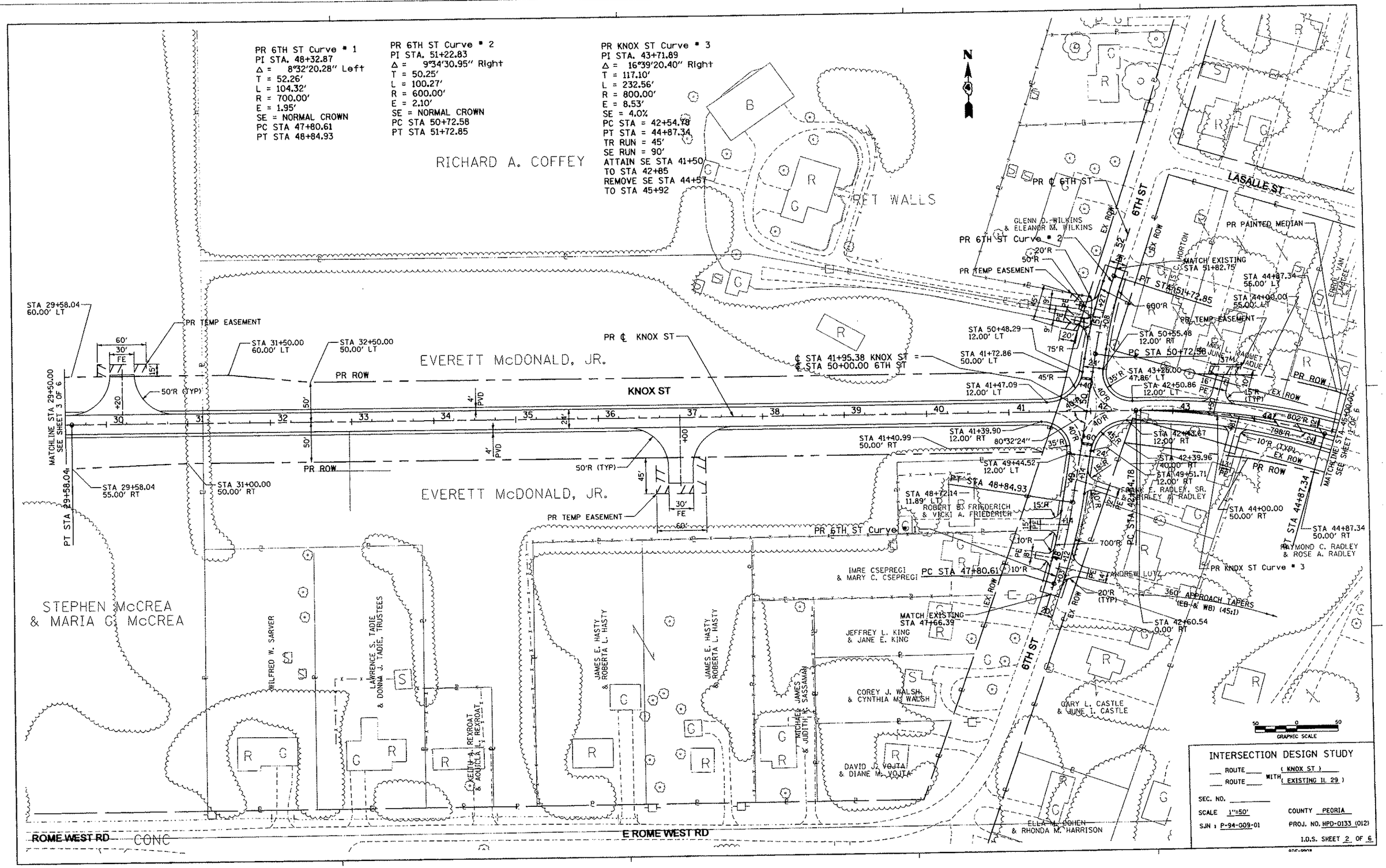
CADD FILE NAME : \$FILEANAME\$REV\$

I.D.S. SHEET 1 OF 6

PR 6TH ST Curve * 1
PI STA. 48+32.87
Δ = 8°32'20.28" Left
T = 52.26'
L = 104.32'
R = 700.00'
E = 1.95'
SE = NORMAL CROWN
PC STA 47+80.61
PT STA 48+84.93

PR 6TH ST Curve * 2
PI STA. 51+22.83
Δ = 9°34'30.95" Right
T = 50.25'
L = 100.27'
R = 600.00'
E = 2.10'
SE = NORMAL CROWN
PC STA 50+72.58
PT STA 51+72.85

PR KNOX ST Curve * 3
PI STA. 43+71.89
Δ = 16°39'20.40" Right
T = 117.10'
L = 232.56'
R = 800.00'
E = 8.53'
SE = 4.0%
PC STA = 42+54.78
PT STA = 44+87.34
TR RUN = 45'
SE RUN = 90'
ATTAIN SE STA 41+50
TO STA 42+85
REMOVE SE STA 44+57
TO STA 45+92



INTERSECTION DESIGN STUDY

___ ROUTE ___ (KNOX ST)
___ ROUTE ___ WITH (EXISTING IL 29)

SEC. NO. _____

SCALE 1"=50'

COUNTY PEORIA

SJN : P-94-009-01

PROJ. NO. HPD-0133 (012)

I.O.S. SHEET 2 OF 6

PR KNOX ST Curve # 1
PI STA. 18+25.54
Δ = 36°39'17.58" Left
T = 253.41'
L = 489.41'
R = 765.00'
E = 40.88'
SE = 4.0%
PC STA = 15+72.44
PT STA = 20+61.85
TR RUN = 45'
SE RUN = 90'
ATTAIN SE STA 14+67
TO STA 16+02
REMOVE SE STA 20+32
TO STA 21+67

PR KNOX ST Curve # 2
PI STA. 26+78.93
Δ = 36°51'47.62" Right
T = 299.94'
L = 579.05'
R = 900.00'
E = 48.66'
SE = 3.9%
PC STA = 23+78.99
PT STA = 29+58.04
TR RUN = 45'
SE RUN = 87'
ATTAIN SE STA 22+76
TO STA 24+08
REMOVE SE STA 29+29
TO STA 30+61

MATCH EXISTING STA 12+80.40
PR TEMP EASEMENT
WILLIAM B. PERRY & SALLY PERRY
SILOS
MARY M. TOBIN & JAMES J. TOBIN, TRUSTEES
STEPHEN McCREA & MARIA G. McCREA
STA 15+72.44 55.00' LT
PC STA 15+72.44
PR KNOX ST Curve # 1
STA 19+04.34 55.00' LT
PT STA 20+61.85
℄ STA 22+01.49 KNOX ST = ℄ STA 50+00.00 ROME WEST RD
STA 22+00.00 70.00' LT
PR ℄ KNOX ST
STA 23+78.99 60.00' LT
PR KNOX ST Curve # 2
PR ROW
KNOX ST
STA 16+00.00 50.53' RT
STA 17+50.00 55.27' RT
PC STA 45+73.93
TERRENCE S. CHISMARK
RICHARD A. GRAHAM & MARIAN GRAHAM
PR ℄ N 7TH ST
THOMAS R. HANEY & GRACE I. HANEY
ERIC W. RANSOM & SHANNON S. RANSOM
N 7TH ST
PT STA 46+37.55
PC STA 47+40.80
LINDROD
WILLIAM E. POWERS & GLENDA G. POWERS
PR ℄ E LAWRENCE AVE
ROBERT D. LAVY & SHIRLEY A. LAVY
PT STA 49+49.15
STA 49+58.06 10.95' LT
DONALD E. DAILEY
℄ STA 48+72.45 LAWRENCE AVE CONNECTOR = ℄ STA 50+00.00 LAWRENCE AVE
E RICHLAND AVE
GREGORY A. DIVELEY & JOYCE L. DIVELEY
WILLIAM N. BAER & BARBARA K. BAER
FRANK FRANK
STA 50+42.97 12.00' LT
STA 49+21.18 12.00' RT
STA 49+59.99 12.00' RT
E LAWRENCE AVE
STA 21+53.14 12.00' RT
STA 49+51.66 12.00' LT
STA 49+10.30 12.00' LT
STA 49+59.99 12.00' LT
PT STA 49+33.01
PC STA 49+02.90
STA 22+57.42 12.00' RT
STA 22+55.63 55.00' RT
STA 49+44.07 12.00' RT
PT STA 48+73.14
PC STA 23+78.99
STA 23+78.99 55.00' RT
STA 48+00.90 12.00' LT
℄ STA 47+62.84 ROME WEST RD = ℄ STA 50+00.00 LAWRENCE AVE CONNECTOR
STA 47+24.76 12.00' LT
PR ℄ ROME WEST RD
STA 54+00.00 50.00' LT
PC STA 45+30.86
STA 55+11.88 32.61' LT
DAVID B. BARNES & CAROL S. BARNES
ROME WEST RD
MATCHLINE STA 29+50.00 SEE SHEET 2 OF 6
GRAPHIC SCALE

INTERSECTION DESIGN STUDY
___ ROUTE ___ (KNOX ST) WITH
___ ROUTE ___ (EXISTING IL 29)
SEC. NO. ___
SCALE 1"=50'
COUNTY PEORIA
SJN : P-94-009-01
PROJ. NO. HPD-0133 (012)
I.D.S. SHEET 3 OF 6

CAPACITY DESIGN STUDY (DESIGN YEAR) 2032

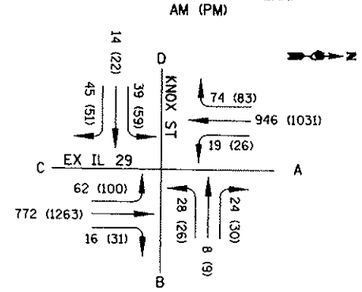
3 PHASE
80 SEC. CYCLE
SIGNAL TYPE ACTUATED

AREA OTHER
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS+, 5.21

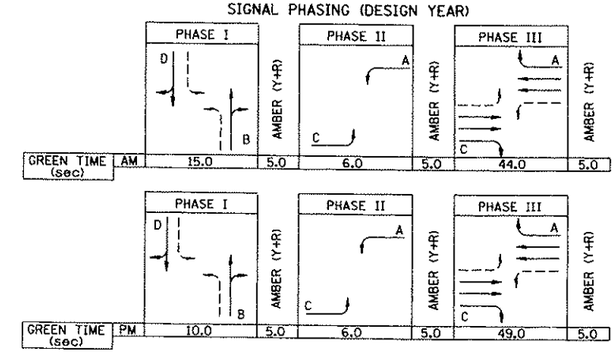
PEAK HOUR FACTOR 0.90
A.M. 12.5 SEC. INTERSECTION LEVEL A.M. B
P.M. 11.5 SEC. OF SERVICE P.M. B

APPROACH		SOUTHBOUND (A)			WESTBOUND (B)			NORTHBOUND (C)			EASTBOUND (D)		
BUS STOP CONDITION		0	0	0	0	0		0	0	0	0	0	
PARKING MANEUVER/HR.		0	0	0	0	0		0	0	0	0	0	
PEDESTRIANS		0	0	0	0	0		0	0	0	0	0	
ARRIVAL TYPE		3	3	3	3	3		3	3	3	3	3	
LANE UTILIZATION FACTOR		1.0	0.952	1.0	1.0	1.0		1.0	0.952	1.0	1.0	1.0	
BASE SATURATION FLOW		1900	1900	1900	1900	1900		1900	1900	1900	1900	1900	
D - DISTANCE		265'	N/A	265'	115'	N/A		265'	N/A	240'	115'	N/A	
LANE GROUP		L	T	R	L	TR		L	T	R	L	TR	
LANE WIDTHS		12'	2@12'	12'	12'	12'		12'	2@12'	12'	12'	12'	
GREEN TIME (SECONDS)	A.M.	55	44	44	15	15		55	44	44	15	15	
	P.M.	60	49	49	10	10		60	49	49	10	10	
G/C RATIO	A.M.	0.69	0.55	0.55	0.19	0.19		0.69	0.55	0.55	0.19	0.19	
	P.M.	0.75	0.61	0.61	0.13	0.13		0.75	0.61	0.61	0.13	0.13	
LANE GROUP DELAY (SECONDS)	A.M.	4.9	12.1	8.6	27.3	27.2		6.2	11.0	8.2	27.6	27.9	
	P.M.	5.9	9.4	6.4	31.9	32.0		5.2	11.1	6.2	33.7	33.4	
V/C RATIO	A.M.	0.05	0.56	0.10	0.13	0.12		0.21	0.46	0.02	0.17	0.21	
	P.M.	0.11	0.55	0.10	0.18	0.21		0.32	0.67	0.04	0.39	0.39	
LEVEL OF SERVICE	A.M.	A	B	A	C	C		A	B	A	C	C	
	P.M.	A	A	A	C	C		A	B	A	C	C	
2032 30TH MAX. HOUR TRAFFIC	A.M.	19	946	74	28	32		62	772	16	39	59	
	P.M.	26	1031	83	26	39		100	1263	31	59	73	
2012 8TH MAX. HOURLY TRAFFIC	A.M.	575			35			470			55		
	P.M.	630			35			770			75		

2032 DHV (DESIGN YEAR)
AM (PM)



SIGNAL PHASING (DESIGN YEAR)



TRAFFIC DATA

MOVE-MENT	YEAR 2001 30TH MAXIMUM HOUR TRAFFIC		PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY 2012	YEAR 2012 30th MAXIMUM HOUR TRAFFIC		ESTIMATED PERCENT INCREASE FROM 2012 TO 2032	YEAR 2032 30th MAXIMUM HOUR TRAFFIC	
	A.M.	P.M.			A.M.	P.M.		A.M.	P.M.
AB			6		15	21	27/24	19	26
AD			6		60	68	23/22	74	83
AC			6		704	768	34/34	946	1031
BA			4		20	25	20/20	24	30
BC			4		23	22	22/18	28	26
BD			4		7	8	14/13	8	9
CD			6		50	81	24/23	62	100
CA			6		575	940	34/34	772	1263
CB			6		13	25	23/24	16	31
DC			4		37	41	22/24	45	51
DB			4		12	19	17/16	14	22
DA			4		32	48	22/23	39	59
TOTAL A					1406	1870		1874	2492
TOTAL B					90	120		109	144
TOTAL C					1402	1877		1869	2502
TOTAL D					198	265		242	324

CAPACITY DESIGN STUDY (CONSTRUCTION YEAR) 2012

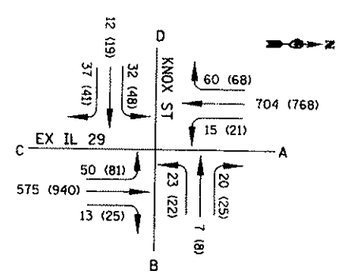
N/A PHASE
N/A SEC. CYCLE
SIGNAL TYPE 2-WAY STOP

AREA OTHER
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS+ 2000, 5.21

PEAK HOUR FACTOR 0.90
A.M. - SEC. INTERSECTION LEVEL A.M. -
P.M. - SEC. OF SERVICE P.M. -

APPROACH		SOUTHBOUND (A)			WESTBOUND (B)			NORTHBOUND (C)			EASTBOUND (D)		
BUS STOP CONDITION		N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
PARKING MANEUVER/HR.		N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
PEDESTRIANS		N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
ARRIVAL TYPE		N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
LANE UTILIZATION FACTOR		N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
BASE SATURATION FLOW		-	1700	1700	-	-		-	1700	1700	-	-	
D - DISTANCE		265'	N/A	265'	115'	N/A		265'	N/A	240'	115'	N/A	
LANE GROUP		L	T	R	L	TR		L	T	R	L	TR	
LANE WIDTHS		12'	2@12'	12'	12'	12'		12'	2@12'	12'	12'	12'	
GREEN TIME (SECONDS)	A.M.	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
	P.M.	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
G/C RATIO	A.M.	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
	P.M.	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
LANE GROUP DELAY (SECONDS)	A.M.	9.1	-	-	22.6	14.2		10.1	-	-	23.7	14.9	
	P.M.	11.0	-	-	43.5	19.5		10.8	-	-	39.8	22.7	
V/C RATIO	A.M.	0.02	-	-	0.11	0.07		0.07	-	-	0.15	0.13	
	P.M.	0.04	-	-	0.21	0.32		0.13	-	-	0.34	0.25	
LEVEL OF SERVICE	A.M.	A	-	-	C	B		B	-	-	C	B	
	P.M.	B	-	-	E	C		B	-	-	E	C	
2012 30TH MAX. HOUR TRAFFIC	A.M.	15	704	60	23	27		50	575	13	32	49	
	P.M.	21	768	68	22	33		81	940	25	48	60	
2012 8TH MAX. HOURLY TRAFFIC	A.M.	430			30			350			45		
	P.M.	475			30			575			60		

2012 DHV (CONSTRUCTION YEAR)
AM (PM)



NOTE:
EXISTING TRAFFIC VOLUMES ARE NOT AVAILABLE FOR THIS INTERSECTION.

INTERSECTION DESIGN STUDY

ROUTE (KNOX ST)
WITH
ROUTE (EXISTING IL 29)

SEC. NO.
SCALE 1"=50'
COUNTY PEORIA
SJN : P-94-009-01
PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 4 OF 6

•DGN-SPEC•
•DATE-TIME•
•REF•
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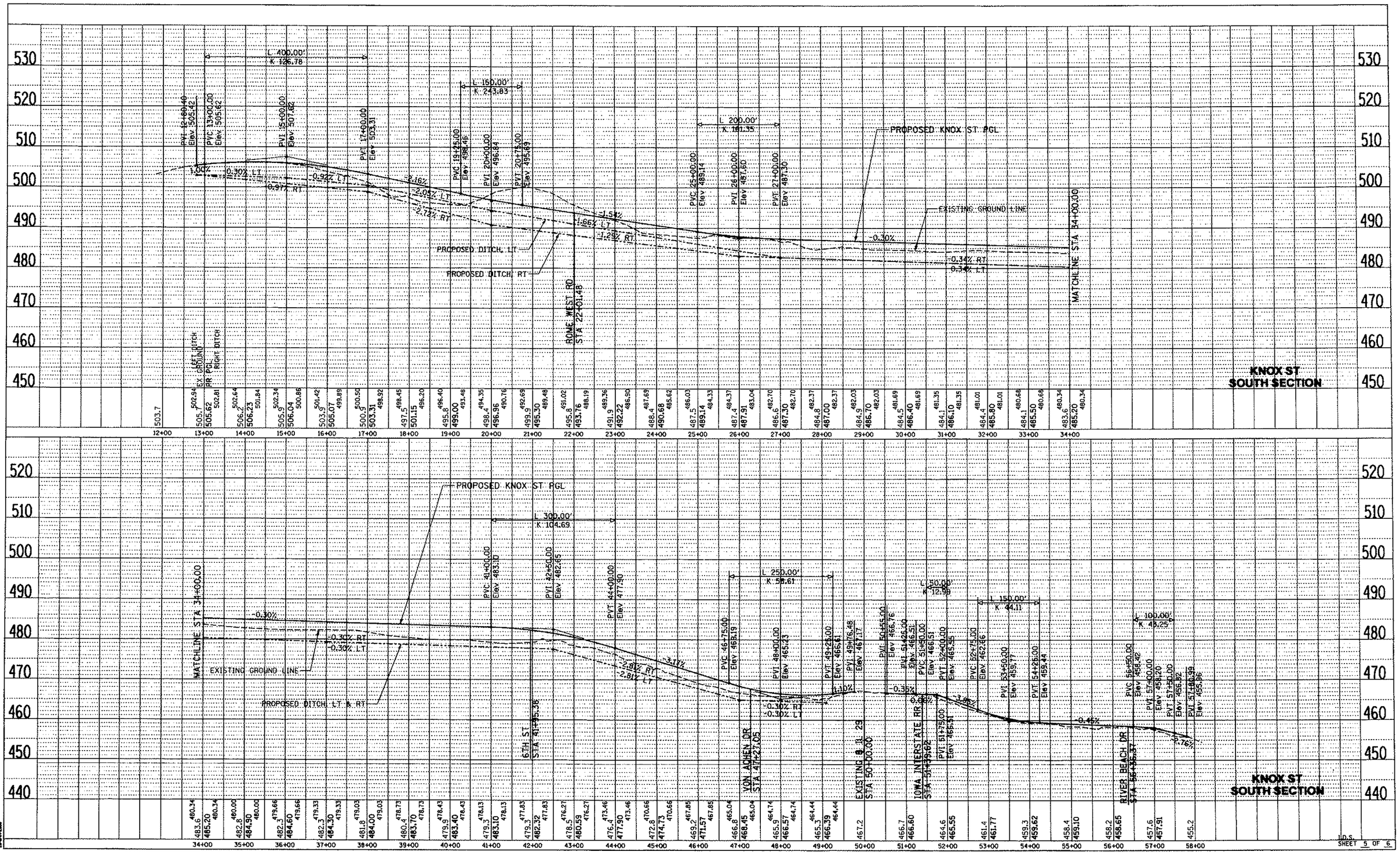
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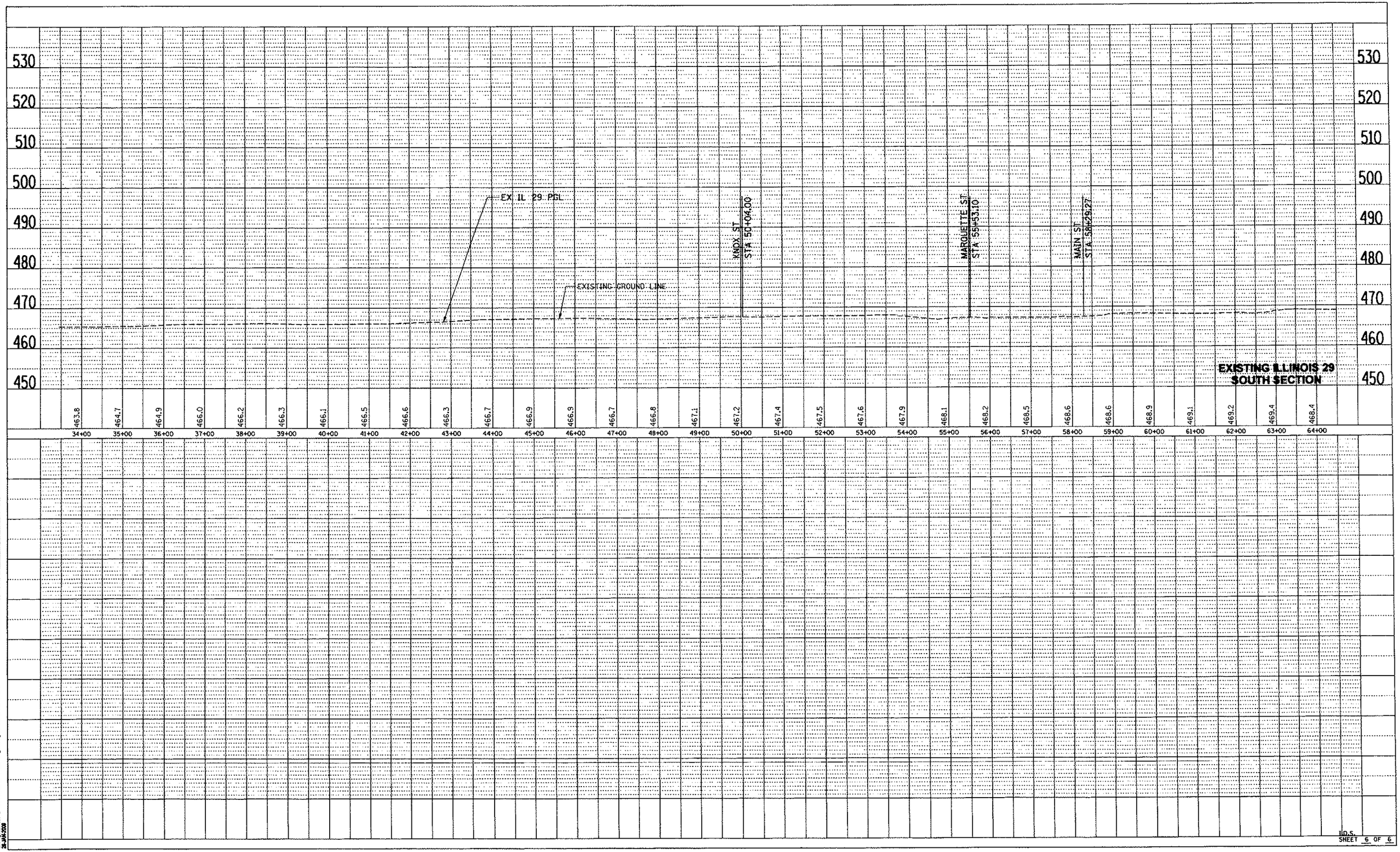
SURVEYED
PLOTTED
DESIGNED
CHECKED
R.W. NOTED
R.W. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE
PROFILE
STRUCTURE ROTATING GRADE
PROPOSED KNOX ST PGL
EXISTING GROUND LINE
PROPOSED DITCH, LT
PROPOSED DITCH, RT
PROPOSED DITCH LT & RT
MATCHLINE STA 34+00.00
ROME WEST RD
STA 22+01.48
EXISTING GROUND
PR PGL
LEFT DITCH
RIGHT DITCH
6TH ST
STA 41+95.38
YON ACHEN DR
STA 47+27.05
EXISTING 6 JL 29
STA 50+00.00
IOWA INTERSTATE RR
STA 51+39.62
RIVER BEACH DR
STA 56+36.37
KNOX ST
SOUTH SECTION
SHEET 5 OF 6



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26-JAN-2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERCHANGE DESIGN STUDY
IL 29 /McGRATH STREET INTERCHANGE

PREPARED BY : CH2MHILL

OCTOBER 2007

Illinois Department of Transportation
CH2MHILL

June 2010
Catalog No. 032469-00P

mfdx
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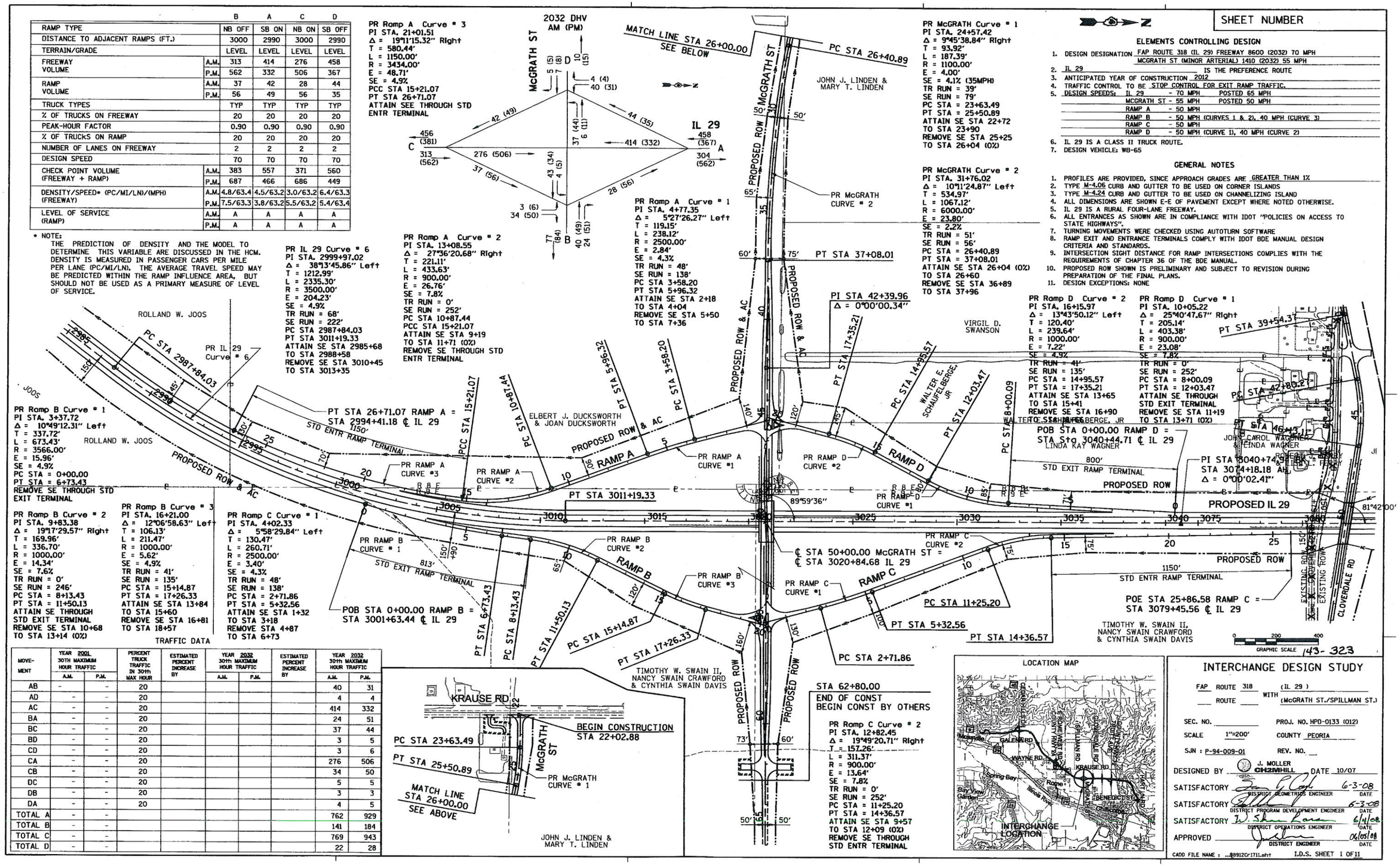
17-MAR-2009

		B	A	C	D
RAMP TYPE		NB OFF	SB ON	NB ON	SB OFF
DISTANCE TO ADJACENT RAMPS (FT.)		3000	2990	3000	2990
TERRAIN/GRADE		LEVEL	LEVEL	LEVEL	LEVEL
FREEWAY VOLUME	A.M.	313	414	276	458
	P.M.	562	332	506	367
RAMP VOLUME	A.M.	37	42	28	44
	P.M.	56	49	56	35
TRUCK TYPES		TYP	TYP	TYP	TYP
% OF TRUCKS ON FREEWAY		20	20	20	20
PEAK-HOUR FACTOR		0.90	0.90	0.90	0.90
% OF TRUCKS ON RAMP		20	20	20	20
NUMBER OF LANES ON FREEWAY		2	2	2	2
DESIGN SPEED		70	70	70	70
CHECK POINT VOLUME (FREEWAY + RAMP)	A.M.	383	557	371	560
	P.M.	687	466	686	449
DENSITY/SPEED* (PC/MI/LN)/(MPH) (FREEWAY)	A.M.	4.8/63.4	4.5/63.2	3.0/63.2	6.4/63.3
	P.M.	7.5/63.3	3.8/63.2	5.5/63.2	5.4/63.4
LEVEL OF SERVICE (RAMP)	A.M.	A	A	A	A
	P.M.	A	A	A	A

* NOTE:
THE PREDICTION OF DENSITY AND THE MODEL TO DETERMINE THIS VARIABLE ARE DISCUSSED IN THE HCM. DENSITY IS MEASURED IN PASSENGER CARS PER MILE PER LANE (PC/MI/LN). THE AVERAGE TRAVEL SPEED MAY BE PREDICTED WITHIN THE RAMP INFLUENCE AREA, BUT SHOULD NOT BE USED AS A PRIMARY MEASURE OF LEVEL OF SERVICE.



SHEET NUMBER

ELEMENTS CONTROLLING DESIGN

1. DESIGN DESIGNATION FAP ROUTE 318 (IL 29) FREEWAY 8600 (2032) 70 MPH
   MCGRATH ST (MINOR ARTERIAL) 1410 (2032) 55 MPH
2. IL 29 IS THE PREFERENCE ROUTE
3. ANTICIPATED YEAR OF CONSTRUCTION 2012
4. TRAFFIC CONTROL TO BE STOP CONTROL FOR EXIT RAMP TRAFFIC.
5. DESIGN SPEEDS: IL 29 - 70 MPH POSTED 65 MPH
   MCGRATH ST - 55 MPH POSTED 50 MPH
   RAMP A - 50 MPH
   RAMP B - 50 MPH (CURVES 1 & 2), 40 MPH (CURVE 3)
   RAMP C - 50 MPH
   RAMP D - 50 MPH (CURVE 1), 40 MPH (CURVE 2)
6. IL 29 IS A CLASS II TRUCK ROUTE.
7. DESIGN VEHICLE: WB-65

GENERAL NOTES

1. PROFILES ARE PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. TYPE M-4.06 CURB AND GUTTER TO BE USED ON CORNER ISLANDS
3. TYPE M-4.24 CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND
4. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT EXCEPT WHERE NOTED OTHERWISE.
5. IL 29 IS A RURAL FOUR-LANE FREEWAY.
6. ALL ENTRANCES AS SHOWN ARE IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
7. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE
8. RAMP EXIT AND ENTRANCE TERMINALS COMPLY WITH IDOT BDE MANUAL DESIGN CRITERIA AND STANDARDS.
9. INTERSECTION SIGHT DISTANCE FOR RAMP INTERSECTIONS COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE BDE MANUAL.
10. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF THE FINAL PLANS.
11. DESIGN EXCEPTIONS: NONE

TRAFFIC DATA

MOVEMENT	YEAR 2001 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB	-	-	20					40	31
AD	-	-	20					4	4
AC	-	-	20					414	332
BA	-	-	20					24	51
BC	-	-	20					37	44
BD	-	-	20					3	5
CD	-	-	20					3	6
CA	-	-	20					276	506
CB	-	-	20					34	50
DC	-	-	20					5	5
DB	-	-	20					3	3
DA	-	-	20					4	5
TOTAL A	-	-						762	929
TOTAL B	-	-						141	184
TOTAL C	-	-						769	943
TOTAL D	-	-						22	28

INTERCHANGE DESIGN STUDY

FAP ROUTE 318 (IL 29) WITH ___ ROUTE ___ (McGRATH ST./SPILLMAN ST.)

SEC. NO. ___ PROJ. NO. HPD-0133 (012)

SCALE 1"=200' COUNTY PEORIA

SJN : P-94-009-01 REV. NO. ___

DESIGNED BY J. MOLLER CH2MHILL DATE 10/07

SATISFACTORY ___ DISTRICT GEOMETRICS ENGINEER DATE 6-3-08

SATISFACTORY ___ DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE 6-3-08

SATISFACTORY ___ DISTRICT OPERATIONS ENGINEER DATE 6/4/08

APPROVED ___ DISTRICT ENGINEER DATE 06/05/08

CADD FILE NAME : ...88912Cr1711.sht I.D.S. SHEET 1 OF 11

DGN-SPEC
DATE-TIME
*REF--
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*REF--

Plotted by bgarvin
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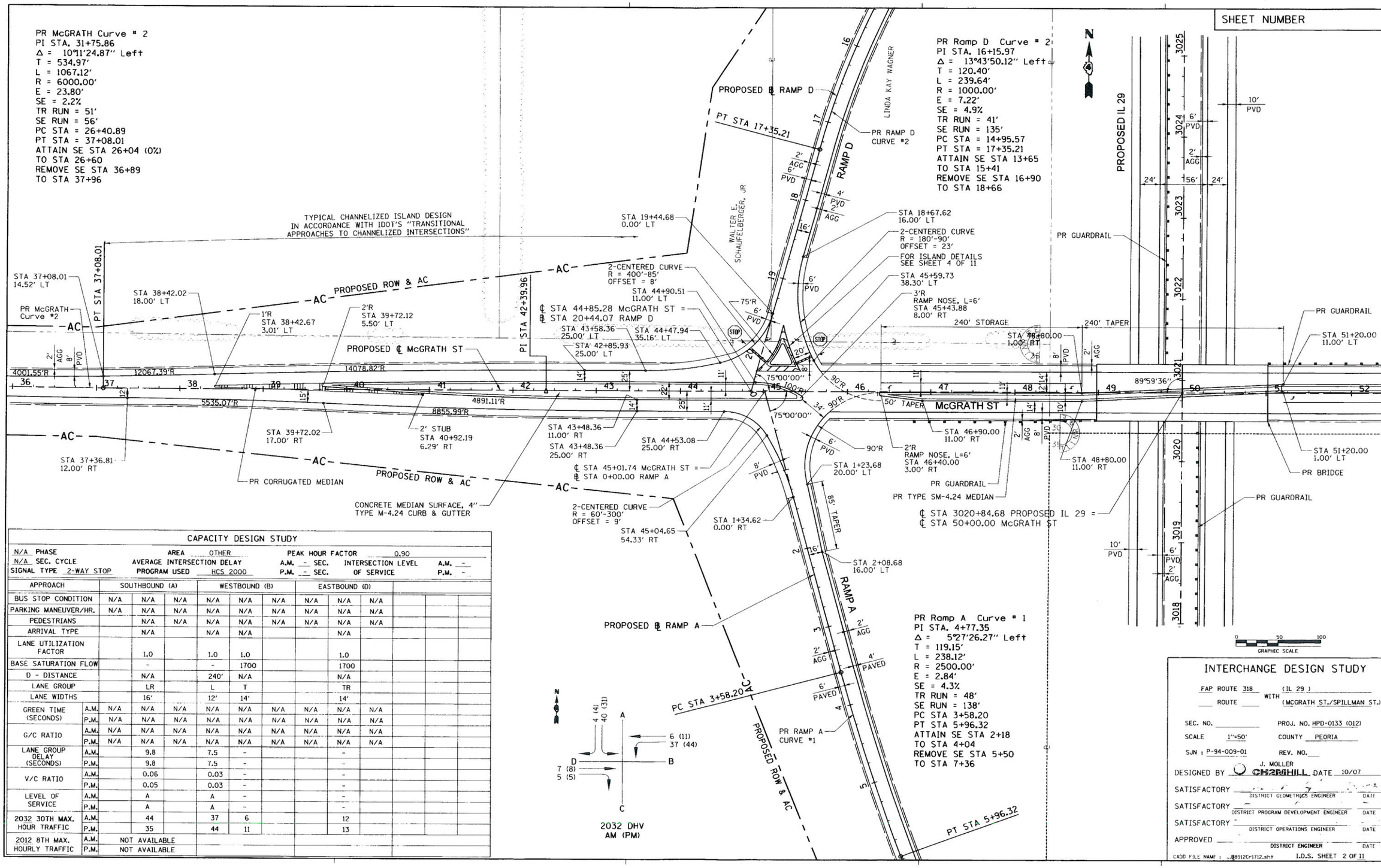
5/7/2008

SHEET NUMBER

PR McGRATH Curve # 2
PI STA. 31+75.86
Δ = 10°11'24.87" Left
T = 534.97'
L = 1067.12'
R = 6000.00'
E = 23.80'
SE = 2.2%
TR RUN = 51'
SE RUN = 56'
PC STA = 26+40.89
PT STA = 37+08.01
ATTAIN SE STA 26+04 (0%)
TO STA 26+60
REMOVE SE STA 36+89
TO STA 37+96

PR Ramp D Curve # 2
PI STA. 16+15.97
Δ = 13°43'50.12" Left
T = 120.40'
L = 239.64'
R = 1000.00'
E = 7.22'
SE = 4.9%
TR RUN = 41'
SE RUN = 135'
PC STA = 14+95.57
PT STA = 17+35.21
ATTAIN SE STA 13+65
TO STA 15+41
REMOVE SE STA 16+90
TO STA 18+66



CAPACITY DESIGN STUDY

N/A PHASE
N/A SEC. CYCLE
SIGNAL TYPE 2-WAY STOP

AREA OTHER
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS 2000

PEAK HOUR FACTOR 0.90
A.M. - SEC. INTERSECTION LEVEL A.M. -
P.M. - SEC. OF SERVICE P.M. -

APPROACH		SOUTHBOUND (A)			WESTBOUND (B)			EASTBOUND (D)					
BUS STOP CONDITION		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
PARKING MANEUVER/HR.		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
PEDESTRIANS			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
ARRIVAL TYPE			N/A		N/A	N/A			N/A				
LANE UTILIZATION FACTOR			1.0		1.0	1.0			1.0				
BASE SATURATION FLOW			-		-	1700			1700				
D - DISTANCE			N/A		240'	N/A			N/A				
LANE GROUP			LR		L	T			TR				
LANE WIDTHS			16'		12'	14'			14'				
GREEN TIME (SECONDS)	A.M.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
	P.M.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
G/C RATIO	A.M.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
	P.M.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
LANE GROUP DELAY (SECONDS)	A.M.		9.8		7.5	-			-				
	P.M.		9.8		7.5	-			-				
V/C RATIO	A.M.		0.06		0.03	-			-				
	P.M.		0.05		0.03	-			-				
LEVEL OF SERVICE	A.M.		A		A	-			-				
	P.M.		A		A	-			-				
2032 30TH MAX. HOUR TRAFFIC	A.M.		44		37	6			12				
	P.M.		35		44	11			13				
2012 8TH MAX. HOURLY TRAFFIC	A.M.	NOT AVAILABLE											
	P.M.	NOT AVAILABLE											

INTERCHANGE DESIGN STUDY

FAP ROUTE 318 (IL 29)
ROUTE WITH (MCGRATH ST./SPILLMAN ST.)

SEC. NO.
PROJ. NO. HPD-0133 (012)
SCALE 1"=50'
COUNTY PEORIA
SJN : P-94-009-01
REV. NO.

DESIGNED BY J. MOLLER CH2MHILL DATE 10/07
SATISFACTORY DISTRICT GEOMETRICS ENGINEER DATE
SATISFACTORY DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE
SATISFACTORY DISTRICT OPERATIONS ENGINEER DATE
APPROVED DISTRICT ENGINEER DATE

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Plotted by: bgarris
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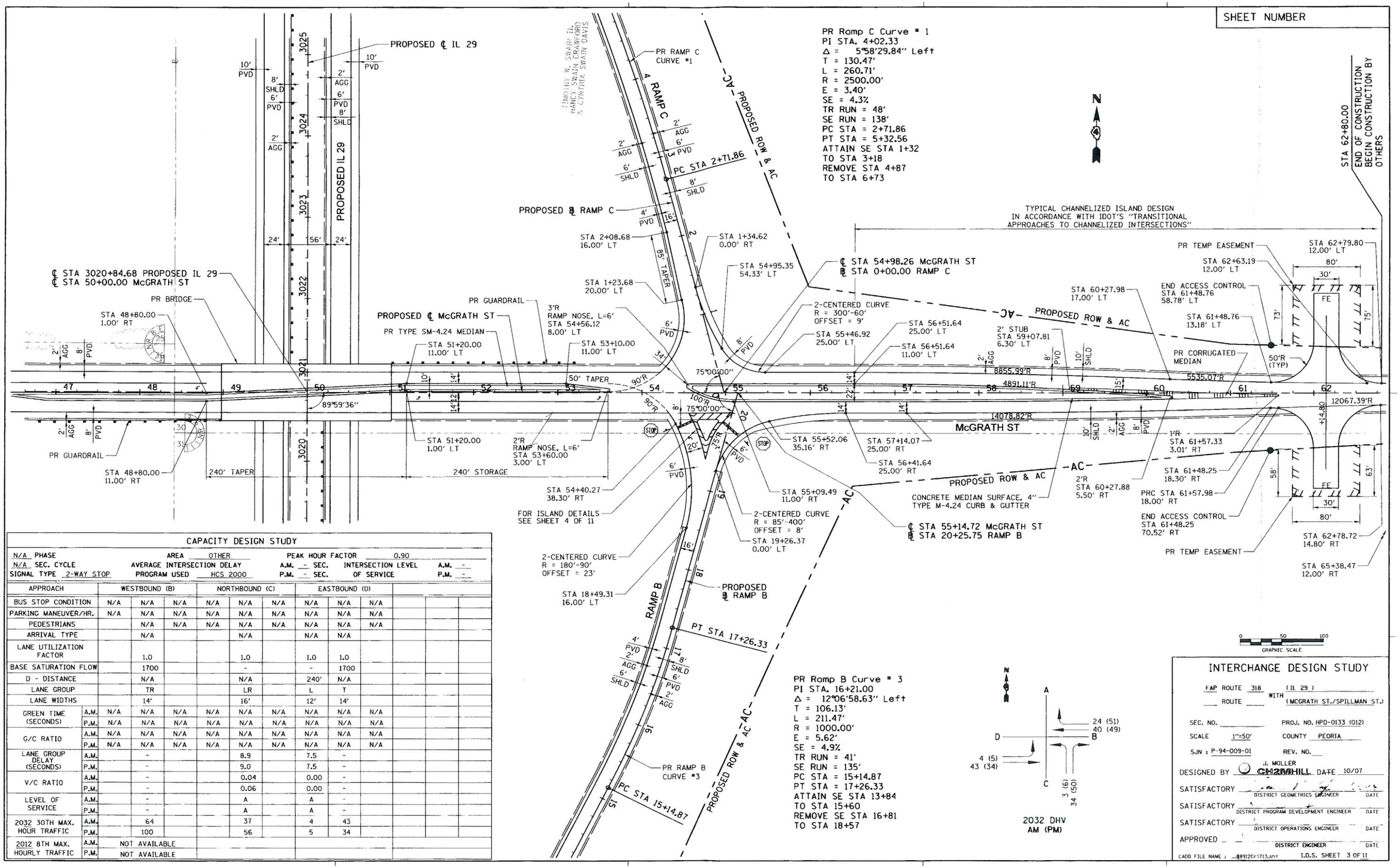

CAPACITY DESIGN STUDY

N/A PHASE — AREA OTHER — PEAK HOUR FACTOR 0.90
N/A SEC. CYCLE — AVERAGE INTERSECTION DELAY A.M. – SEC. — INTERSECTION LEVEL A.M. –
SIGNAL TYPE 2-WAY STOP — PROGRAM USED HCS 2000 — P.M. – SEC. — OF SERVICE P.M. –

APPROACH		WESTBOUND (B)			NORTHBOUND (C)			EASTBOUND (D)					
BUS STOP CONDITION		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
PARKING MANEUVER/HR.		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
PEDESTRIANS			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
ARRIVAL TYPE			N/A			N/A		N/A	N/A				
LANE UTILIZATION FACTOR			1.0			1.0		1.0	1.0				
BASE SATURATION FLOW			1700			-		-	1700				
D - DISTANCE			N/A			N/A		240'	N/A				
LANE GROUP			TR			LR		L	T				
LANE WIDTHS			14'			16'		12'	14'				
GREEN TIME (SECONDS)	A.M.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
	P.M.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
G/C RATIO	A.M.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
	P.M.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
LANE GROUP DELAY (SECONDS)	A.M.		-			8.9		7.5	-				
	P.M.		-			9.0		7.5	-				
V/C RATIO	A.M.		-			0.04		0.00	-				
	P.M.		-			0.06		0.00	-				
LEVEL OF SERVICE	A.M.		-			A		A	-				
	P.M.		-			A		A	-				
2032 30TH MAX. HOUR TRAFFIC	A.M.		64			37		4	43				
	P.M.		100			56		5	34				
2012 8TH MAX. HOURLY TRAFFIC	A.M.	NOT AVAILABLE											
	P.M.	NOT AVAILABLE											

INTERCHANGE DESIGN STUDY

FAP ROUTE 318 (IL 29) WITH
ROUTE ____ (MCGRATH ST./SPILLMAN ST.)

SEC. NO. ____ PROJ. NO. HPD-0133 (012)
SCALE 1"=50' COUNTY PEORIA
SJN : P-94-009-01 REV. NO. ____

DESIGNED BY J. MOLLER CH2MHILL DATE 10/07
SATISFACTORY ____ DISTRICT GEOMETRICS ENGINEER DATE
SATISFACTORY ____ DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE
SATISFACTORY ____ DISTRICT OPERATIONS ENGINEER DATE
APPROVED ____ DISTRICT ENGINEER DATE

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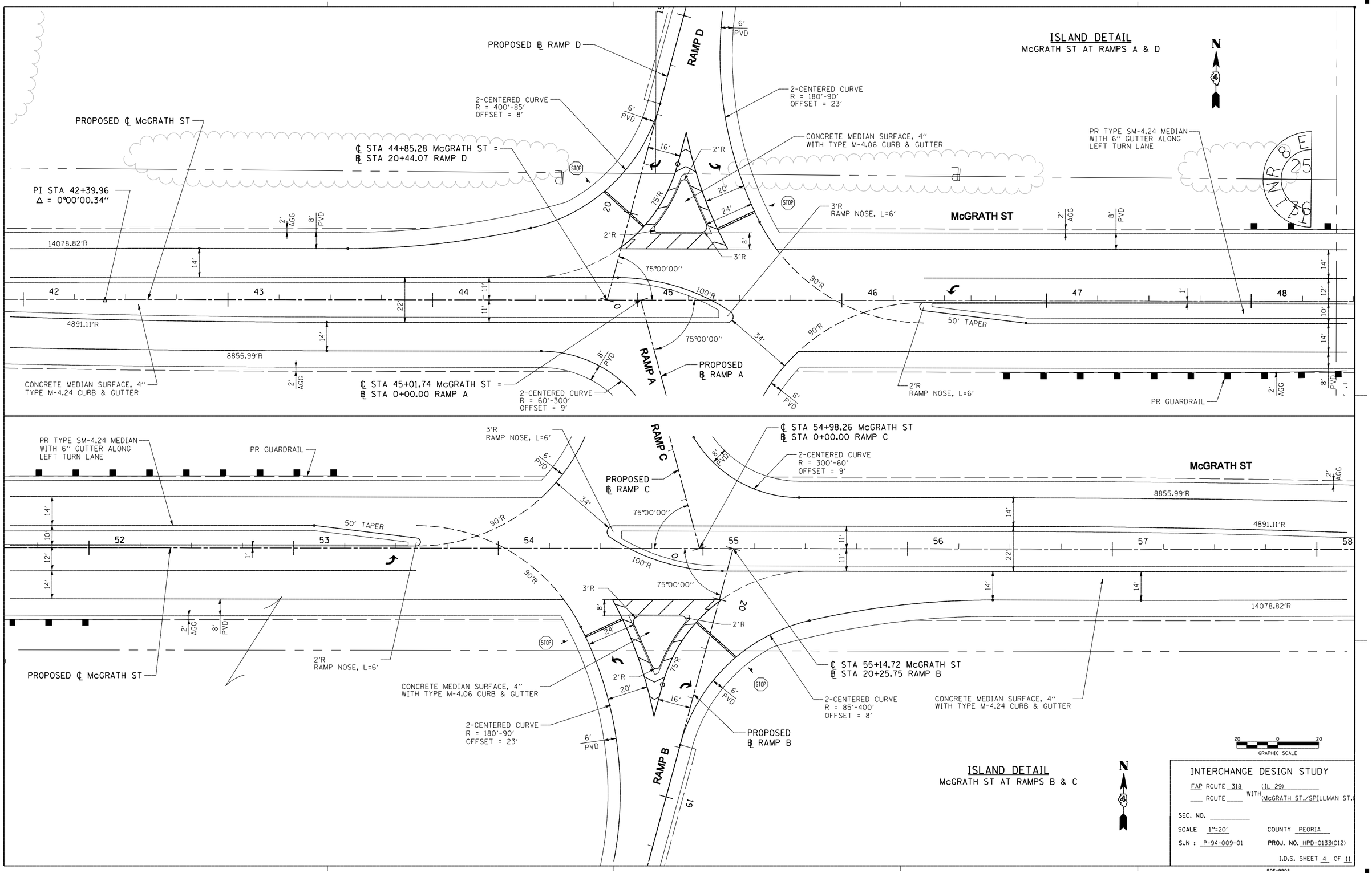
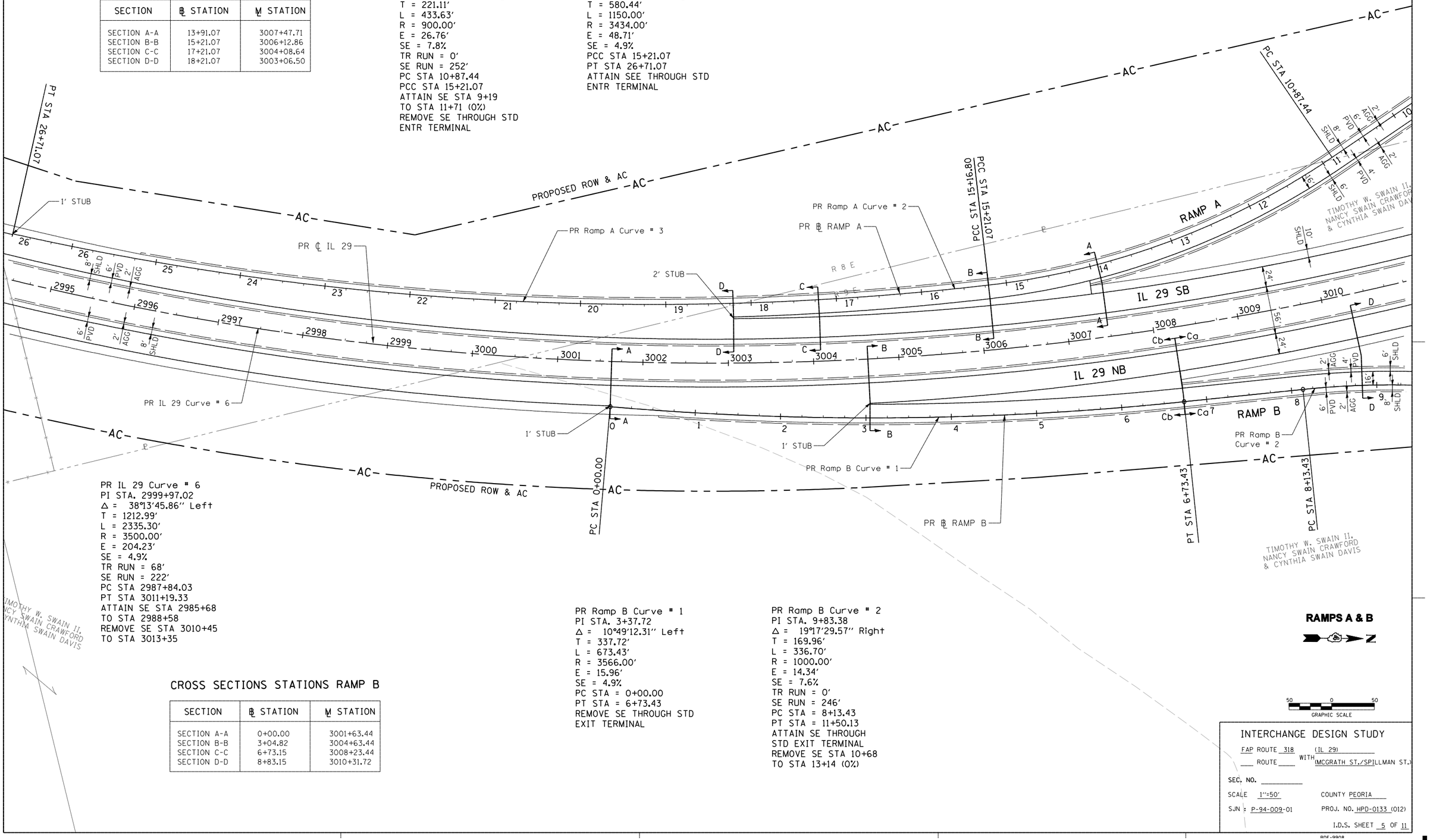

ISLAND DETAIL
McGRATH ST AT RAMPS A & D
N
PROPOSED ℄ RAMP D
RAMP D
6' PVD
2-CENTERED CURVE
R = 400'-85'
OFFSET = 8'
2-CENTERED CURVE
R = 180'-90'
OFFSET = 23'
PROPOSED ℄ McGRATH ST
℄ STA 44+85.28 McGRATH ST =
℄ STA 20+44.07 RAMP D
CONCRETE MEDIAN SURFACE, 4"
WITH TYPE M-4.06 CURB & GUTTER
PR TYPE SM-4.24 MEDIAN
WITH 6" GUTTER ALONG
LEFT TURN LANE
PI STA 42+39.96
Δ = 0°00'00.34"
3'R
RAMP NOSE, L=6'
McGRATH ST
14078.82'R
4891.11'R
8855.99'R
75°00'00"
100'R
90'R
34'
50' TAPER
RAMP A
PROPOSED
℄ RAMP A
℄ STA 45+01.74 McGRATH ST =
℄ STA 0+00.00 RAMP A
2-CENTERED CURVE
R = 60'-300'
OFFSET = 9'
2'R
RAMP NOSE, L=6'
PR GUARDRAIL
CONCRETE MEDIAN SURFACE, 4"
TYPE M-4.24 CURB & GUTTER
ISLAND DETAIL
McGRATH ST AT RAMPS B & C
RAMP C
PROPOSED
℄ RAMP C
℄ STA 54+98.26 McGRATH ST
℄ STA 0+00.00 RAMP C
2-CENTERED CURVE
R = 300'-60'
OFFSET = 9'
℄ STA 55+14.72 McGRATH ST
℄ STA 20+25.75 RAMP B
2-CENTERED CURVE
R = 85'-400'
OFFSET = 8'
CONCRETE MEDIAN SURFACE, 4"
WITH TYPE M-4.24 CURB & GUTTER
RAMP B
PROPOSED
℄ RAMP B
GRAPHIC SCALE
INTERCHANGE DESIGN STUDY
FAP ROUTE 318 (IL 29)
ROUTE ____ WITH (McGRATH ST./SP)LLMAN ST.)
SEC. NO. ____
SCALE 1"=20'
COUNTY PEORIA
SJN : P-94-009-01
PROJ. NO. HPD-0133(012)
I.D.S. SHEET 4 OF 11

CROSS SECTIONS STATIONS RAMP A

SECTION	℄ STATION	M STATION
SECTION A-A	13+91.07	3007+47.71
SECTION B-B	15+21.07	3006+12.86
SECTION C-C	17+21.07	3004+08.64
SECTION D-D	18+21.07	3003+06.50

PR Ramp A Curve # 2
PI STA. 13+08.55
Δ = 27°36'20.68" Right
T = 221.11'
L = 433.63'
R = 900.00'
E = 26.76'
SE = 7.8%
TR RUN = 0'
SE RUN = 252'
PC STA 10+87.44
PCC STA 15+21.07
ATTAIN SE STA 9+19
TO STA 11+71 (0%)
REMOVE SE THROUGH STD
ENTR TERMINAL

PR Ramp A Curve # 3
PI STA. 21+01.51
Δ = 19°11'15.32" Right
T = 580.44'
L = 1150.00'
R = 3434.00'
E = 48.71'
SE = 4.9%
PCC STA 15+21.07
PT STA 26+71.07
ATTAIN SEE THROUGH STD
ENTR TERMINAL



PR IL 29 Curve # 6
PI STA. 2999+97.02
Δ = 38°13'45.86" Left
T = 1212.99'
L = 2335.30'
R = 3500.00'
E = 204.23'
SE = 4.9%
TR RUN = 68'
SE RUN = 222'
PC STA 2987+84.03
PT STA 3011+19.33
ATTAIN SE STA 2985+68
TO STA 2988+58
REMOVE SE STA 3010+45
TO STA 3013+35

PR Ramp B Curve # 1
PI STA. 3+37.72
Δ = 10°49'12.31" Left
T = 337.72'
L = 673.43'
R = 3566.00'
E = 15.96'
SE = 4.9%
PC STA = 0+00.00
PT STA = 6+73.43
REMOVE SE THROUGH STD
EXIT TERMINAL

PR Ramp B Curve # 2
PI STA. 9+83.38
Δ = 19°17'29.57" Right
T = 169.96'
L = 336.70'
R = 1000.00'
E = 14.34'
SE = 7.6%
TR RUN = 0'
SE RUN = 246'
PC STA = 8+13.43
PT STA = 11+50.13
ATTAIN SE THROUGH
STD EXIT TERMINAL
REMOVE SE STA 10+68
TO STA 13+14 (0%)

CROSS SECTIONS STATIONS RAMP B

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3001+63.44
SECTION B-B	3+04.82	3004+63.44
SECTION C-C	6+73.15	3008+23.44
SECTION D-D	8+83.15	3010+31.72

RAMPS A & B

GRAPHIC SCALE 50 0 50

INTERCHANGE DESIGN STUDY

FAP ROUTE 318 (IL 29)
___ ROUTE ____ WITH (MCGRATH ST./SPILLMAN ST.)

SEC. NO. _____

SCALE 1"=50' COUNTY PEORIA

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 5 OF 11

BDE-9908

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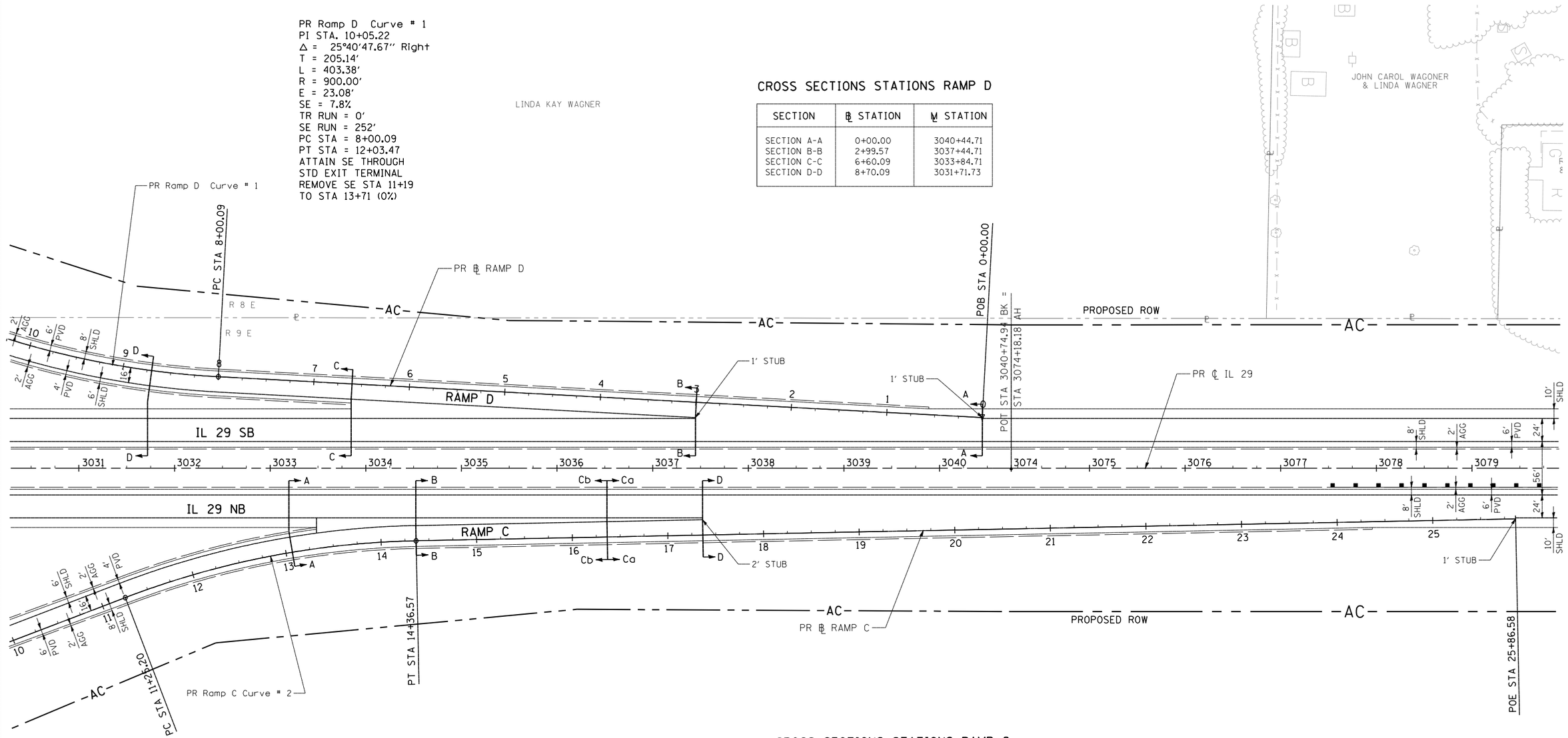
24-APR-2009

PR Ramp D Curve # 1
PI STA. 10+05.22
Δ = 25°40′47.67″ Right
T = 205.14′
L = 403.38′
R = 900.00′
E = 23.08′
SE = 7.8%
TR RUN = 0′
SE RUN = 252′
PC STA = 8+00.09
PT STA = 12+03.47
ATTAIN SE THROUGH
STD EXIT TERMINAL
REMOVE SE STA 11+19
TO STA 13+71 (0%)

LINDA KAY WAGNER

CROSS SECTIONS STATIONS RAMP D

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3040+44.71
SECTION B-B	2+99.57	3037+44.71
SECTION C-C	6+60.09	3033+84.71
SECTION D-D	8+70.09	3031+71.73



PR Ramp C Curve # 2
PI STA. 12+82.45
Δ = 19°49′20.71″ Right
T = 157.26′
L = 311.37′
R = 900.00′
E = 13.64′
SE = 7.8%
TR RUN = 0′
SE RUN = 252′
PC STA = 11+25.20
PT STA = 14+36.57
ATTAIN SE STA 9+57
TO STA 12+09 (0%)
REMOVE SE THROUGH
STD ENTR TERMINAL

TIMOTHY W. SWAIN II,
NANCY SWAIN CRAWFORD
& CYNTHIA SWAIN DAVIS

CROSS SECTIONS STATIONS RAMP C

SECTION	℄ STATION	M STATION
SECTION A-A	13+06.57	3033+19.61
SECTION B-B	14+36.57	3034+52.22
SECTION C-C	16+36.57	3036+52.19
SECTION D-D	17+36.57	3037+52.16

RAMPS C & D

50 0 50
GRAPHIC SCALE

INTERCHANGE DESIGN STUDY

FAP ROUTE 318 (IL 29)
___ ROUTE ___ WITH (McGRATH ST./SPILLMAN ST.)

SEC. NO. _____

SCALE 1″=50′ COUNTY PEORIA

SJN : P-94-009-01 PROJ. NO. HPD-0133(012)

I.D.S. SHEET 6 OF 11

BDE-9908

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•DATE-TIME•
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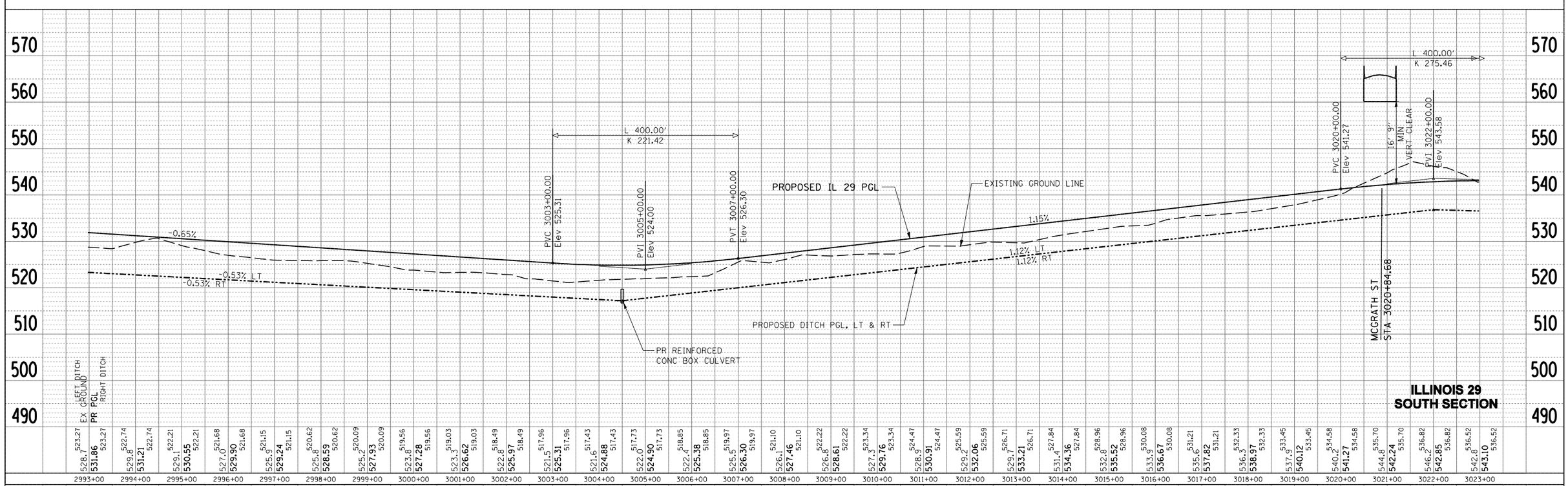
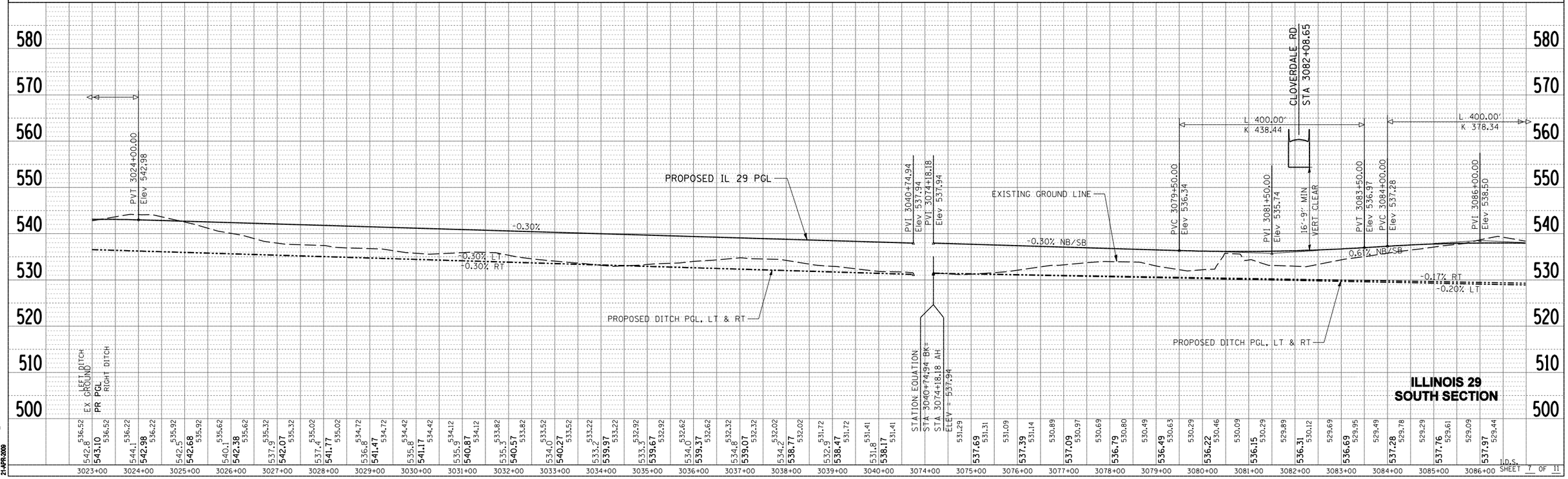
e21-APR-2009

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT-OF-WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE



PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
R/W CHECKED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE



gpdrivey
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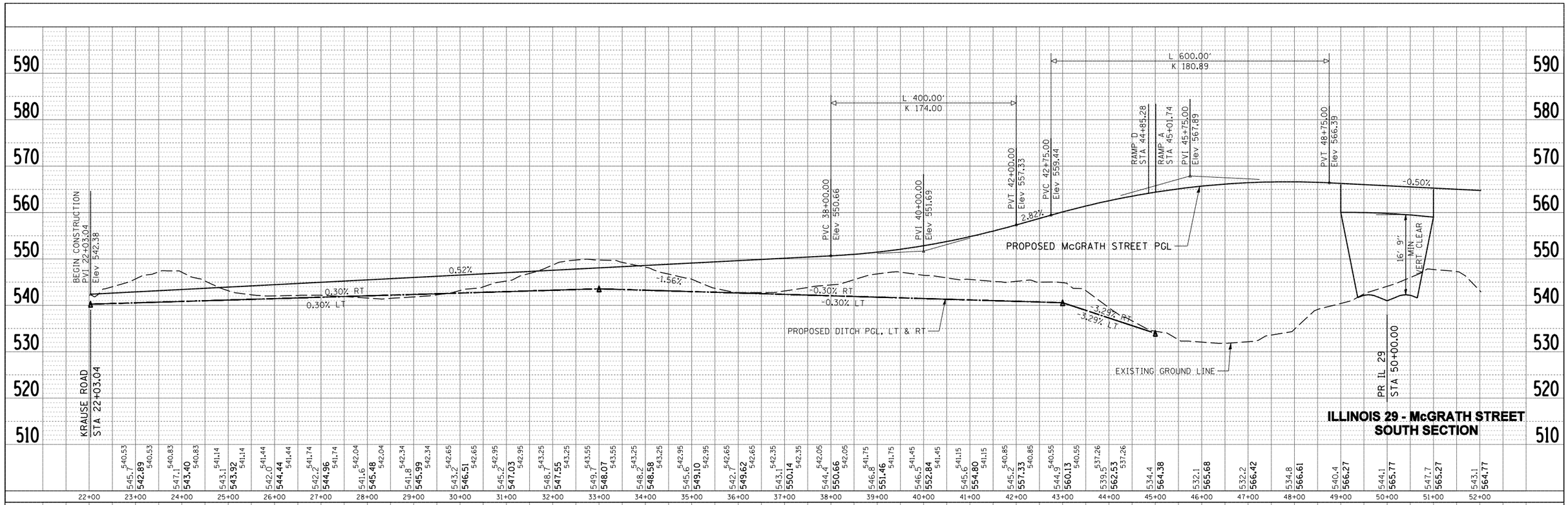
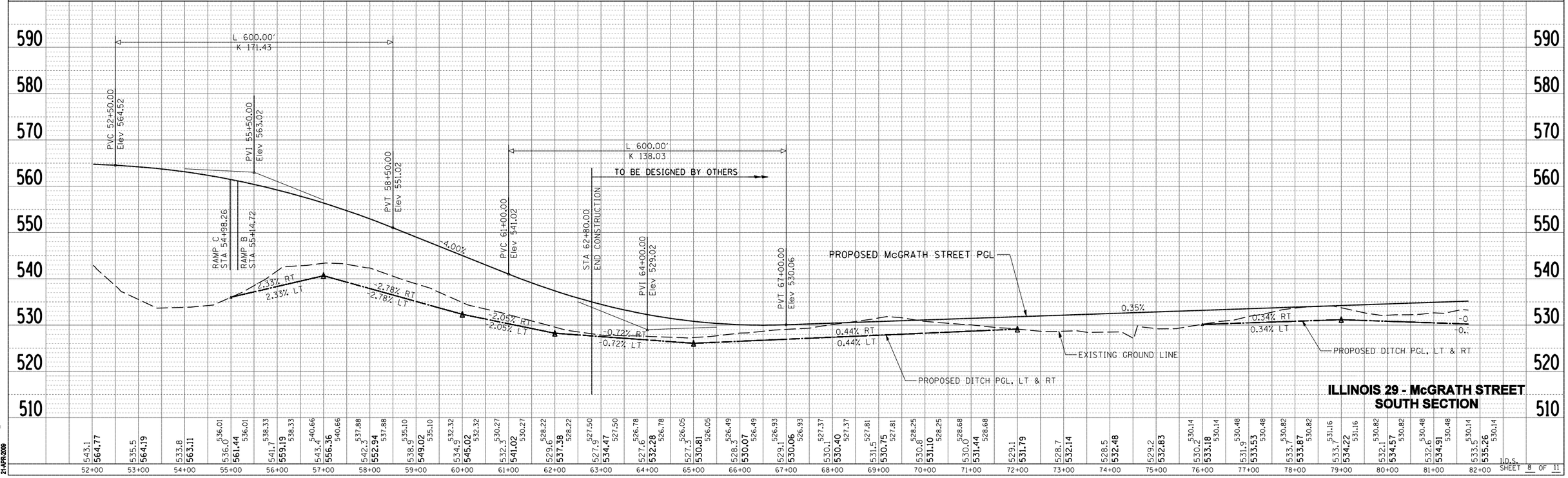
21-APR-2009





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ALIGNMENT CHECKED
GRADES CHECKED
R/W PLOTTED
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NOTE BOOK
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BY
DATE

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GRADES CHECKED
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STRUCTURE NOTATNS CHKD
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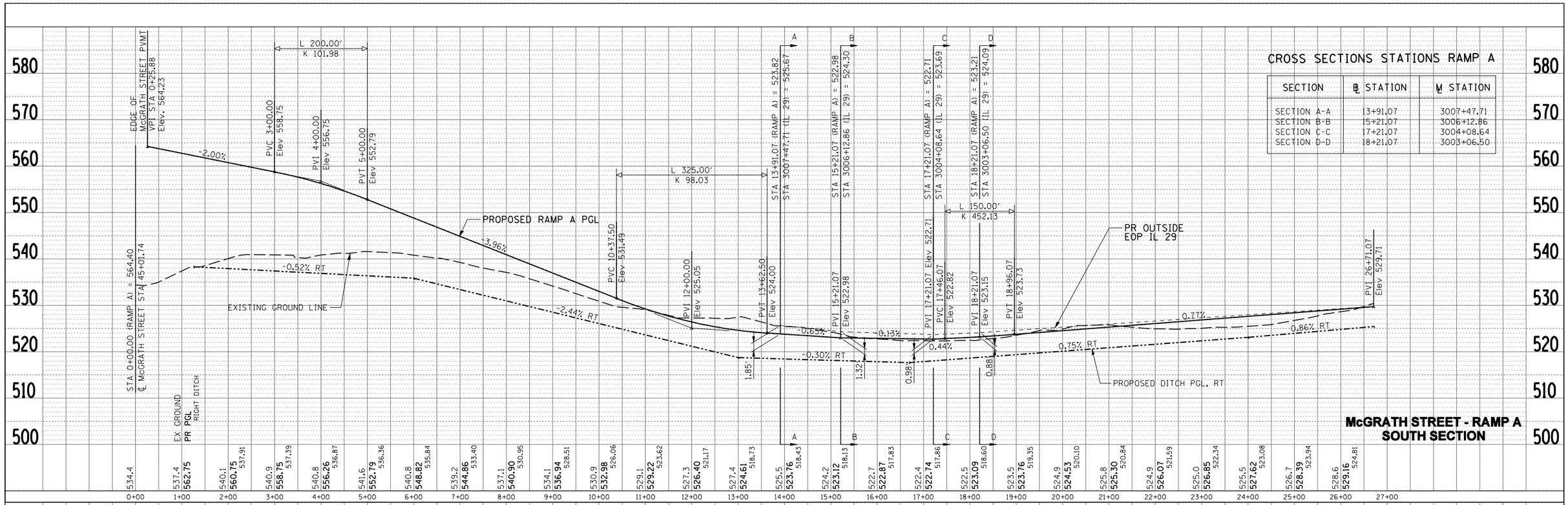
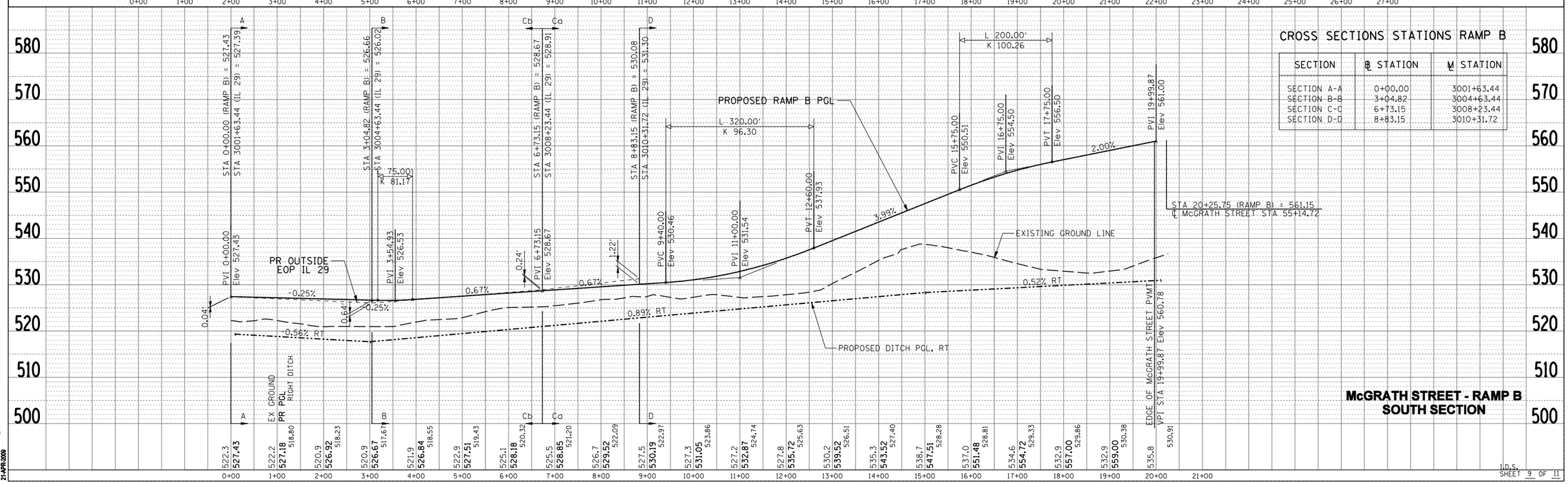
21-APR-2009

I.D.S.
SHEET 8 OF 11





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GRADES CHECKED
B.M. NOTED
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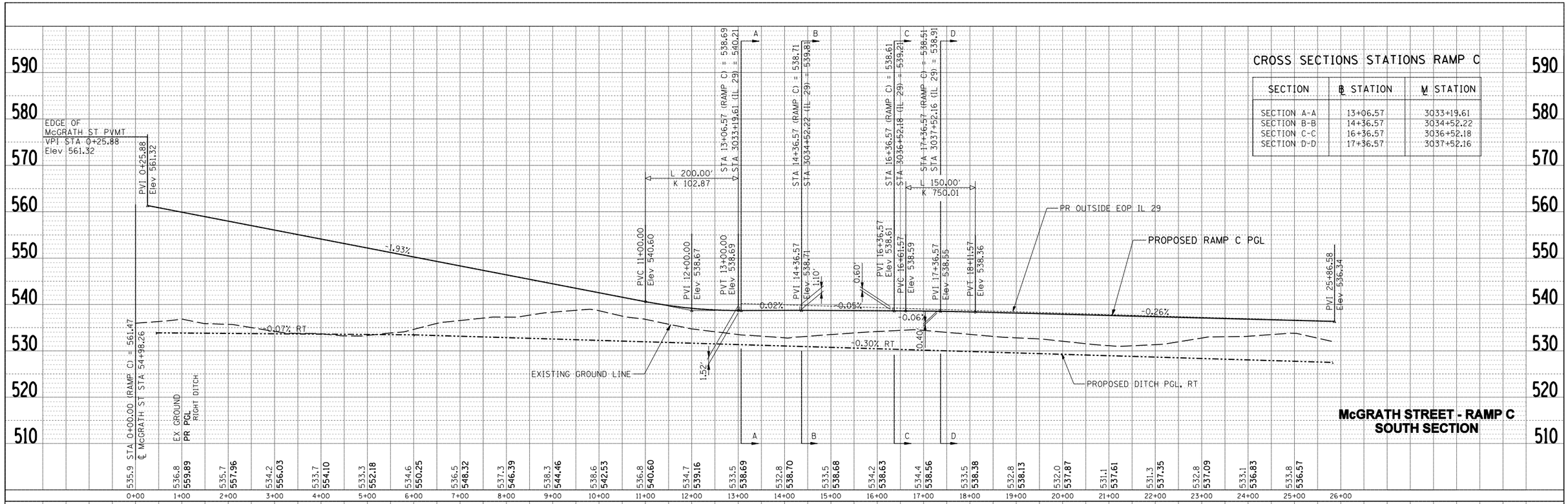
21-APR-2009

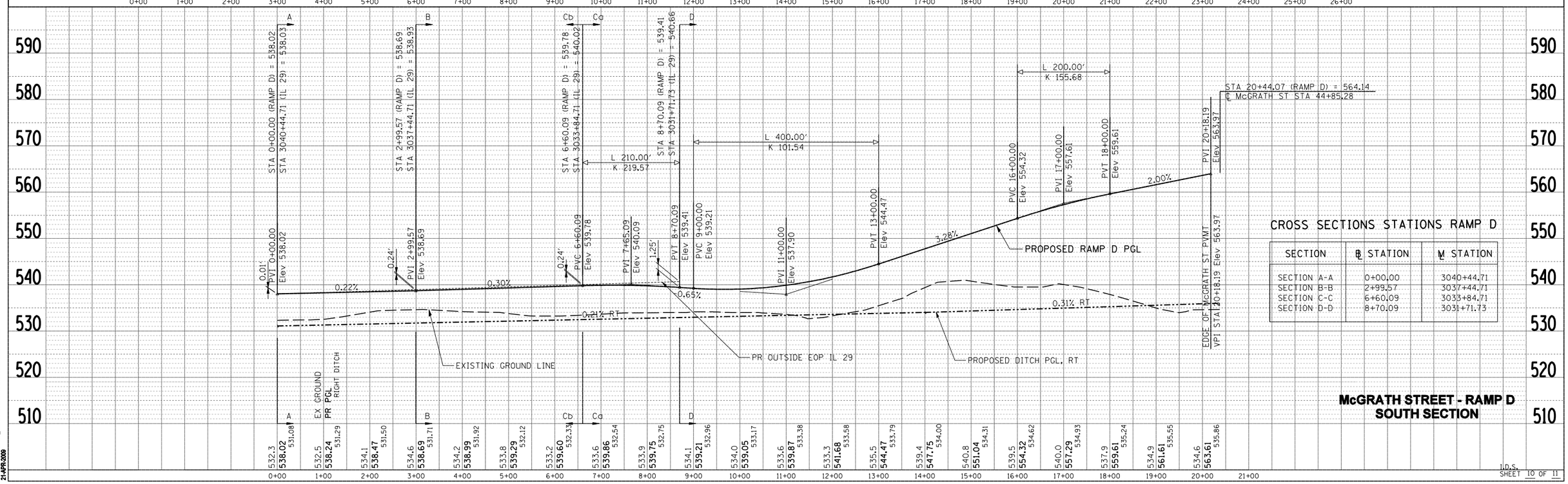
I.D.S.
SHEET 9 OF 11



CROSS SECTIONS STATIONS RAMP C

SECTION	℄ STATION	M STATION
SECTION A-A	13+06.57	3033+19.61
SECTION B-B	14+36.57	3034+52.22
SECTION C-C	16+36.57	3036+52.18
SECTION D-D	17+36.57	3037+52.16

McGRATH STREET - RAMP C
SOUTH SECTION



CROSS SECTIONS STATIONS RAMP D

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3040+44.71
SECTION B-B	2+99.57	3037+44.71
SECTION C-C	6+60.09	3033+84.71
SECTION D-D	8+70.09	3031+71.73

McGRATH STREET - RAMP D
SOUTH SECTION

PLAN
NOTE BOOK NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY PROCESSED
CADD FILE NAME
BY
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PROFILE
NOTE BOOK NO.
SURVEYED
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GRADES CHECKED
B.M. NOTED
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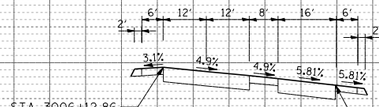
21-APR-2009

I.D.S.
SHEET 10 OF 11

CROSS SECTIONS STATIONS RAMP A

SECTION	℄ STATION	℄ STATION
SECTION A-A	13+91.07	3007+47.71
SECTION B-B	15+21.07	3006+12.86
SECTION C-C	17+21.07	3004+08.64
SECTION D-D	18+21.07	3003+06.50



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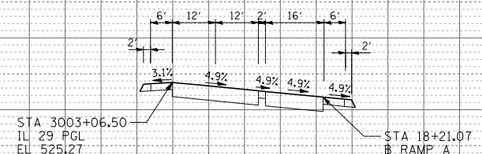

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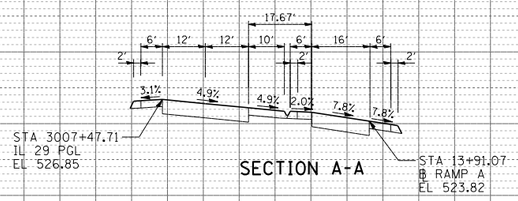
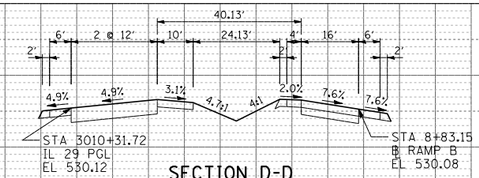


SECTION A-A

SECTION C-C

CROSS SECTIONS STATIONS RAMP B

SECTION	℄ STATION	℄ STATION
SECTION A-A	0+00.00	3001+63.44
SECTION B-B	3+04.82	3004+63.44
SECTION C-C	6+73.15	3008+23.44
SECTION D-D	8+83.15	3010+31.72



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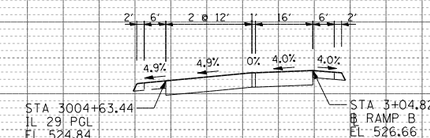

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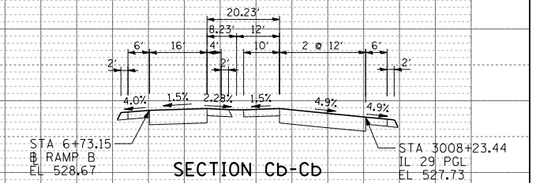

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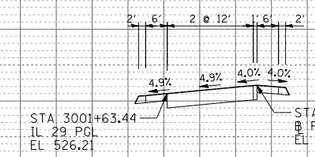

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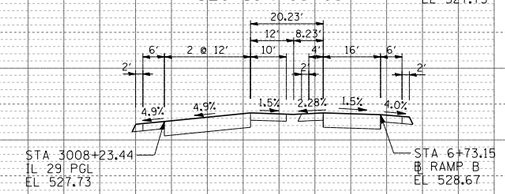
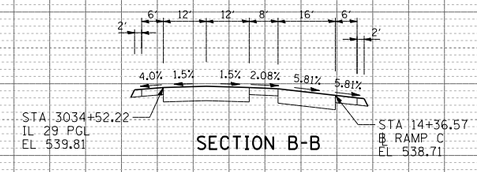


SECTION Ca-Ca

CROSS SECTIONS STATIONS RAMP C

SECTION	℄ STATION	℄ STATION
SECTION A-A	13+06.57	3033+19.61
SECTION B-B	14+36.57	3034+52.22
SECTION C-C	16+36.57	3036+52.19
SECTION D-D	17+36.57	3037+52.16



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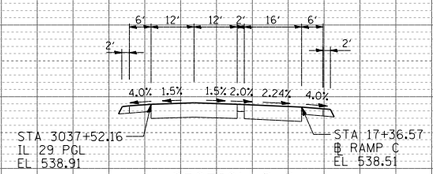

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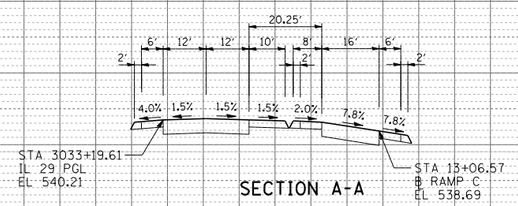

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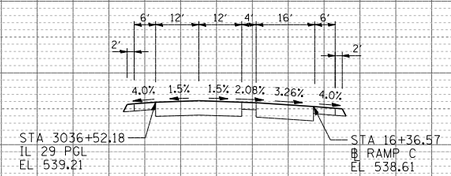
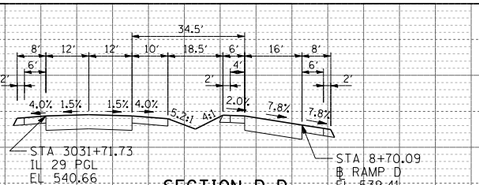


SECTION C-C

CROSS SECTIONS STATIONS RAMP D

SECTION	℄ STATION	℄ STATION
SECTION A-A	0+00.00	3040+44.71
SECTION B-B	2+99.57	3037+44.71
SECTION C-C	6+60.09	3033+84.71
SECTION D-D	8+70.09	3031+71.73



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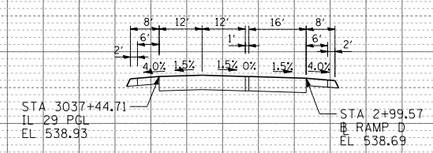

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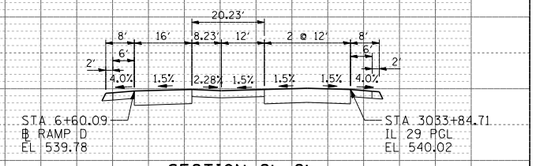

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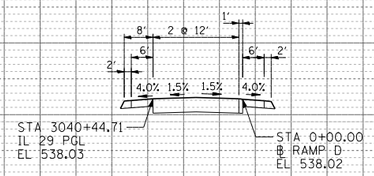

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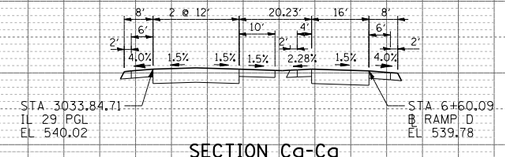

SECTION Ca-Ca

RAMP CROSS SECTIONS - McGRATH STREET SOUTH SECTION

I.D.S.

PLAN — SURVEYED / PLOTTED / ALIGNMENT CHECKED / RT. OF WAY CHECKED / CADD FILE NAME / NOTE BOOK / NO. / BY / DATE

PROFILE — SURVEYED / PLOTTED / GRADES CHECKED / RT. OF WAY CHECKED / STRUCTURE NOTATNS CHKD / NOTE BOOK / NO. / BY / DATE

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21-APR-2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERCHANGE DESIGN STUDY
IL 29 /TRUITT ROAD INTERCHANGE

PREPARED BY : CH2MHILL

NOVEMBER 2007

Illinois Department of Transportation

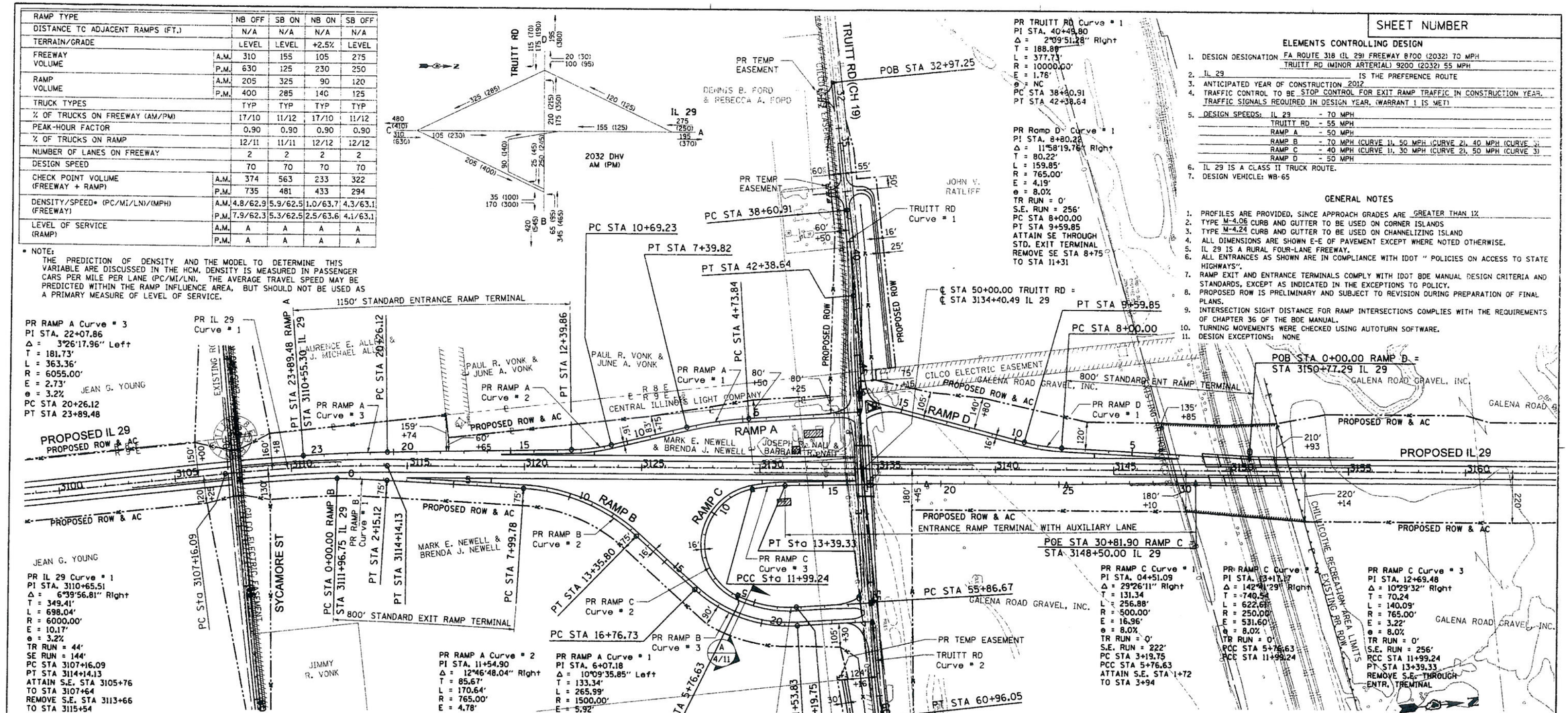
CH2MHILL

June 2010
Catalog No. 032469-00P

mfox
C:\Projects\168912 - IDOT Illinois 29 - Phase I Engineering Services\Appendix E_Truitt_IDS_CoverSheet.sht
17-MAR-2009

RAMP TYPE		NB OFF	SB ON	NB ON	SB OFF
DISTANCE TO ADJACENT RAMPS (FT.)		N/A	N/A	N/A	N/A
TERRAIN/GRADE		LEVEL	LEVEL	+2.5%	LEVEL
FREEWAY VOLUME	A.M.	310	155	105	275
	P.M.	630	125	230	250
RAMP VOLUME	A.M.	205	325	90	120
	P.M.	400	285	140	125
TRUCK TYPES		TYP	TYP	TYP	TYP
% OF TRUCKS ON FREEWAY (AM/PM)		17/10	11/12	17/10	11/12
PEAK-HOUR FACTOR		0.90	0.90	0.90	0.90
% OF TRUCKS ON RAMP		12/11	11/11	12/12	12/12
NUMBER OF LANES ON FREEWAY		2	2	2	2
DESIGN SPEED		70	70	70	70
CHECK POINT VOLUME (FREEWAY + RAMP)	A.M.	374	563	233	322
	P.M.	735	481	433	294
DENSITY/SPEED* (PC/MI/LN)/(MPH) (FREEWAY)	A.M.	4.8/62.9	5.9/62.5	1.0/63.7	4.3/63.1
	P.M.	7.9/62.3	5.3/62.5	2.5/63.6	4.1/63.1
LEVEL OF SERVICE (RAMP)	A.M.	A	A	A	A
	P.M.	A	A	A	A

* NOTE:
THE PREDICTION OF DENSITY AND THE MODEL TO DETERMINE THIS VARIABLE ARE DISCUSSED IN THE HCM. DENSITY IS MEASURED IN PASSENGER CARS PER MILE PER LANE (PC/MI/LN). THE AVERAGE TRAVEL SPEED MAY BE PREDICTED WITHIN THE RAMP INFLUENCE AREA, BUT SHOULD NOT BE USED AS A PRIMARY MEASURE OF LEVEL OF SERVICE.



PR TRUITT RD Curve # 1
PI STA. 40+48.80
Δ = 2°09'51.28" Right
T = 188.89'
L = 377.71'
R = 10000.00'
E = 1.76'
e = NC
PC STA 38+60.91
PT STA 42+38.64

PR Ramp D Curve # 1
PI STA. 8+80.22
Δ = 11°58'19.76" Right
T = 80.22'
L = 159.85'
R = 765.00'
E = 4.19'
e = 8.0%
TR RUN = 0'
S.E. RUN = 256'
PC STA 8+00.00
PT STA 9+59.85
ATTAIN SE THROUGH
STD. EXIT TERMINAL
REMOVE SE STA 8+75
TO STA 11+31

PR RAMP A Curve # 3
PI STA. 22+07.86
Δ = 3°26'17.96" Left
T = 181.73'
L = 363.36'
R = 6055.00'
E = 2.73'
e = 3.2%
PC STA 20+26.12
PT STA 23+89.48

PR IL 29 Curve # 1
PI STA. 3110+65.51
Δ = 6°39'56.81" Right
T = 349.41'
L = 698.04'
R = 6000.00'
E = 10.17'
e = 3.2%
TR RUN = 44'
SE RUN = 144'
PC STA 3107+16.09
PT STA 3114+14.13
ATTAIN S.E. STA 3105+76
TO STA 3107+64
REMOVE S.E. STA 3113+66
TO STA 3115+54

PR RAMP A Curve # 2
PI STA. 11+54.90
Δ = 12°46'48.04" Right
T = 85.67'
L = 170.64'
R = 765.00'
E = 4.78'
e = 8.0%
TR RUN = 0'
S.E. RUN = 256'
PC STA 10+69.23
PT STA 12+39.86
ATTAIN S.E. STA 8+83
TO STA 11+39
REMOVE S.E. THROUGH
STD. ENTR. TERMINAL

PR RAMP A Curve # 1
PI STA. 6+07.18
Δ = 10°09'35.85" Left
T = 133.34'
L = 265.99'
R = 1500.00'
E = 5.92'
e = 6.2%
TR RUN = 48'
S.E. RUN = 198'
PC STA 4+73.84
PT STA 7+39.82
ATTAIN S.E. STA 2+94
TO STA 5+40
REMOVE S.E. STA 6+85
TO STA 8+83 (0%)

PR RAMP B Curve # 2
PI STA. 10+79.32
Δ = 40°08'43.84" Right
T = 279.54'
L = 536.01'
R = 765.00'
E = 49.47'
e = 8.0%
TR RUN = 0'
S.E. RUN = 260'
PC STA 7+99.78
PT STA 13+35.80
ATTAIN S.E. THROUGH
STD. EXIT TREMINAL
REMOVE S.E. STA 12+84
TO STA 15+44 (0%)

PR RAMP B Curve # 3
PI STA. 19+29.60
Δ = 46°58'07.34" Left
T = 252.87'
L = 477.10'
R = 582.00'
E = 52.56'
e = 5.9%
TR RUN = 42'
S.E. RUN = 165'
PC STA 16+76.73
PT STA 21+53.83
ATTAIN S.E. STA 15+44
TO STA 17+09
REMOVE S.E. STA 20+99
TO STA 23+06

PR RAMP B Curve # 1
PI STA. 1+07.57
Δ = 2°04'19.99" Right
T = 107.57'
L = 215.12'
R = 5948.00'
E = 0.97'
e = 3.2%
PC STA 0+00.00
PT STA 2+15.12

PR TRUITT RD Curve # 2
PI STA. 58+41.42
Δ = 12°55'06.72" Left
T = 254.75'
L = 509.38'
R = 10000.00'
E = 3.24'
e = NC
PC STA 55+86.67
PT STA 60+96.05

PR RAMP C Curve # 1
PI STA. 04+51.09
Δ = 29°26'11" Right
T = 131.34
L = 256.88'
R = 500.00'
E = 16.96'
e = 8.0%
TR RUN = 0'
S.E. RUN = 222'
PC STA 3+19.75
PCC STA 5+76.63
ATTAIN S.E. STA 1+72
TO STA 3+94

PR RAMP C Curve # 2
PI STA. 13+17.17
Δ = 142°41'29" Right
T = 740.54
L = 622.61
R = 250.00'
E = 531.60'
e = 8.0%
TR RUN = 0'
PCC STA 5+76.63
PCC STA 11+99.24

PR RAMP C Curve # 3
PI STA. 12+69.48
Δ = 10°29'32" Right
T = 70.24
L = 140.09'
R = 765.00'
E = 3.22'
e = 8.0%
TR RUN = 0'
S.E. RUN = 256'
PCC STA 11+99.24
PT STA 13+39.33
REMOVE S.E. THROUGH
ENTR. TERMINAL

SUSAN VONK FAMILY
LIMITED PARTNERSHIP

SHEET NUMBER

ELEMENTS CONTROLLING DESIGN

1. DESIGN DESIGNATION FA ROUTE 318 (IL 29) FREEWAY 8700 (2032) 70 MPH
   TRUITT RD (MINOR ARTERIAL) 9200 (2032) 55 MPH
2. IL 29 IS THE PREFERENCE ROUTE
3. ANTICIPATED YEAR OF CONSTRUCTION 2012
4. TRAFFIC CONTROL TO BE STOP CONTROL FOR EXIT RAMP TRAFFIC IN CONSTRUCTION YEAR. TRAFFIC SIGNALS REQUIRED IN DESIGN YEAR. (WARRANT 1 IS MET)
5. DESIGN SPEEDS:
   - IL 29 - 70 MPH
   - TRUITT RD - 55 MPH
   - RAMP A - 50 MPH
   - RAMP B - 70 MPH (CURVE 1), 50 MPH (CURVE 2), 40 MPH (CURVE 3)
   - RAMP C - 40 MPH (CURVE 1), 30 MPH (CURVE 2), 50 MPH (CURVE 3)
   - RAMP D - 50 MPH
6. IL 29 IS A CLASS II TRUCK ROUTE.
7. DESIGN VEHICLE: WB-65

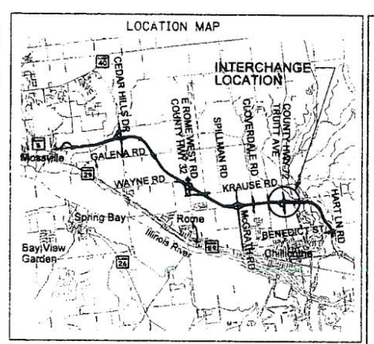
GENERAL NOTES

1. PROFILES ARE PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. TYPE M-4.06 CURB AND GUTTER TO BE USED ON CORNER ISLANDS
3. TYPE M-4.24 CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND
4. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT EXCEPT WHERE NOTED OTHERWISE.
5. IL 29 IS A RURAL FOUR-LANE FREEWAY.
6. ALL ENTRANCES AS SHOWN ARE IN COMPLIANCE WITH IDOT " POLICIES ON ACCESS TO STATE HIGHWAYS".
7. RAMP EXIT AND ENTRANCE TERMINALS COMPLY WITH IDOT BDE MANUAL DESIGN CRITERIA AND STANDARDS, EXCEPT AS INDICATED IN THE EXCEPTIONS TO POLICY.
8. PROPOSED ROW IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS.
9. INTERSECTION SIGHT DISTANCE FOR RAMP INTERSECTIONS COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE BDE MANUAL.
10. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE.
11. DESIGN EXCEPTIONS: NONE

TRAFFIC DATA

MOVEMENT	YEAR 2001 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY 2032	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB	10	1	10/10				900/9400	100	95
AD	0	0	21/20				N/A	20	30
AC	117	134	11/12				32/-7	155	125
BA	5	21	9/9				1200/352	65	95
BC	7	23	8/9				2900/835	210	215
BD	3	1	9/9				4400/24900	135	250
CD	2	11	18/18				1650/809	35	100
CA	101	161	17/10				4/43	105	230
CB	8	8	9/9				2025/3650	170	300
DC	11	5	16/17				945/1300	115	70
DB	0	0	9/11				N/A	150	145
DA	0	0	18/18				N/A	25	45
TOTAL A	233	317						470	620
TOTAL B	33	54						830	1100
TOTAL C	246	342						790	1040
TOTAL D	16	17						480	640

LOCATION MAP



INTERCHANGE DESIGN STUDY

143 - 319 P37

FA ROUTE 318 (IL 29) WITH CH ROUTE 19 (TRUITT RD)

SEC. NO. ____ PROJ. NO. HPD-0133 (012)

SCALE 1"=200' COUNTY PEORIA

SJN : P-94-009-01 REV. NO. ____

DESIGNED BY CH2MHILL DATE 11/07

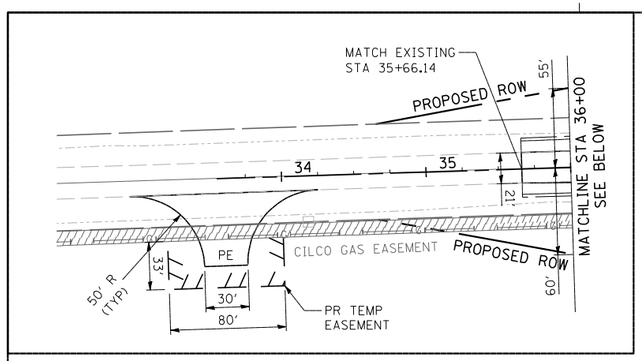
SATISFACTORY ____ DISTRICT GEOMETRICS ENGINEER DATE 12-12-07

SATISFACTORY ____ DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE 12/12/07

SATISFACTORY ____ DISTRICT OPERATIONS ENGINEER DATE 12/17/07

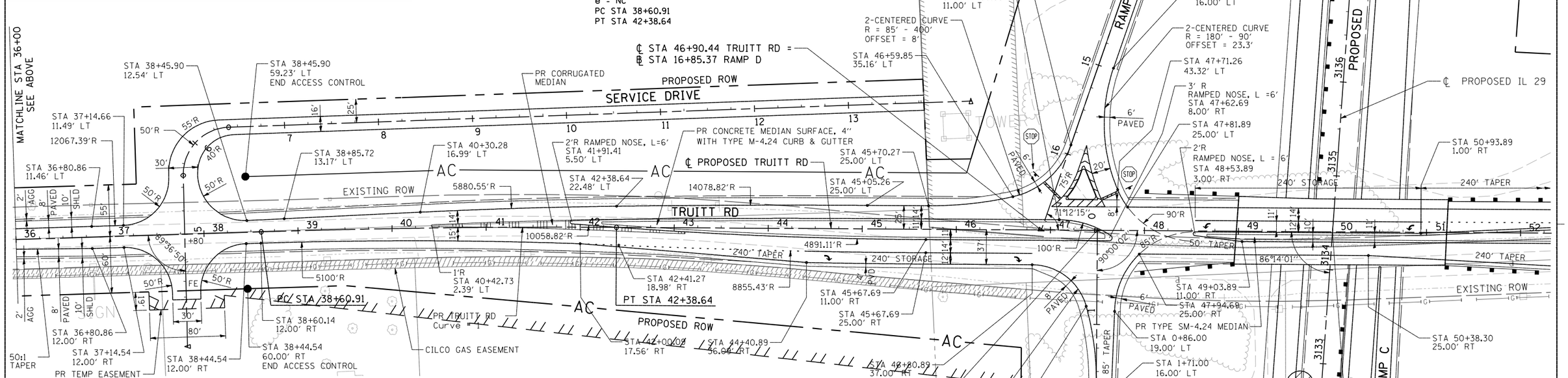
APPROVED ____ DISTRICT ENGINEER DATE 12/17/07

CADD FILE NAME : ...hom drawings\8912cr1.dgn PLOT SCALE: 1:1 SHEET 1 OF 12



		PHASE I	AMBER (Y+R)	PHASE II	AMBER (Y+R)	PHASE III	AMBER (Y+R)
GREEN TIME (sec)	AM	5	3	35	6	15	6
	PM	5	3	34	6	16	6

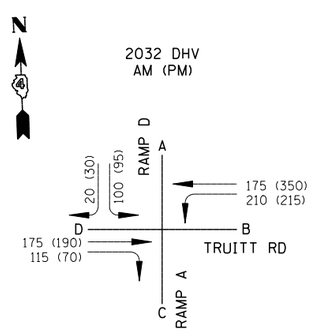
PR TRUITT RD Curve # 1
PI STA. 40+49.80
Δ = 2°09'51.28" Right
T = 188.89'
L = 377.73'
R = 10000.00'
E = 1.78'
e = NC
PC STA 38+60.91
PT STA 42+38.64



CAPACITY DESIGN STUDY (DESIGN YEAR)

3 PHASE — AREA OTHER — PEAK HOUR FACTOR 0.90
70 SEC. CYCLE — AVERAGE INTERSECTION DELAY — A.M. 9.2 SEC. — INTERSECTION LEVEL OF SERVICE — A.M. A
SIGNAL TYPE ACTUATED — PROGRAM USED HCS 2000, 4.1e — P.M. 9.3 SEC. — P.M. A

APPROACH		SOUTHBOUND (A)	WESTBOUND (B)		EASTBOUND (D)	
BUS STOP CONDITION		0	0	0	0	0
PARKING MANEUVER/HR.		0	0	0	0	0
PEDESTRIANS		0	0	0	0	0
ARRIVAL TYPE		3	3	4	3	3
LANE UTILIZATION FACTOR		-	-	-	-	-
BASE SATURATION FLOW		1900	1900	1900	1900	1900
D - DISTANCE (AM/PM)		103/105	86/91	73/152	93/105	26/16
LANE GROUP		LR	L	T	T	R
LANE WIDTHS		16'	12'	14'	14'	12'
GREEN TIME (SECONDS)	A.M.	15	43	43	35	56
	P.M.	16	42	42	34	56
G/C RATIO	A.M.	0.21	0.61	0.61	0.50	0.80
	P.M.	0.23	0.60	0.60	0.49	0.80
LANE GROUP DELAY (SECONDS)	A.M.	25.7	8.0	3.5	9.9	1.6
	P.M.	24.8	8.8	5.0	10.6	1.5
V/C RATIO	A.M.	0.34	0.37	0.17	0.21	0.12
	P.M.	0.34	0.39	0.35	0.24	0.07
LEVEL OF SERVICE	A.M.	C	A	A	A	A
	P.M.	C	A	A	B	A
2032 30TH MAX. HOUR TRAFFIC	A.M.	120	210	175	175	115
	P.M.	125	215	350	190	70
2032 8TH MAX. HOURLY TRAFFIC	A.M.	65	215		160	
	P.M.	70	310		145	



PR RAMP A Curve # 1
PI STA. 6+07.18
Δ = 10°09'35.85" Left
T = 133.34'
L = 265.99'
R = 1500.00'
E = 5.92'
e = 6.2%
TR RUN = 48'
S.E. RUN = 198'
PC STA 4+73.84
PT STA 7+39.82
ATTAIN S.E. STA 2+94
TO STA 5+40
REMOVE S.E. STA 6+85
TO STA 8+83 (0%)

INTERSECTION DESIGN STUDY

FA ROUTE 318 (IL 29)
CH ROUTE 19 WITH (TRUITT RD)

SEC. NO. _____
SCALE 1"=50' — COUNTY PEORIA
SJN : P-94-009-01 — PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 2 OF 12

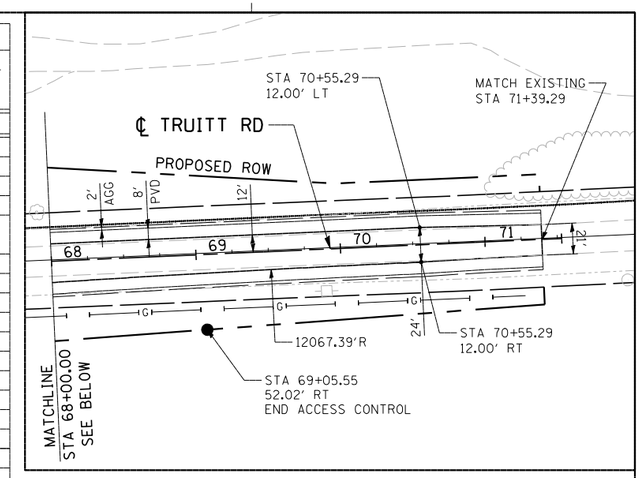
BDE-9808

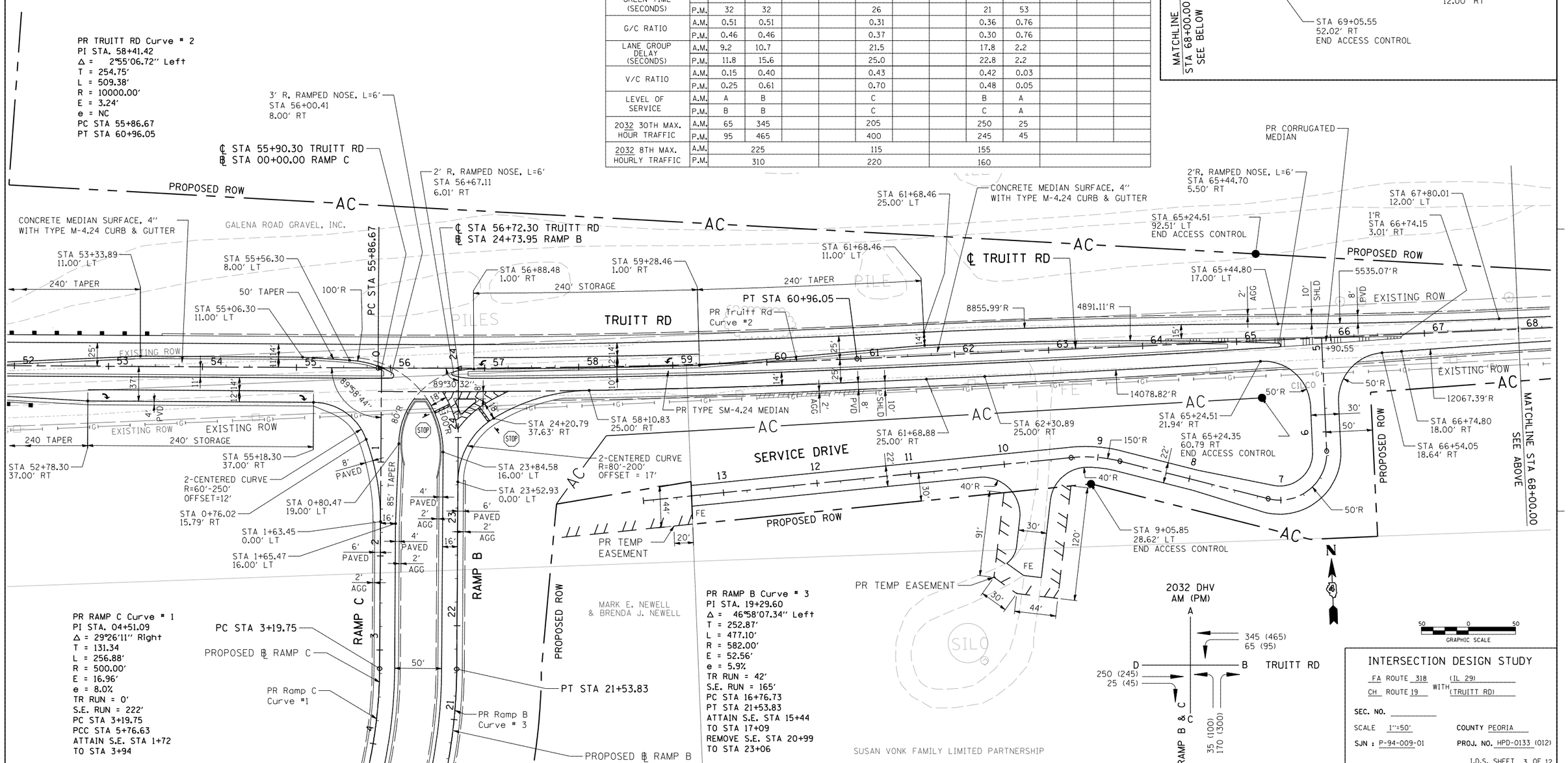
		PHASE I	AMBER (Y+R)	PHASE II	AMBER (Y+R)	PHASE III	AMBER (Y+R)
GREEN TIME (sec)	AM	8	3	25	6	22	6
	PM	8	3	21	6	26	6

CAPACITY DESIGN STUDY (DESIGN YEAR)

3 PHASE — AREA OTHER — PEAK HOUR FACTOR 0.90
70 SEC. CYCLE — AVERAGE INTERSECTION DELAY — A.M. 14.8 SEC. — INTERSECTION LEVEL OF SERVICE — A.M. B
SIGNAL TYPE ACTUATED — PROGRAM USED HCS 2000, 4.1e — P.M. 19.2 SEC. — P.M. B

APPROACH		WESTBOUND (B)			NORTHBOUND (C)			EASTBOUND (D)				
BUS STOP CONDITION		0	0		0			0	0			
PARKING MANEUVER/HR.		0	0		0			0	0			
PEDESTRIANS		0	0		0			0	0			
ARRIVAL TYPE		3	3		3			4	3			
LANE UTILIZATION FACTOR		-	-		-			-	-			
BASE SATURATION FLOW		1900	1900		1900			1900	1900			
D - DISTANCE (AM/PM)		34/54	179/266		153/272			170/182	7/12			
LANE GROUP		L	T		LR			T	R			
LANE WIDTHS		12′	14′		16′			14′	12′			
GREEN TIME (SECONDS)	A.M.	36	36		22			25	53			
	P.M.	32	32		26			21	53			
G/C RATIO	A.M.	0.51	0.51		0.31			0.36	0.76			
	P.M.	0.46	0.46		0.37			0.30	0.76			
LANE GROUP DELAY (SECONDS)	A.M.	9.2	10.7		21.5			17.8	2.2			
	P.M.	11.8	15.6		25.0			22.8	2.2			
V/C RATIO	A.M.	0.15	0.40		0.43			0.42	0.03			
	P.M.	0.25	0.61		0.70			0.48	0.05			
LEVEL OF SERVICE	A.M.	A	B		C			B	A			
	P.M.	B	B		C			C	A			
2032 30TH MAX. HOUR TRAFFIC	A.M.	65	345		205			250	25			
	P.M.	95	465		400			245	45			
2032 8TH MAX. HOURLY TRAFFIC	A.M.	225			115			155				
	P.M.	310			220			160				





INTERSECTION DESIGN STUDY

FA ROUTE 318 (IL 29) WITH
CH ROUTE 19 (TRUITT RD)

SEC. NO. _____

SCALE 1″=50′ — COUNTY PEORIA

SJN : P-94-009-01 — PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 3 OF 12

BDE-9908

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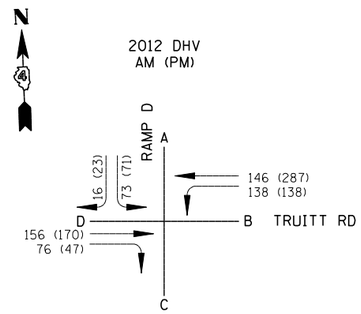
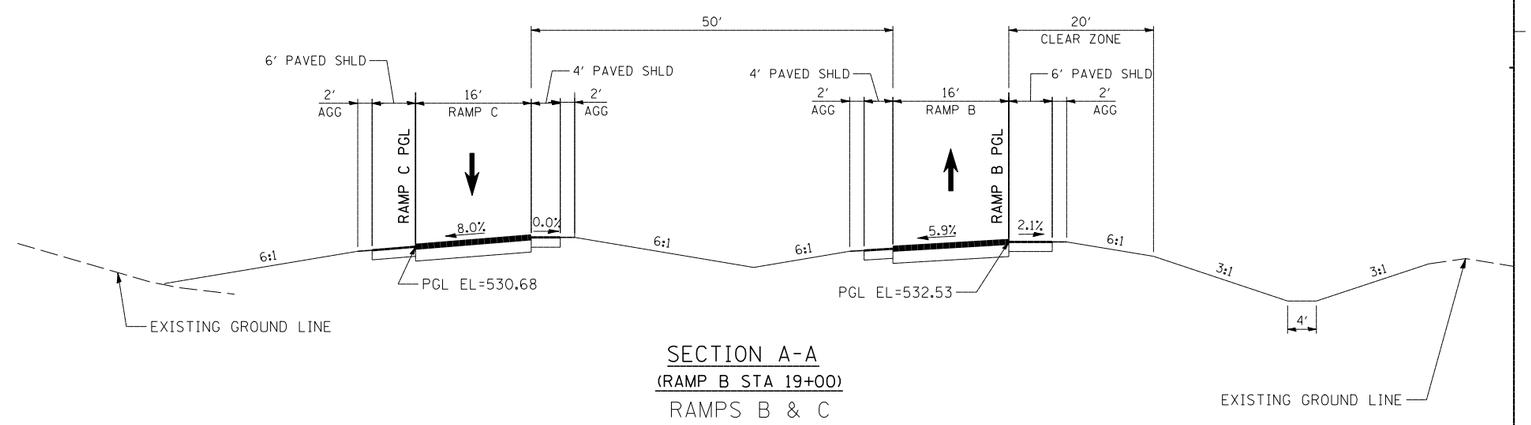
21-APR-2009

CAPACITY DESIGN STUDY - WEST RAMP INTERSECTION (CONSTRUCTION YEAR)

N/A PHASE — AREA OTHER — PEAK HOUR FACTOR 0.90
N/A SEC. CYCLE — AVERAGE INTERSECTION DELAY — A.M. - SEC. — INTERSECTION LEVEL OF SERVICE — A.M. -
SIGNAL TYPE 2-WAY STOP — PROGRAM USED HCS 2000, 4.1d — P.M. - SEC. — P.M. -

APPROACH		SOUTHBOUND (A)			WESTBOUND (B)			NORTHBOUND (D)			EASTBOUND (D)	
BUS STOP CONDITION			N/A		N/A	N/A					N/A	N/A
PARKING MANEUVER/HR.			N/A		N/A	N/A					N/A	N/A
PEDESTRIANS			N/A		N/A	N/A					N/A	N/A
ARRIVAL TYPE			N/A		N/A	N/A					N/A	N/A
LANE UTILIZATION FACTOR			N/A		N/A	N/A					N/A	N/A
BASE SATURATION FLOW			-		-	1700					1700	-
D - DISTANCE (AM/PM)			-		240′	-					-	240
LANE GROUP			LR		L	T					T	R
LANE WIDTHS			16′		12′	14′					14′	12′
GREEN TIME (SECONDS)	A.M.		N/A		N/A	N/A					N/A	N/A
	P.M.		N/A		N/A	N/A					N/A	N/A
G/C RATIO	A.M.		N/A		N/A	N/A					N/A	N/A
	P.M.		N/A		N/A	N/A					N/A	N/A
LANE GROUP DELAY (SECONDS)	A.M.		14.7		8.2	-					-	-
	P.M.		16.6		8.2	-					-	-
V/C RATIO	A.M.		0.21		0.12	-					-	-
	P.M.		0.25		0.12	-					-	-
LEVEL OF SERVICE	A.M.		B		A	-					-	-
	P.M.		C		A	-					-	-
2012 30TH MAX. HOUR TRAFFIC	A.M.		89		138	146					156	76
	P.M.		94		138	287					170	47
2012 8TH MAX. HOURLY TRAFFIC	A.M.		50			155					130	
	P.M.		55			235					120	



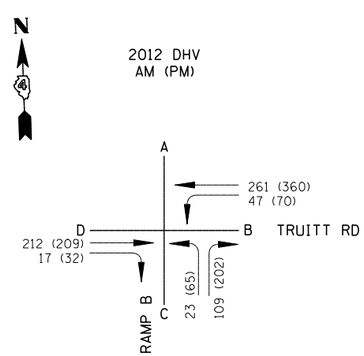


SECTION A-A
(RAMP B STA 19+00)
RAMPS B & C

CAPACITY DESIGN STUDY - EAST RAMP INTERSECTION (CONSTRUCTION YEAR)

N/A PHASE — AREA OTHER — PEAK HOUR FACTOR 0.90
N/A SEC. CYCLE — AVERAGE INTERSECTION DELAY — A.M. - SEC. — INTERSECTION LEVEL OF SERVICE — A.M. -
SIGNAL TYPE 2-WAY STOP — PROGRAM USED HCS 2000, 4.1d — P.M. - SEC. — P.M. -

APPROACH		SOUTHBOUND (A)			WESTBOUND (B)			NORTHBOUND (D)			EASTBOUND (D)	
BUS STOP CONDITION					N/A	N/A		N/A			N/A	N/A
PARKING MANEUVER/HR.					N/A	N/A		N/A			N/A	N/A
PEDESTRIANS					N/A	N/A		N/A			N/A	N/A
ARRIVAL TYPE					N/A	N/A		N/A			N/A	N/A
LANE UTILIZATION FACTOR					N/A	N/A		N/A			N/A	N/A
BASE SATURATION FLOW					-	1700		-			1700	-
D - DISTANCE (AM/PM)					240′	-					-	240
LANE GROUP					L	T		LR			T	R
LANE WIDTHS					12′	14′		16′			14′	12′
GREEN TIME (SECONDS)	A.M.				N/A	N/A		N/A			N/A	N/A
	P.M.				N/A	N/A		N/A			N/A	N/A
G/C RATIO	A.M.				N/A	N/A		N/A			N/A	N/A
	P.M.				N/A	N/A		N/A			N/A	N/A
LANE GROUP DELAY (SECONDS)	A.M.				7.9	-		11.2			-	-
	P.M.				8.0	-		14.9			-	-
V/C RATIO	A.M.				0.04	-		0.20			-	-
	P.M.				0.06	-		0.45			-	-
LEVEL OF SERVICE	A.M.				A	-		B			-	-
	P.M.				A	-		B			-	-
2012 30TH MAX. HOUR TRAFFIC	A.M.				47	261		132			212	17
	P.M.				70	360		267			209	32
2012 8TH MAX. HOURLY TRAFFIC	A.M.					170		75			125	
	P.M.					240		150			135	



INTERSECTION DESIGN STUDY

FA ROUTE 318 (IL 29)
WITH
CH ROUTE 19 (TRUITT RD)

SEC. NO. _____

SCALE NONE — COUNTY PEORIA

SJN : P-94-009-01 — PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 4 OF 12

BDE-9808

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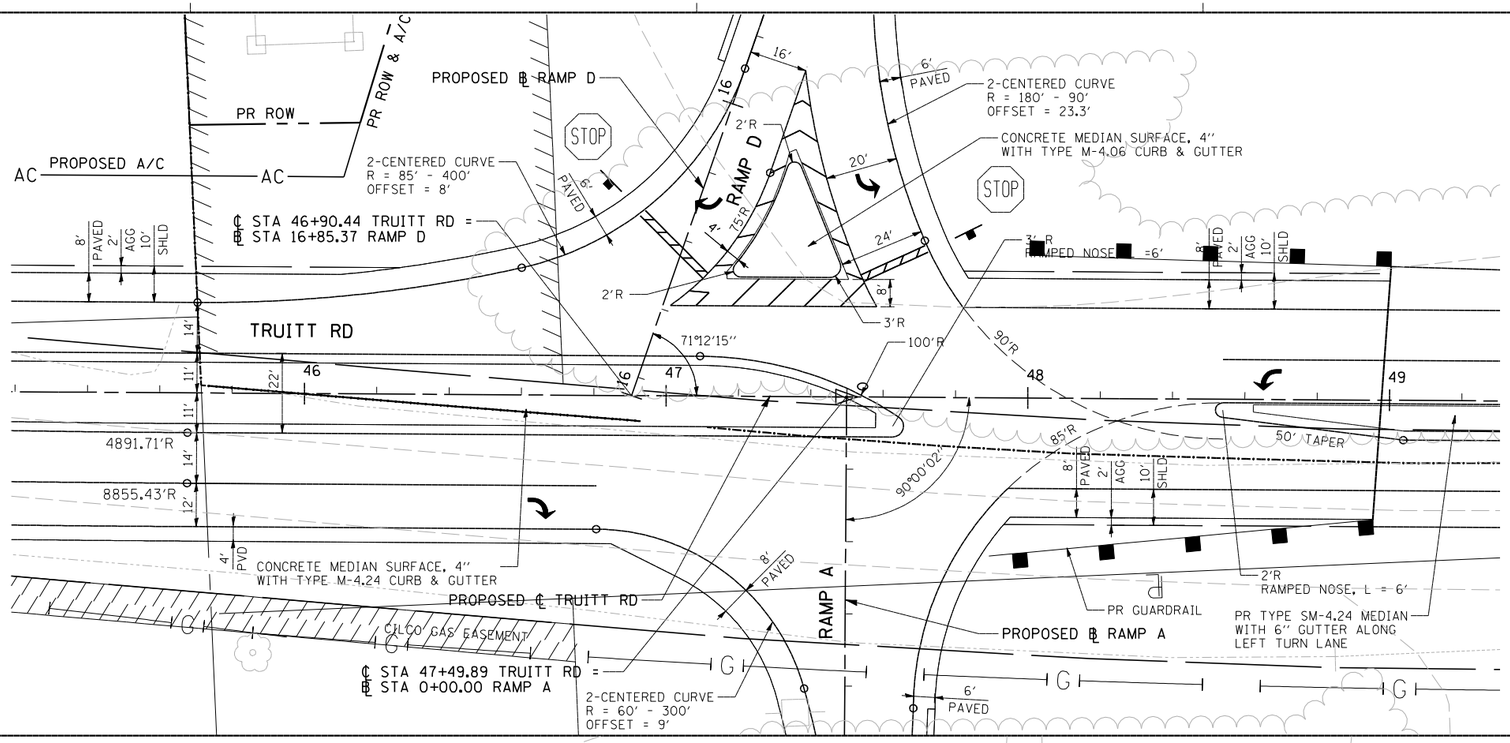
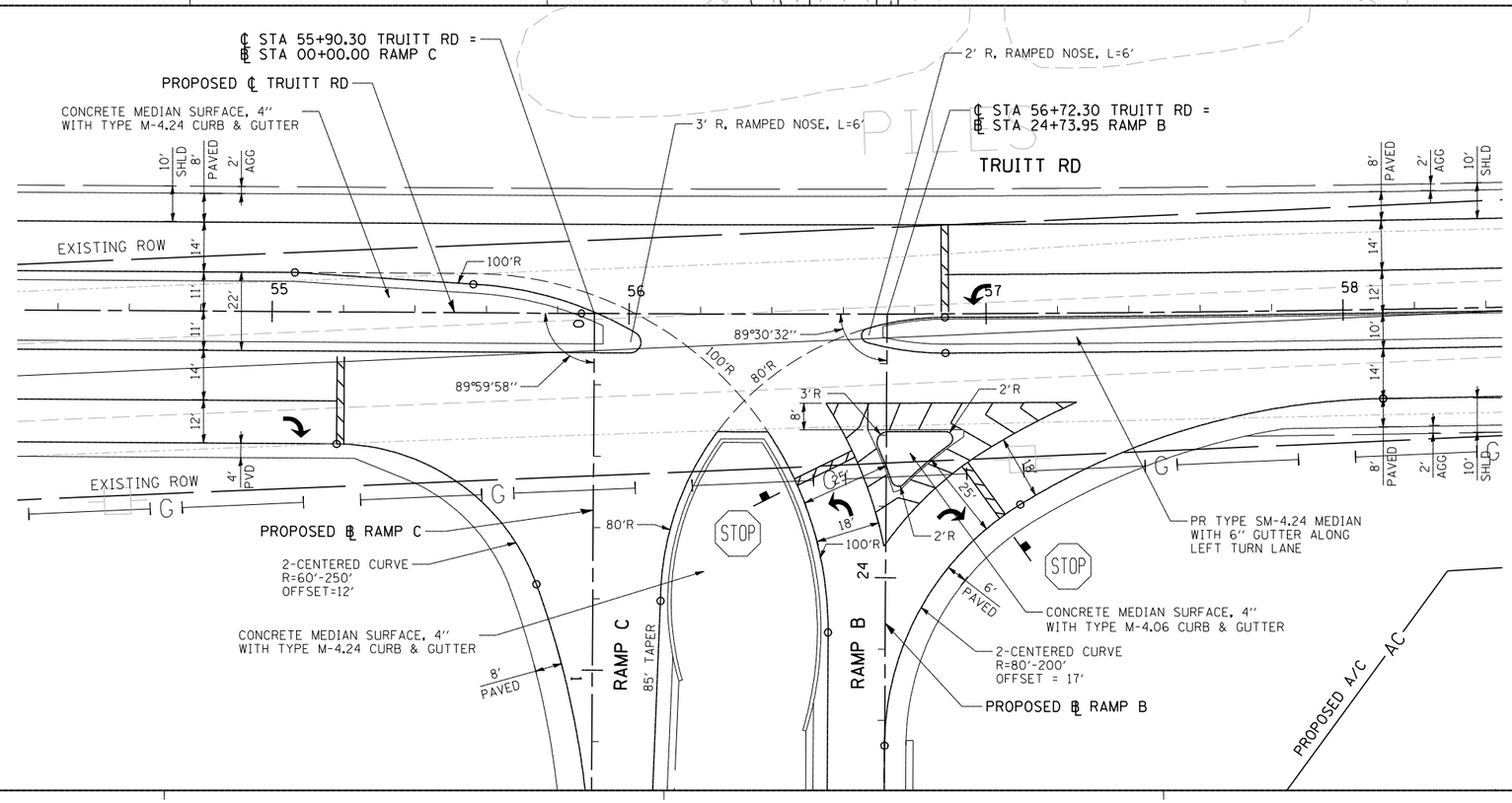
ISLAND DETAIL
TRUITT RD AT RAMPS A & D



ISLAND DETAIL
TRUITT RD AT RAMPS B & C



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INTERSECTION DESIGN STUDY

FA ROUTE 318 (IL 29)
CH ROUTE 19 WITH (TRUITT RD)

SEC. NO. _____

SCALE 1"=20' COUNTY PEORIA

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 5 OF 12

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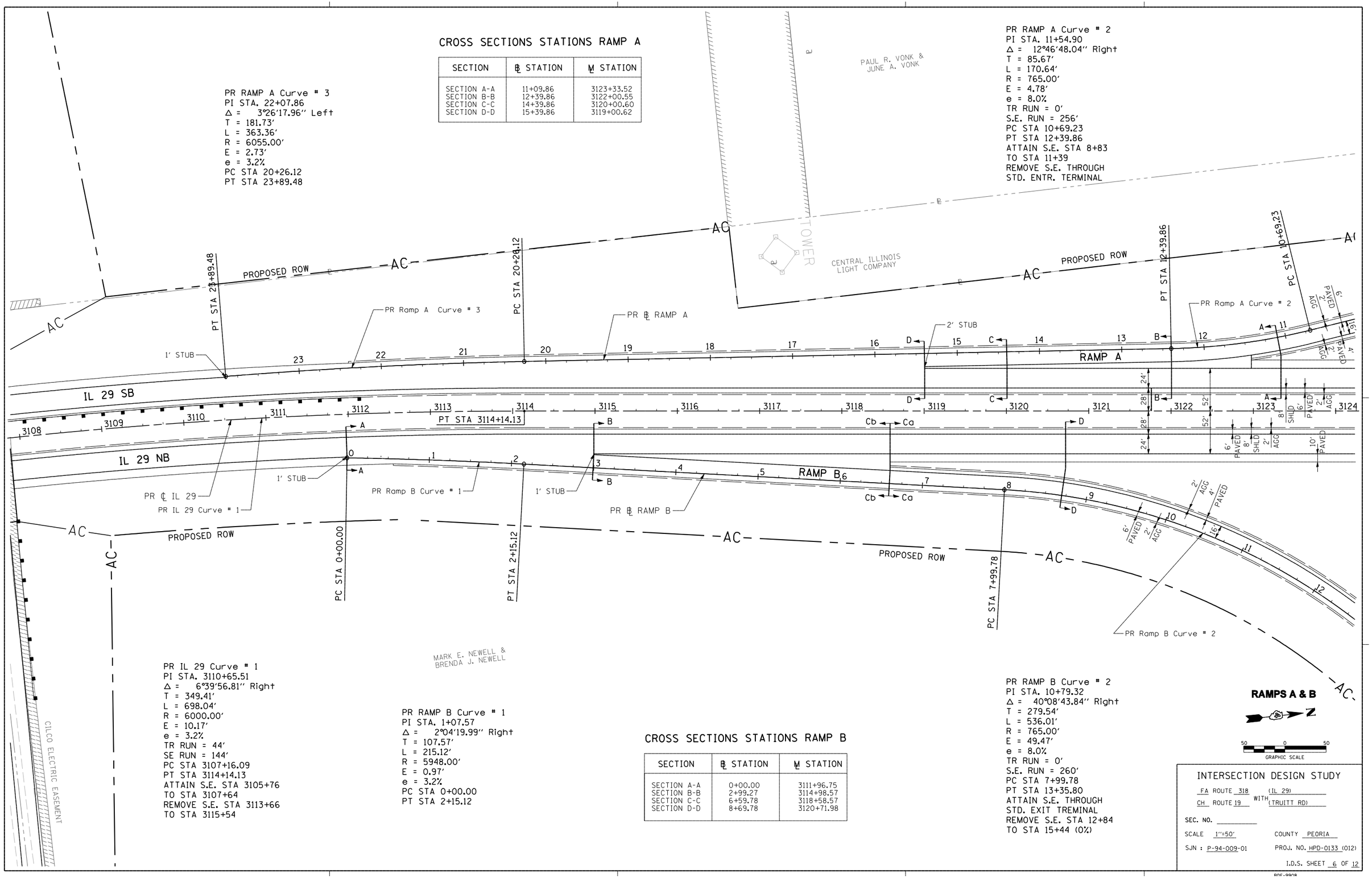

CROSS SECTIONS STATIONS RAMP A

SECTION	℄ STATION	M STATION
SECTION A-A	11+09.86	3123+33.52
SECTION B-B	12+39.86	3122+00.55
SECTION C-C	14+39.86	3120+00.60
SECTION D-D	15+39.86	3119+00.62

PR IL 29 Curve # 1
PI STA. 3110+65.51
Δ = 6°39'56.81" Right
T = 349.41'
L = 698.04'
R = 6000.00'
E = 10.17'
e = 3.2%
TR RUN = 44'
SE RUN = 144'
PC STA 3107+16.09
PT STA 3114+14.13
ATTAIN S.E. STA 3105+76
TO STA 3107+64
REMOVE S.E. STA 3113+66
TO STA 3115+54

PR RAMP B Curve # 1
PI STA. 1+07.57
Δ = 2°04'19.99" Right
T = 107.57'
L = 215.12'
R = 5948.00'
E = 0.97'
e = 3.2%
PC STA 0+00.00
PT STA 2+15.12

CROSS SECTIONS STATIONS RAMP B

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3111+96.75
SECTION B-B	2+99.27	3114+98.57
SECTION C-C	6+59.78	3118+58.57
SECTION D-D	8+69.78	3120+71.98

PR RAMP B Curve # 2
PI STA. 10+79.32
Δ = 40°08'43.84" Right
T = 279.54'
L = 536.01'
R = 765.00'
E = 49.47'
e = 8.0%
TR RUN = 0'
S.E. RUN = 260'
PC STA 7+99.78
PT STA 13+35.80
ATTAIN S.E. THROUGH
STD. EXIT TREMINAL
REMOVE S.E. STA 12+84
TO STA 15+44 (0%)

INTERSECTION DESIGN STUDY

FA ROUTE 318 (IL 29)
WITH
CH ROUTE 19 (TRUITT RD)

SEC. NO. _____

SCALE 1"=50' COUNTY PEORIA

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 6 OF 12

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•DATE-TIME•
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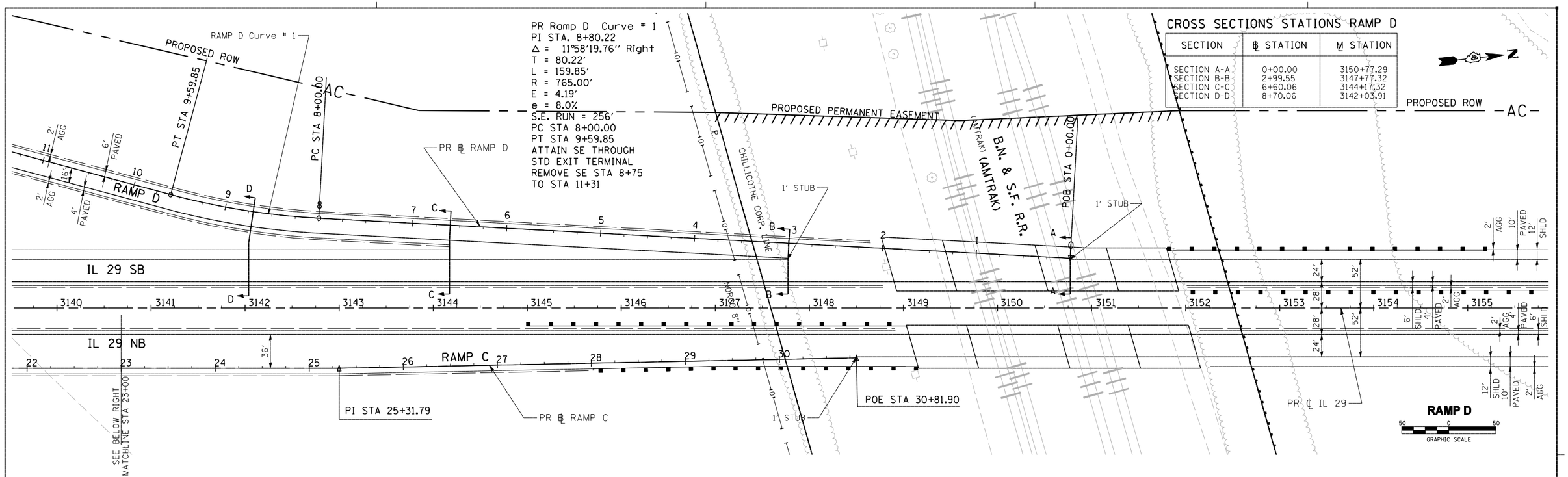
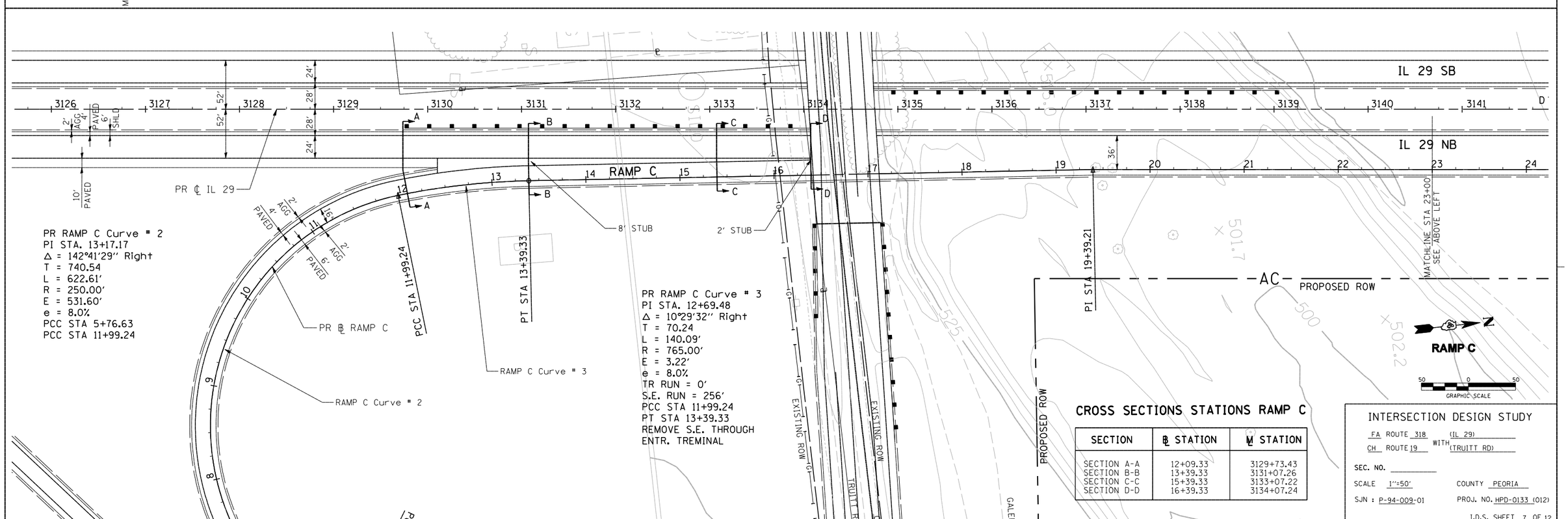
21-APR-2009



PR Ramp D Curve # 1
PI STA. 8+80.22
Δ = 11°58'19.76'' Right
T = 80.22'
L = 159.85'
R = 765.00'
E = 4.19'
e = 8.0%
S.E. RUN = 256'
PC STA 8+00.00
PT STA 9+59.85
ATTAIN SE THROUGH
STD EXIT TERMINAL
REMOVE SE STA 8+75
TO STA 11+31

CROSS SECTIONS STATIONS RAMP D

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3150+77.29
SECTION B-B	2+99.55	3147+77.32
SECTION C-C	6+60.06	3144+17.32
SECTION D-D	8+70.06	3142+03.91



PR RAMP C Curve # 2
PI STA. 13+17.17
Δ = 142°41'29'' Right
T = 740.54
L = 622.61'
R = 250.00'
E = 531.60'
e = 8.0%
PCC STA 5+76.63
PCC STA 11+99.24

PR RAMP C Curve # 3
PI STA. 12+69.48
Δ = 10°29'32'' Right
T = 70.24
L = 140.09'
R = 765.00'
E = 3.22'
e = 8.0%
TR RUN = 0'
S.E. RUN = 256'
PCC STA 11+99.24
PT STA 13+39.33
REMOVE S.E. THROUGH
ENTR. TREMINAL

CROSS SECTIONS STATIONS RAMP C

SECTION	℄ STATION	M STATION
SECTION A-A	12+09.33	3129+73.43
SECTION B-B	13+39.33	3131+07.26
SECTION C-C	15+39.33	3133+07.22
SECTION D-D	16+39.33	3134+07.24

INTERSECTION DESIGN STUDY

FA ROUTE 318 (IL 29) WITH
CH ROUTE 19 (TRUITT RD)

SEC. NO. _____

SCALE 1"=50' COUNTY PEORIA

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 7 OF 12

BDE-9908

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•DATE-TIME•
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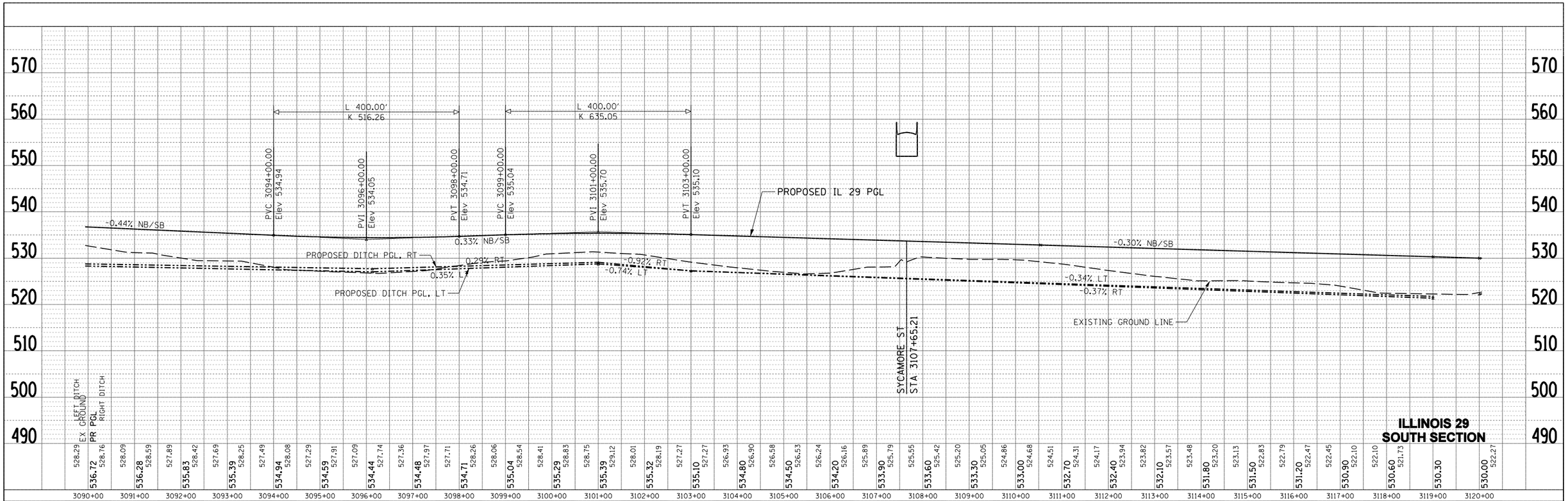
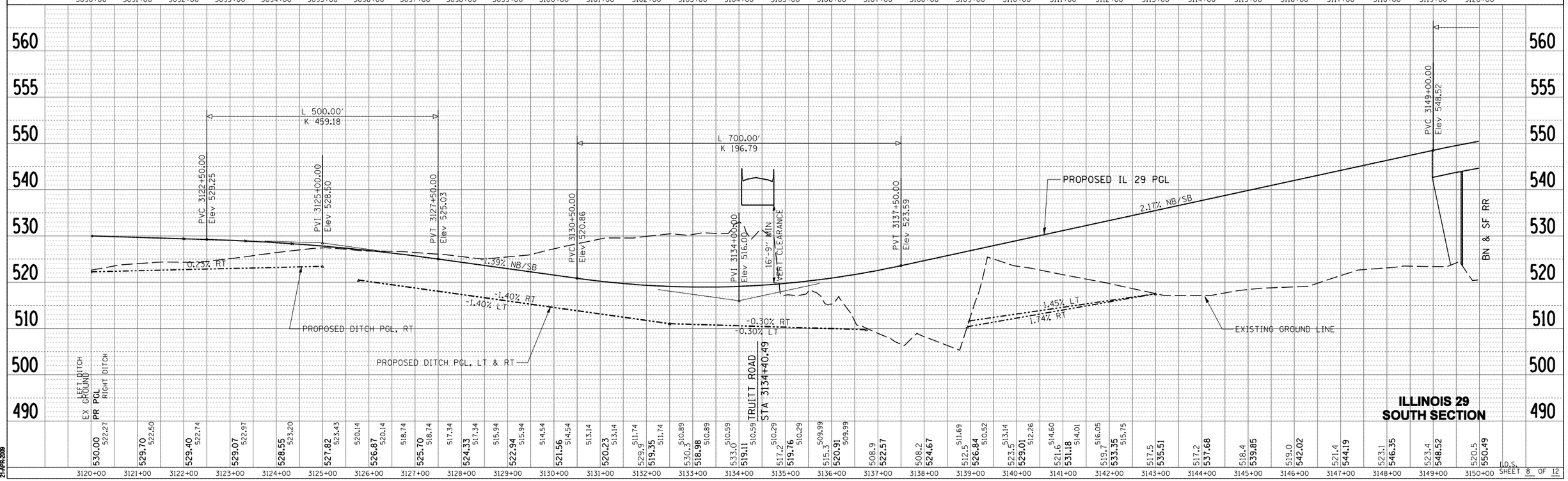
27-APR-2009





PLAN

BY	DATE

SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME

NOTE BOOK
NO.

PROFILE

BY	DATE

SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CH'KD

NOTE BOOK
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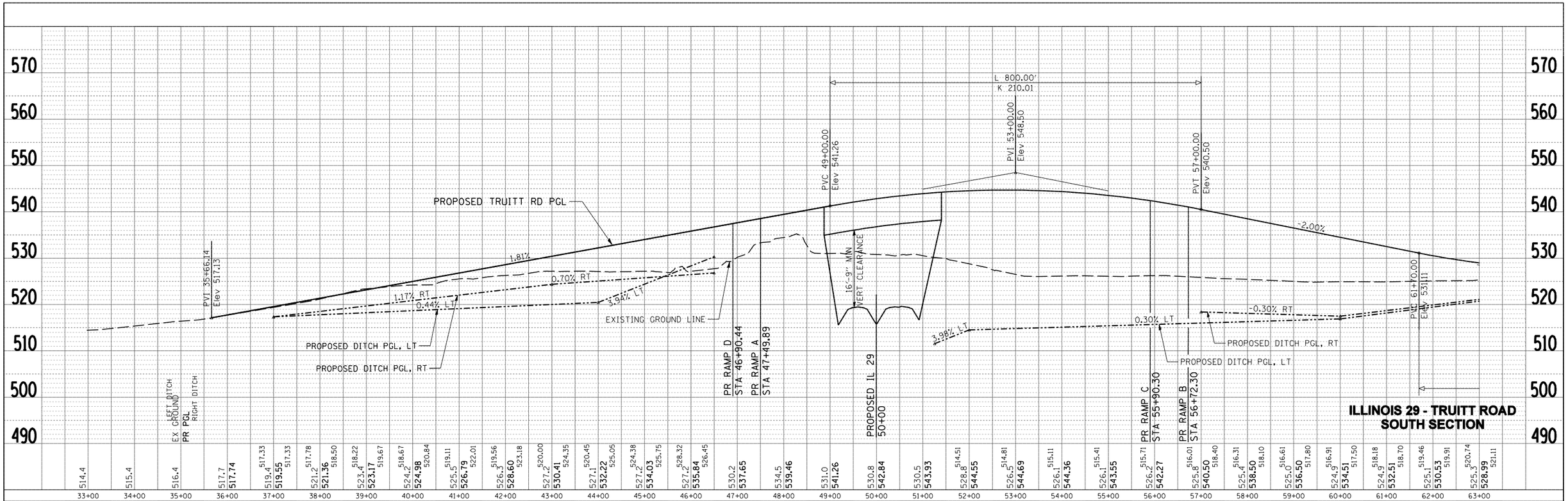

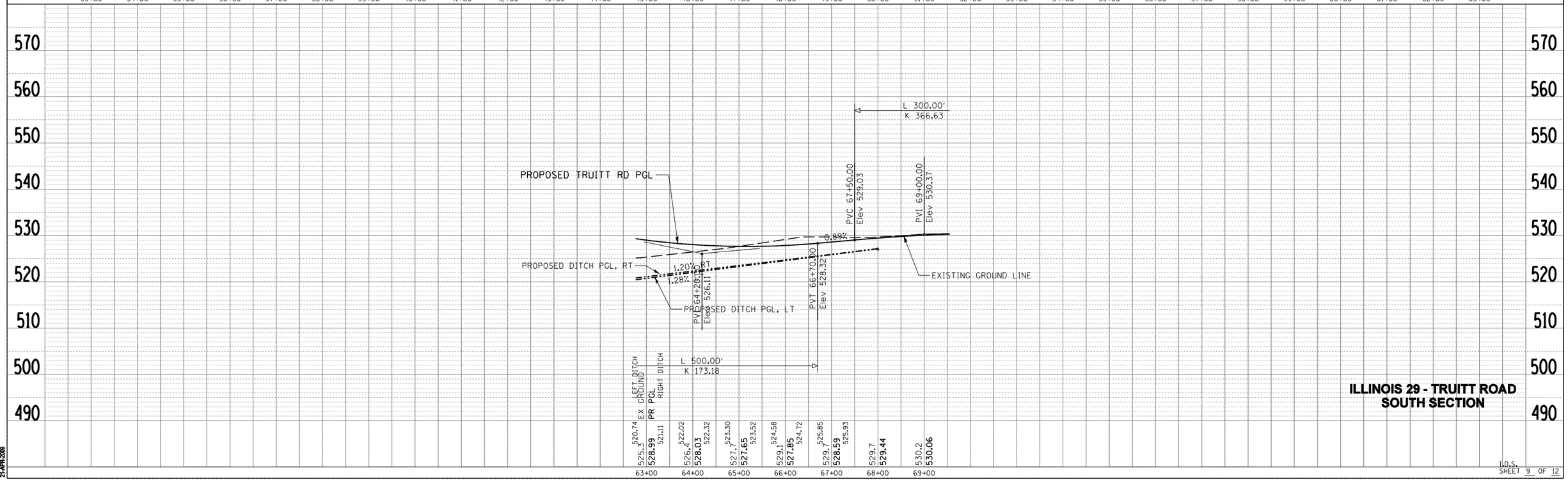

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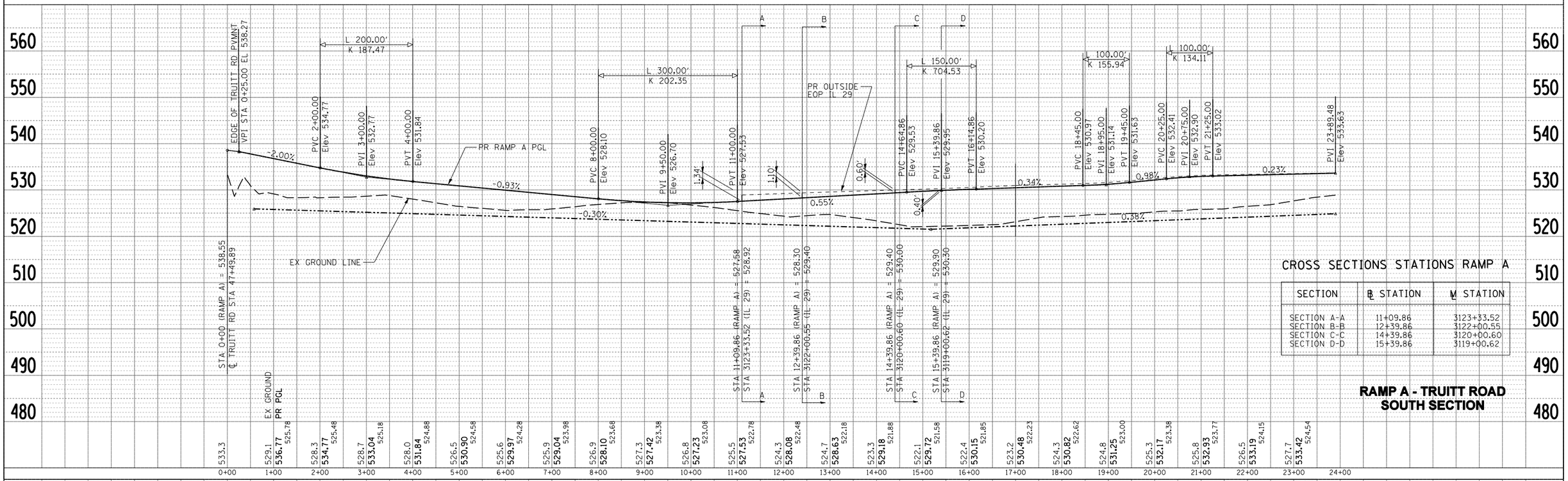
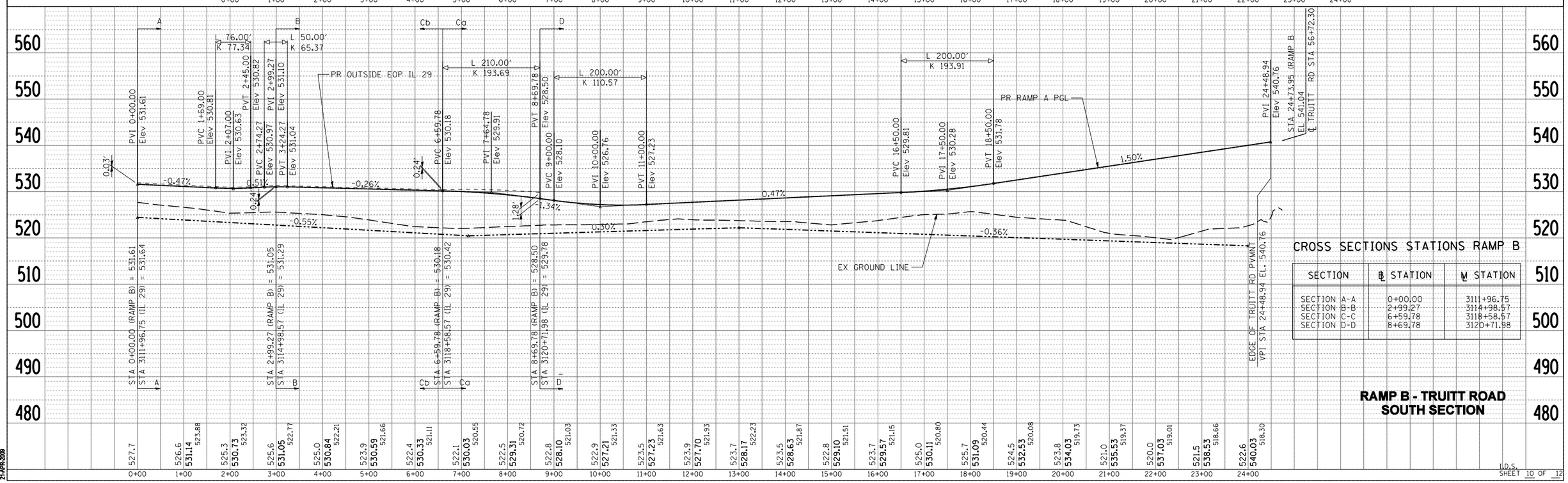


CROSS SECTIONS STATIONS RAMP A

SECTION	℄ STATION	M STATION
SECTION A-A	11+09.86	3123+33.52
SECTION B-B	12+39.86	3122+00.55
SECTION C-C	14+39.86	3120+00.60
SECTION D-D	15+39.86	3119+00.62

RAMP A - TRUITT ROAD SOUTH SECTION



CROSS SECTIONS STATIONS RAMP B

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3111+96.75
SECTION B-B	2+99.27	3114+98.57
SECTION C-C	6+59.78	3118+58.57
SECTION D-D	8+69.78	3120+71.98

RAMP B - TRUITT ROAD SOUTH SECTION

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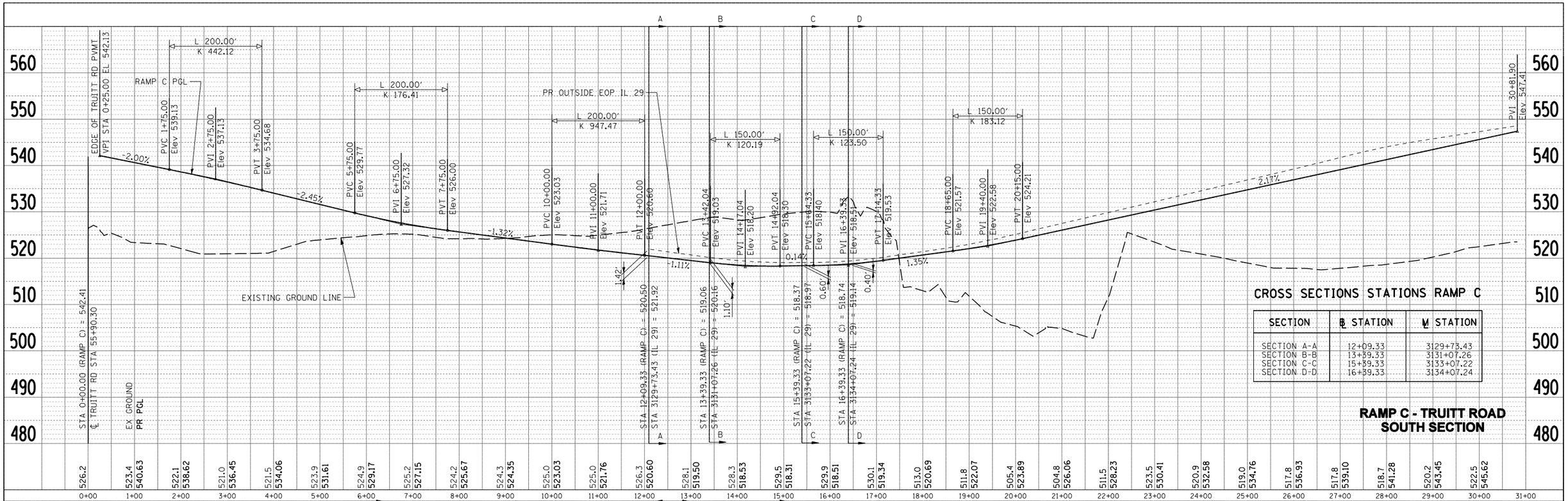
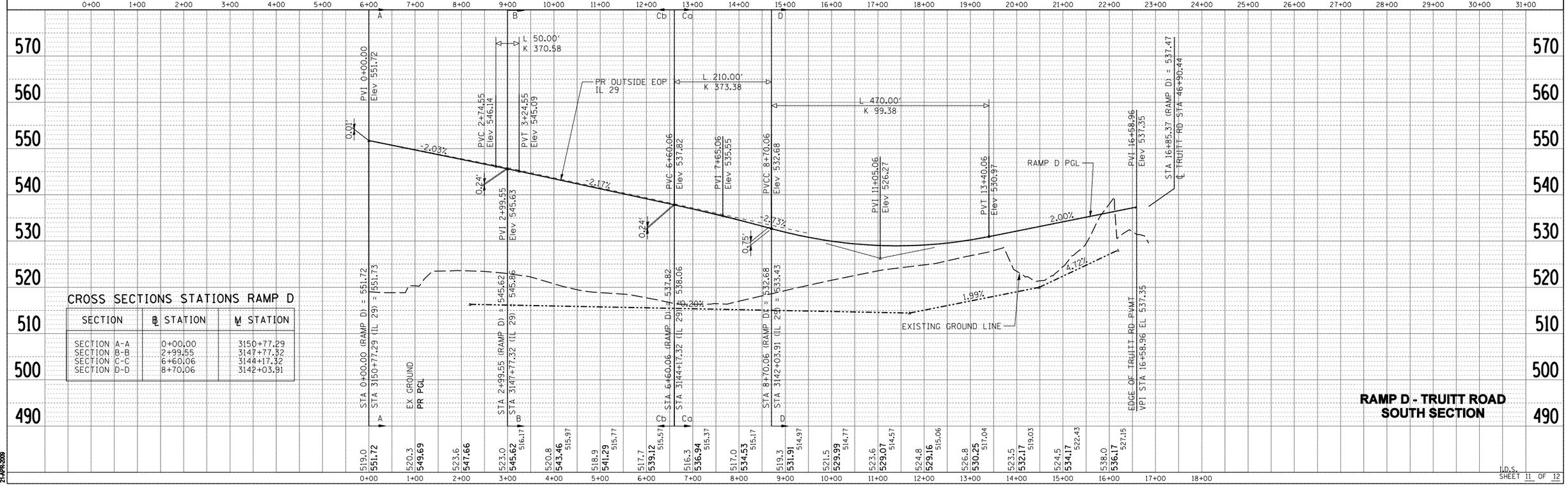


CROSS SECTIONS STATIONS RAMP C

SECTION	℄ STATION	M STATION
SECTION A-A	12+09.33	3129+73.43
SECTION B-B	13+39.33	3131+07.26
SECTION C-C	15+39.33	3133+07.22
SECTION D-D	16+39.33	3134+07.24

RAMP C - TRUITT ROAD SOUTH SECTION



CROSS SECTIONS STATIONS RAMP D

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3150+77.29
SECTION B-B	2+99.55	3147+77.32
SECTION C-C	6+60.06	3144+17.32
SECTION D-D	8+70.06	3142+03.91

RAMP D - TRUITT ROAD SOUTH SECTION

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GRADES CHECKED
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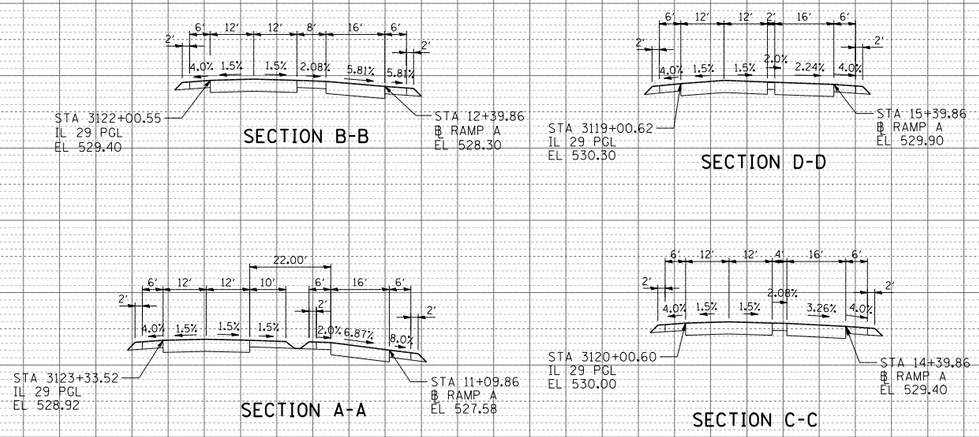
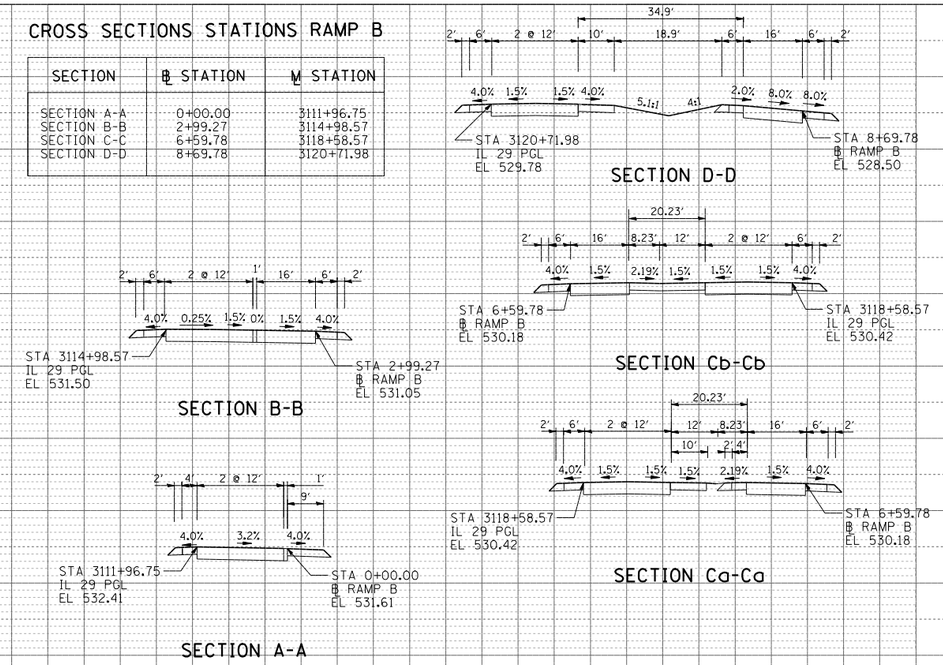
CROSS SECTIONS STATIONS RAMP A

SECTION	℄ STATION	M STATION
SECTION A-A	11+09.86	3123+33.52
SECTION B-B	12+39.86	3122+00.55
SECTION C-C	14+39.86	3120+00.60
SECTION D-D	15+39.86	3119+00.62



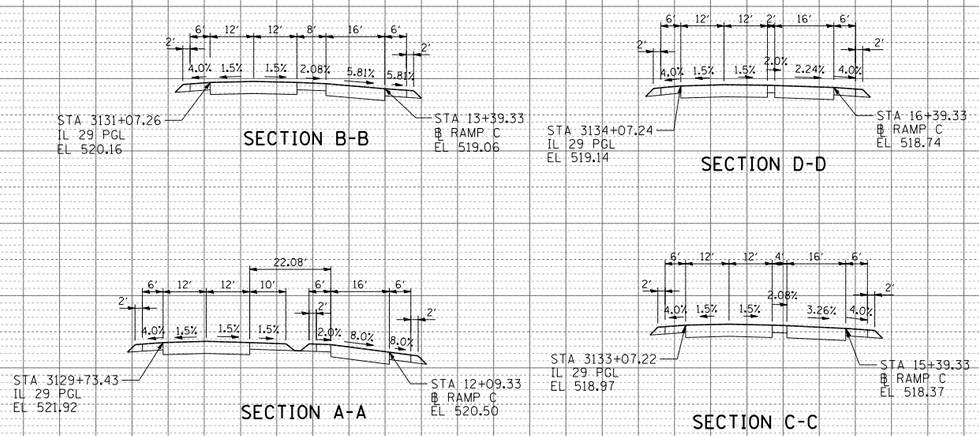
CROSS SECTIONS STATIONS RAMP B

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3111+96.75
SECTION B-B	2+99.27	3114+98.57
SECTION C-C	6+59.78	3118+58.57
SECTION D-D	8+69.78	3120+71.98



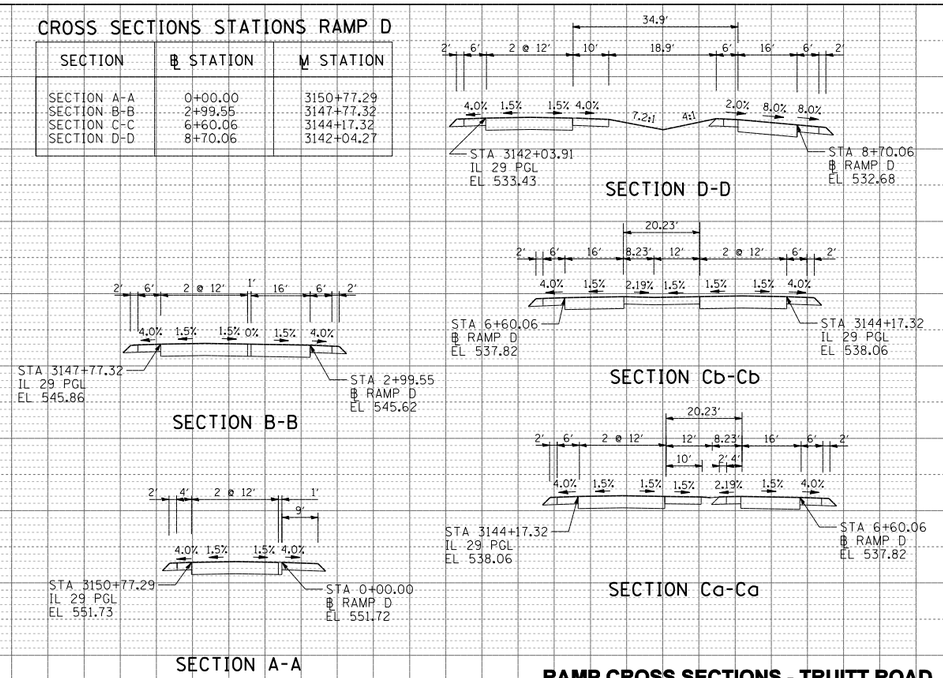
CROSS SECTIONS STATIONS RAMP C

SECTION	℄ STATION	M STATION
SECTION A-A	12+09.33	3129+73.43
SECTION B-B	13+39.33	3131+07.26
SECTION C-C	15+39.33	3133+07.22
SECTION D-D	16+39.33	3134+07.24



CROSS SECTIONS STATIONS RAMP D

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3150+77.29
SECTION B-B	2+99.55	3147+77.32
SECTION C-C	6+60.06	3144+17.32
SECTION D-D	8+70.06	3142+04.27



RAMP CROSS SECTIONS - TRUITT ROAD SOUTH SECTION

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SHEET 12 OF 12

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VOLUME III
APPENDIX E2 – INTERCHANGE /INTERSECTION DESIGN STUDIES

INDEX OF SHEETS

CENTRAL SECTION – CHILLICOTHE, IL TO SOUTH OF HENRY, IL

6. INTERSECTION DESIGN STUDY – IL 29 CONNECTOR /MOFFIT STREET INTERSECTION (2 SHEETS)
7. INTERSECTION DESIGN STUDY – IL 29 CONNECTOR /CHILLICOTHE RECREATION AREA ENTRANCE INTERSECTION (2 SHEETS)
8. INTERCHANGE DESIGN STUDY – NORTH CHILLICOTHE IL29 /IL 29 CONNECTOR INTERCHANGE AREA (20 SHEETS)
9. INTERSECTION DESIGN STUDY – IL 29 /CREW LANE CONNECTOR /REST AREA SERVICE DRIVE INTERSECTION (3 SHEETS)
10. INTERSECTION DESIGN STUDY – IL 29 /HOPEWELL DRIVE INTERSECTION (2 SHEETS)
11. INTERSECTION DESIGN STUDY – IL 29 /BARVILLE ROAD INTERSECTION (2 SHEETS)
12. INTERCHANGE DESIGN STUDY – IL 29 /SPARLAND INTERCHANGE AREA (19 SHEETS)
13. INTERSECTION DESIGN STUDY – IL 29 /1100E CONNECTOR INTERSECTION (3 SHEETS)
14. INTERSECTION DESIGN STUDY – IL 29 /CAMP GROVE ROAD (CH 8) INTERSECTION (2 SHEETS)
15. INTERSECTION DESIGN STUDY – IL 29 /SBI 29 INTERSECTION (3 SHEETS)

June 2010
Catalog No. 032469-00P

Illinois Department of Transportation

CH2MHILL

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16-APR-2010

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERSECTION DESIGN STUDY
IL 29 CONNECTOR /MOFFIT STREET INTERSECTION

PREPARED BY : CH2MHILL

AUGUST 2007

June 2010
Catalog No. 032469-00P

Illinois Department of Transportation
CH2MHILL

mfox
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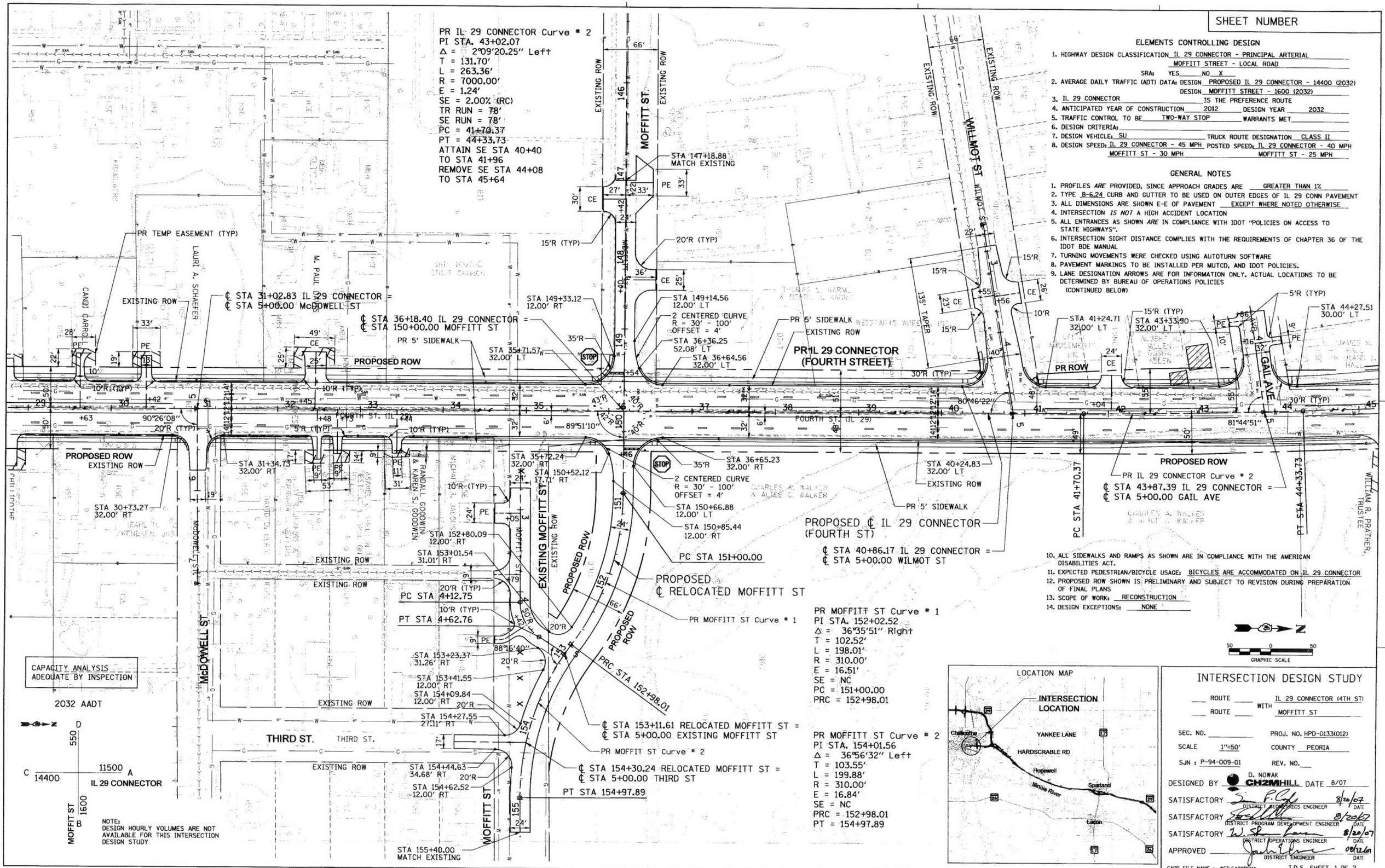
17-MAR-2009

SHEET NUMBER

PR IL 29 CONNECTOR Curve # 2
PI STA. 43+02.07
Δ = 2°09'20.25" Left
T = 131.70'
L = 263.36'
R = 7000.00'
E = 1.24'
SE = 2.00% (RC)
TR RUN = 78'
SE RUN = 78'
PC = 41+70.37
PT = 44+33.73
ATTAIN SE STA 40+40
TO STA 41+96
REMOVE SE STA 44+08
TO STA 45+64



PR MOFFITT ST Curve # 1
PI STA. 152+02.52
Δ = 36°35'51" Right
T = 102.52'
L = 198.01'
R = 310.00'
E = 16.51'
SE = NC
PC = 151+00.00
PRC = 152+98.01

PR MOFFITT ST Curve # 2
PI STA. 154+01.56
Δ = 36°56'32" Left
T = 103.55'
L = 199.88'
R = 310.00'
E = 16.84'
SE = NC
PRC = 152+98.01
PT = 154+97.89

ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION IL 29 CONNECTOR - PRINCIPAL ARTERIAL
   MOFFITT STREET - LOCAL ROAD
   SRA: YES ____ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN PROPOSED IL 29 CONNECTOR - 14400 (2032)
   DESIGN MOFFITT STREET - 1600 (2032)
3. IL 29 CONNECTOR IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE TWO-WAY STOP WARRANTS MET ____
6. DESIGN CRITERIA: ____
7. DESIGN VEHICLE: SU TRUCK ROUTE DESIGNATION CLASS II
8. DESIGN SPEED: IL 29 CONNECTOR - 45 MPH POSTED SPEED: IL 29 CONNECTOR - 40 MPH
   MOFFITT ST - 30 MPH MOFFITT ST - 25 MPH

GENERAL NOTES

1. PROFILES *ARE* PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. TYPE B-6.24 CURB AND GUTTER TO BE USED ON OUTER EDGES OF IL 29 CONN PAVEMENT
3. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT EXCEPT WHERE NOTED OTHERWISE
4. INTERSECTION *IS NOT* A HIGH ACCIDENT LOCATION
5. ALL ENTRANCES AS SHOWN *ARE* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
6. INTERSECTION SIGHT DISTANCE COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE IDOT BDE MANUAL
7. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE
8. PAVEMENT MARKINGS TO BE INSTALLED PER MUTCD, AND IDOT POLICIES.
9. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY BUREAU OF OPERATIONS POLICIES
   (CONTINUED BELOW)
10. ALL SIDEWALKS AND RAMPS AS SHOWN ARE IN COMPLIANCE WITH THE AMERICAN DISABILITIES ACT.
11. EXPECTED PEDESTRIAN/BICYCLE USAGE: BICYCLES ARE ACCOMMODATED ON IL 29 CONNECTOR
12. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS
13. SCOPE OF WORK: RECONSTRUCTION
14. DESIGN EXCEPTIONS: NONE

GRAPHIC SCALE 50 0 50

LOCATION MAP

INTERSECTION DESIGN STUDY

___ ROUTE ____ WITH IL 29 CONNECTOR (4TH ST)
___ ROUTE ____ MOFFITT ST

SEC. NO. ____ PROJ. NO. HPD-0133(012)
SCALE 1"=50' COUNTY PEORIA
SJN : P-94-009-01 REV. NO. ____

DESIGNED BY D. NOWAK CH2MHILL DATE 8/07
SATISFACTORY DISTRICT GEOMETRICS ENGINEER DATE 8/20/07
SATISFACTORY DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE 8/20/07
SATISFACTORY DISTRICT OPERATIONS ENGINEER DATE 8/20/07
APPROVED DISTRICT ENGINEER DATE 08/22/07

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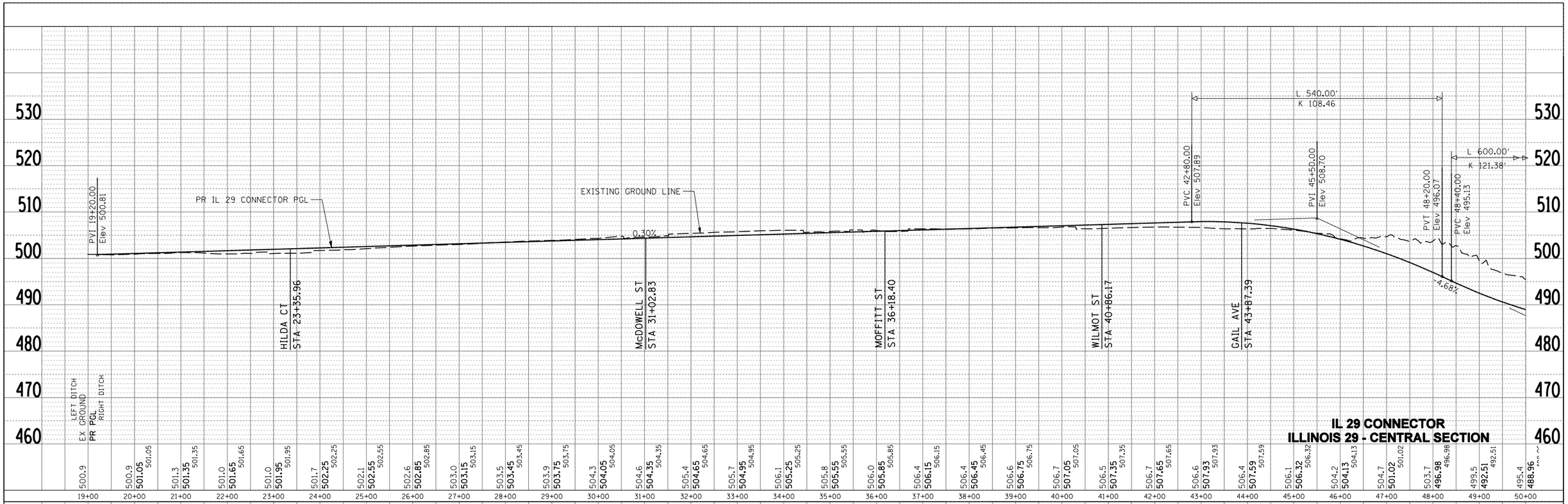

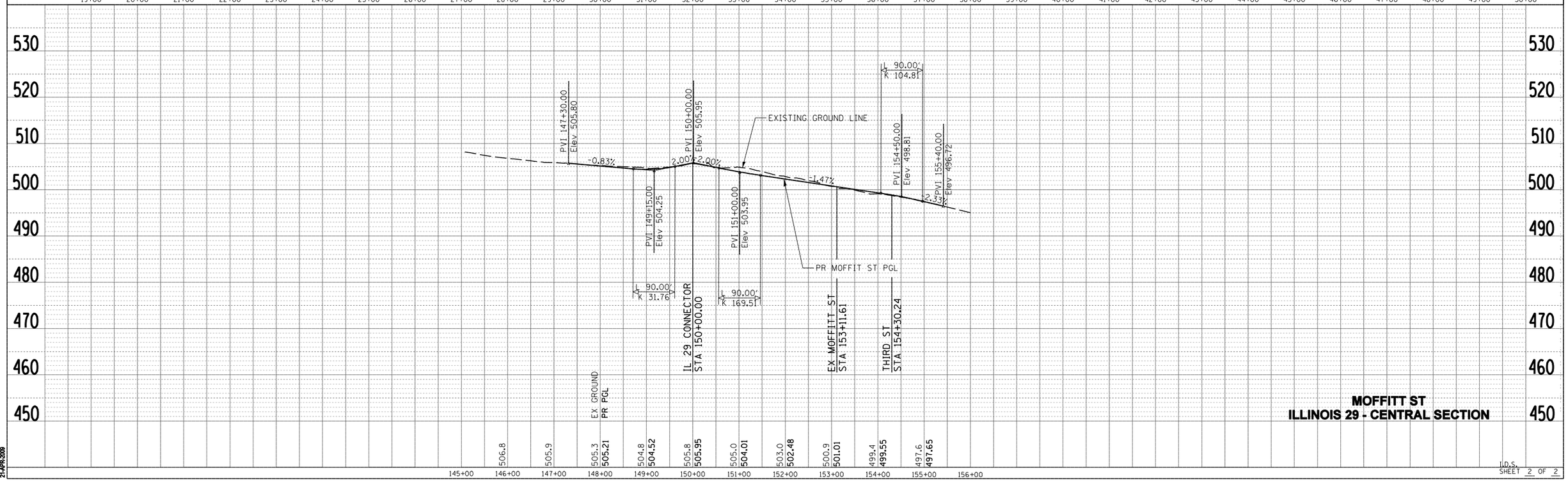

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GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CH'KD
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SHEET 2 OF 2

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERSECTION DESIGN STUDY
IL 29 CONNECTOR /CHILLICOTHE RECREATION AREA ENTRANCE INTERSECTION

PREPARED BY : CH2MHILL

JANUARY 2009

Illinois Department of Transportation

CH2MHILL

June 2010
Catalog No. 032469-00P

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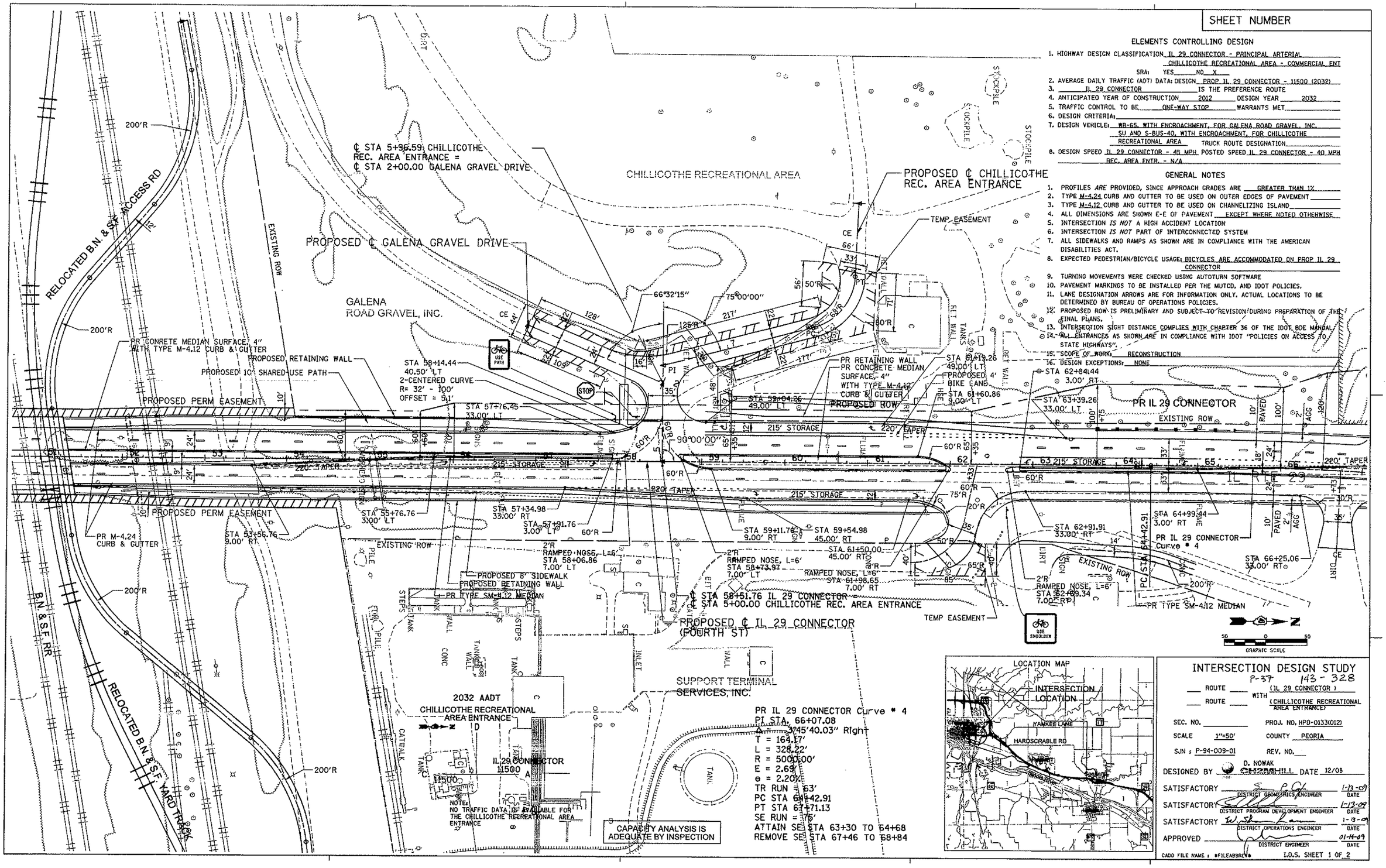
SHEET NUMBER

ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION IL 29 CONNECTOR - PRINCIPAL ARTERIAL
   CHILLICOTHE RECREATIONAL AREA - COMMERCIAL ENT
   SRA: YES ____ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN PROP IL 29 CONNECTOR - 11500 (2032)
3. IL 29 CONNECTOR IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE ONE-WAY STOP WARRANTS MET
6. DESIGN CRITERIA:
7. DESIGN VEHICLE: WB-65, WITH ENCROACHMENT, FOR GALENA ROAD GRAVEL, INC.
   SU AND S-BUS-40, WITH ENCROACHMENT, FOR CHILLICOTHE
   RECREATIONAL AREA TRUCK ROUTE DESIGNATION
8. DESIGN SPEED IL 29 CONNECTOR - 45 MPH POSTED SPEED IL 29 CONNECTOR - 40 MPH
   REC. AREA ENTR. - N/A

GENERAL NOTES

1. PROFILES *ARE* PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. TYPE M-4.24 CURB AND GUTTER TO BE USED ON OUTER EDGES OF PAVEMENT
3. TYPE M-4.12 CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND
4. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT EXCEPT WHERE NOTED OTHERWISE
5. INTERSECTION *IS NOT* A HIGH ACCIDENT LOCATION
6. INTERSECTION *IS NOT* PART OF INTERCONNECTED SYSTEM
7. ALL SIDEWALKS AND RAMPS AS SHOWN ARE IN COMPLIANCE WITH THE AMERICAN DISABILITIES ACT.
8. EXPECTED PEDESTRIAN/BICYCLE USAGE: BICYCLES ARE ACCOMMODATED ON PROP IL 29 CONNECTOR
9. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE
10. PAVEMENT MARKINGS TO BE INSTALLED PER THE MUTCD, AND IDOT POLICIES.
11. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY BUREAU OF OPERATIONS POLICIES.
12. PROPOSED ROW IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF THE FINAL PLANS.
13. INTERSECTION SIGHT DISTANCE COMPLIES WITH CHAPTER 36 OF THE IDOT BDE MANUAL
14. ALL ENTRANCES AS SHOWN *ARE* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
15. SCOPE OF WORK: RECONSTRUCTION
16. DESIGN EXCEPTIONS: NONE



PR IL 29 CONNECTOR Curve # 4
PI STA. 66+07.08
Δ = 345°40.03" Right
T = 164.17'
L = 328.22'
R = 500.00'
E = 2.69'
e = 2.20'
TR RUN = 63'
PC STA 64+42.91
PT STA 67+71.13
SE RUN = 75'
ATTAIN SE STA 63+30 TO 64+68
REMOVE SE STA 67+46 TO 68+84

INTERSECTION DESIGN STUDY

P-37 143 - 328

___ ROUTE ___ (IL 29 CONNECTOR) WITH ___ ROUTE ___ (CHILLICOTHE RECREATIONAL AREA ENTRANCE)

SEC. NO. ____ PROJ. NO. HPD-0133(012)

SCALE 1"=50' COUNTY PEORIA

SJN : P-94-009-01 REV. NO. ____

DESIGNED BY D. NOWAK CH2MHILL DATE 12/08

SATISFACTORY ____ DISTRICT GEOMETRICS ENGINEER 1-13-09 DATE

SATISFACTORY ____ DISTRICT PROGRAM DEVELOPMENT ENGINEER 1-13-09 DATE

SATISFACTORY ____ DISTRICT OPERATIONS ENGINEER 1-13-09 DATE

APPROVED ____ DISTRICT ENGINEER 01-14-09 DATE

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I.D.S. SHEET 1 OF 2

DGN-SPEC
DATE-TIME
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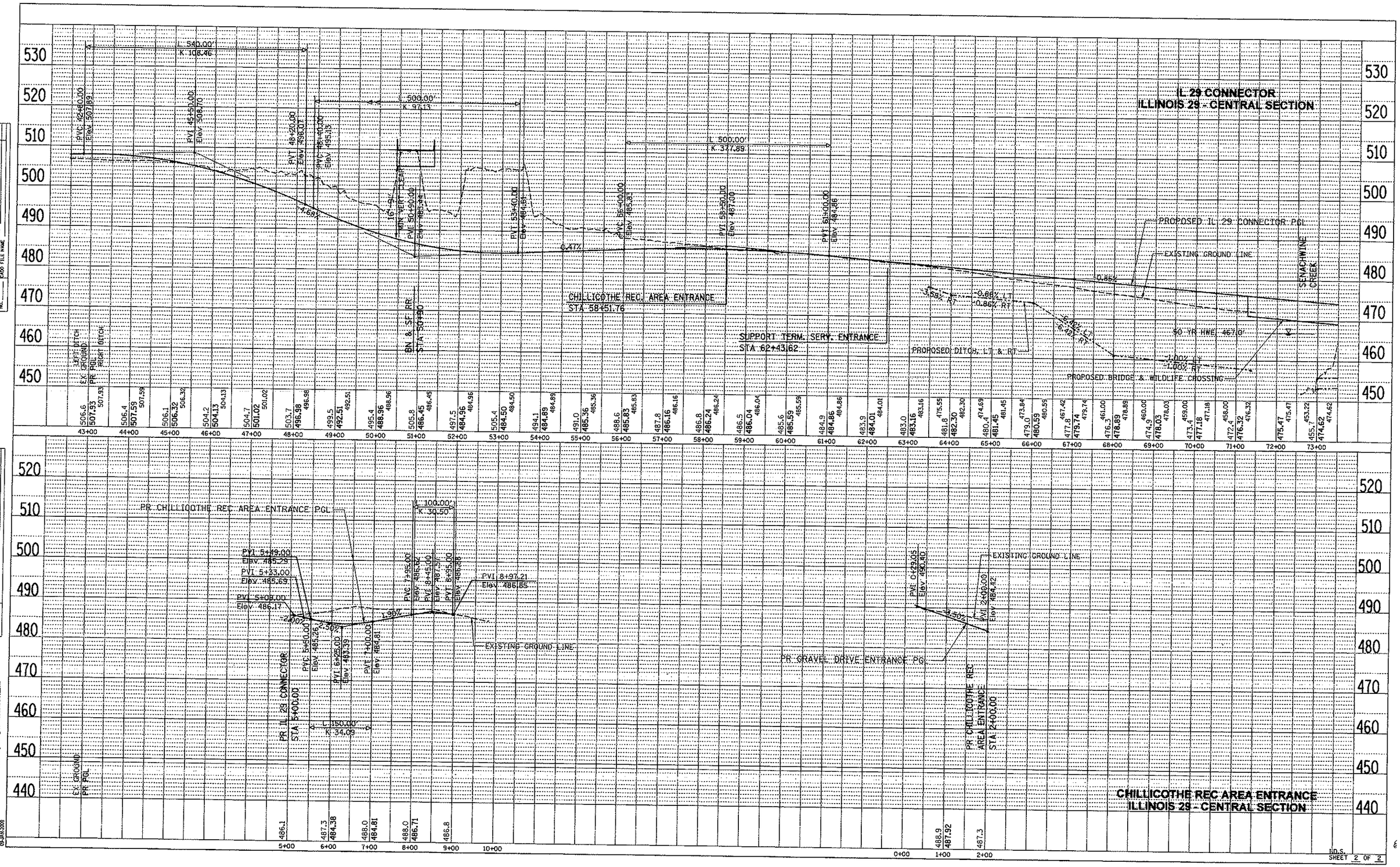
IL 29 CONNECTOR
ILLINOIS 29 - CENTRAL SECTION
PROPOSED IL 29 CONNECTOR PGL
EXISTING GROUND LINE
SENACHWINE CREEK
50 YR HWE 467.0'
PROPOSED DITCH, LT & RT
PROPOSED BRIDGE & WILDLIFE CROSSING
CHILLICOTHE REC. AREA ENTRANCE
STA 58+51.76
SUPPORT TERM. SERV. ENTRANCE
STA 62+43.62
BN & SF RR
STA 50+50
LEFT DITCH
EX. GROUND
PR PGL
RIGHT DITCH
PVC 42+10.00
Elev 507.89
PVI 45+50.00
Elev 508.70
PVI 48+20.00
Elev 496.07
PVC 48+40.00
Elev 495.13
PVI 50+90.00
Elev 485.41
PVI 53+40.00
Elev 484.81
PVC 56+00.00
Elev 485.83
PVI 58+50.00
Elev 487.00
PVI 61+00.00
Elev 484.86
L 540.00'
K 108.46
L 500.00'
K 97.13
L 500.00'
K 327.89
0.47%
0.85%
-0.66% LT
-0.86% RT
-1.00% LT
-1.00% RT
PR CHILLICOTHE REC AREA ENTRANCE PGL
PVI 5+49.00
Elev 485.29
PVI 5+33.00
Elev 485.69
PVI 5+09.00
Elev 486.17
PR IL 29 CONNECTOR
STA 5+00.00
PVC 5+50.00
Elev 485.26
PVI 6+25.00
Elev 483.39
PVT 7+00.00
Elev 484.81
L 150.00'
K 34.09
PVC 7+95.00
Elev 486.92
PVI 8+45.00
Elev 487.37
PVT 8+95.00
Elev 486.88
PVI 8+97.21
Elev 486.85
1.96%
EXISTING GROUND LINE
PR GRAVEL DRIVE ENTRANCE PGL
PVI 0+29.05
Elev 490.40
PVI 2+00.00
Elev 484.42
PR CHILLICOTHE REC AREA ENTRANCE
STA 2+00.00
CHILLICOTHE REC AREA ENTRANCE
ILLINOIS 29 - CENTRAL SECTION
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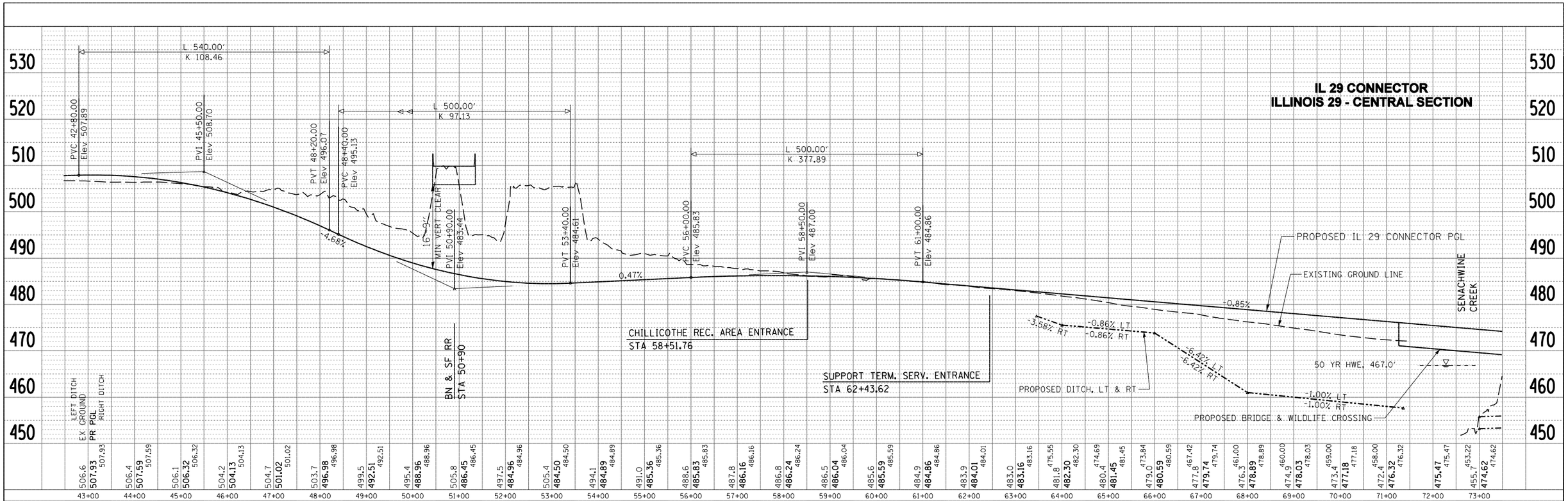
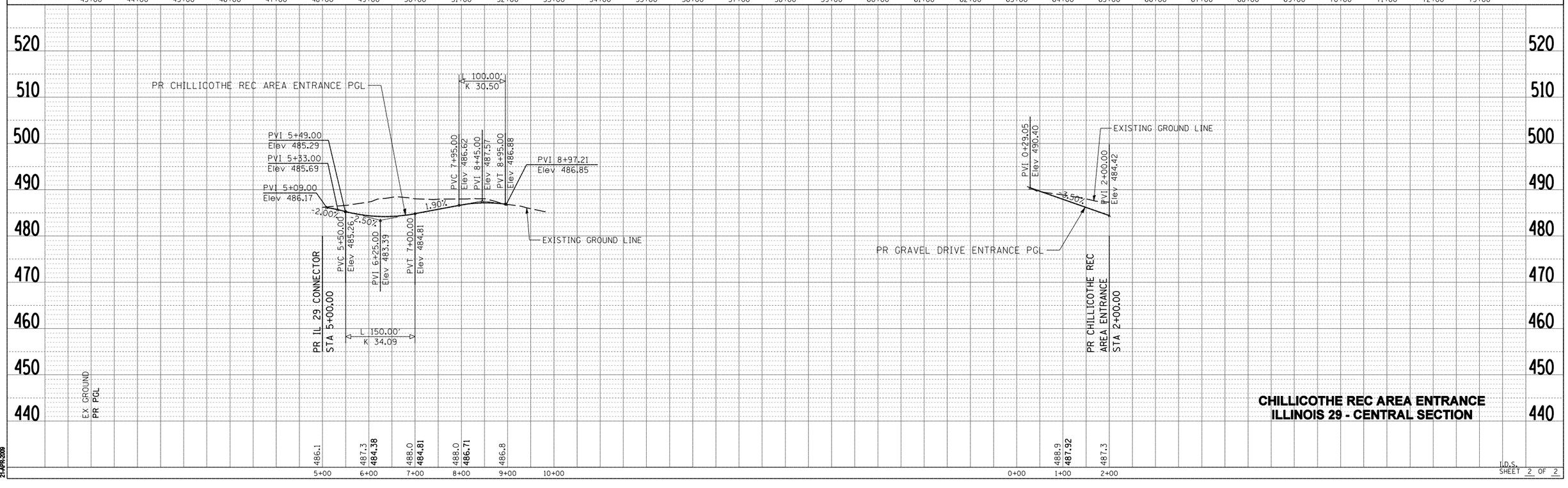
SHEET 2 OF 2





CHILLICOTHE REC AREA ENTRANCE
ILLINOIS 29 - CENTRAL SECTION

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERCHANGE DESIGN STUDY
NORTH CHILLICOTHE IL 29 /IL 29 CONNECTOR INTERCHANGE AREA

PREPARED BY : CH2MHILL

DECEMBER 2007

Illinois Department of Transportation
CH2MHILL

June 2010
Catalog No. 032469-00P

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PR Ramp A Curve # 1
PI STA. 17+48.33
Δ = 163°43'28" Right
T = 1748.33'
L = 714.38'
R = 250.00'
E = 1516.11'
e = 0.080
TR RUN = 0'
SE RUN = 42'
POC STA 0+00.00
PCC STA 7+14.38
REMOVE SE STA 7+00
TO STA 7+42

PR Ramp A Curve # 2
PI STA. 9+40.91
Δ = 19°46'08" Right
T = 226.52'
L = 448.54'
R = 1300.00'
E = 19.59'
e = 0.067
TR RUN = 0'
SE RUN = 42'
PCC STA 7+14.38
PCC STA 11+62.92
ATTAIN SE STA 7+00
TO STA 7+42
REMOVE SE THROUGH
ENTR TERMINAL

PR Ramp A Curve # 3
PI STA. 16+40.72
Δ = 15°07'13" Right
T = 477.80'
L = 950.04'
R = 3600.00'
E = 31.57'
e = 0.047
TR RUN = 0'
SE RUN = N/A
PCC STA 11+62.92
PT STA 21+12.97
ATTAIN SE THROUGH
ENTR TERMINAL

PR Ramp B Curve # 1
PI STA. 3+37.39
Δ = 10°14'58.92" Left
T = 337.39'
L = 672.99'
R = 3762.00'
E = 15.10'
e = 0.040
TR RUN = 0'
SE RUN = N/A
PC STA 0+00.00
PT STA 6+72.99
ATTAIN SE THROUGH
EXIT TERMINAL
REMOVE SE THROUGH
EXIT TERMINAL

PR Ramp B Curve # 2
PI STA. 16+86.81
Δ = 84°34'29.04" Right
T = 695.79'
L = 1129.22'
R = 765.00'
E = 269.09'
e = 0.080
TR RUN = 0'
SE RUN = 208'
PC STA 9+91.02
PT STA 21+20.25
ATTAIN SE STA 8+33
TO STA 10+41
REMOVE SE THROUGH
ENTR TERMINAL

PR Ramp B Curve # 3
PI STA. 26+05.87
Δ = 3°39'28.18" Right
T = 83.98'
L = 167.90'
R = 2630.00'
E = 1.34'
e = 0.033
TR RUN = 0'
SE RUN = N/A
PC STA 25+21.89
PT STA 26+89+80
ATTAIN SE THROUGH
ENTR TERMINAL

PR IL 29 Curve # 1
PI STA. 3279+76.34
Δ = 61°59'36.01" Left
T = 2222.89'
L = 4003.35'
R = 3700.00'
E = 616.39'
e = 0.047
TR RUN = 40'
SE RUN = 212'
PC STA 3257+53.45
PT STA 3297+56.81
ATTAIN SE STA 3255+72
TO STA 3258+24
REMOVE SE STA 3296+86
TO STA 3299+38

PR IL 29 CONNECTOR Curve # 5
PI STA. 81+73.04
Δ = 19°55'01.96" Left
T = 438.96'
L = 869.05'
R = 2500.00'
E = 38.24'
e = 0.033
TR RUN = 48'
SE RUN = 110'
PC STA 77+34.09
PT STA 86+03.14
ATTAIN SE STA 76+13
TO STA 77+71
REMOVE SE STA 85+67
TO STA 87+25

PR IL 29 CONNECTOR Curve # 6
PI STA. 92+47.50
Δ = 4°36'42.44" Left
T = 161.07'
L = 321.96'
R = 4000.00'
E = 3.24'
e = 0.023
TR RUN = 60'
SE RUN = 69'
PC STA 90+86.43
PT STA 94+08.40
ATTAIN SE STA 89+80
TO STA 91+09
REMOVE SE STA 93+85
TO STA 95+14

PR IL 29 CONNECTOR Curve # 7
PI STA. 101+50.76
Δ = 23°28'26" Right
T = 394.75'
L = 778.42'
R = 1900.00'
E = 40.57'
e = 0.046
TR RUN = 60'-0'
SE RUN = 137'-101'
PC STA 97+56.01
ATTAIN SE STA 96+05
TO STA 98+02
REMOVE SE STA 104+33
TO STA 105+34

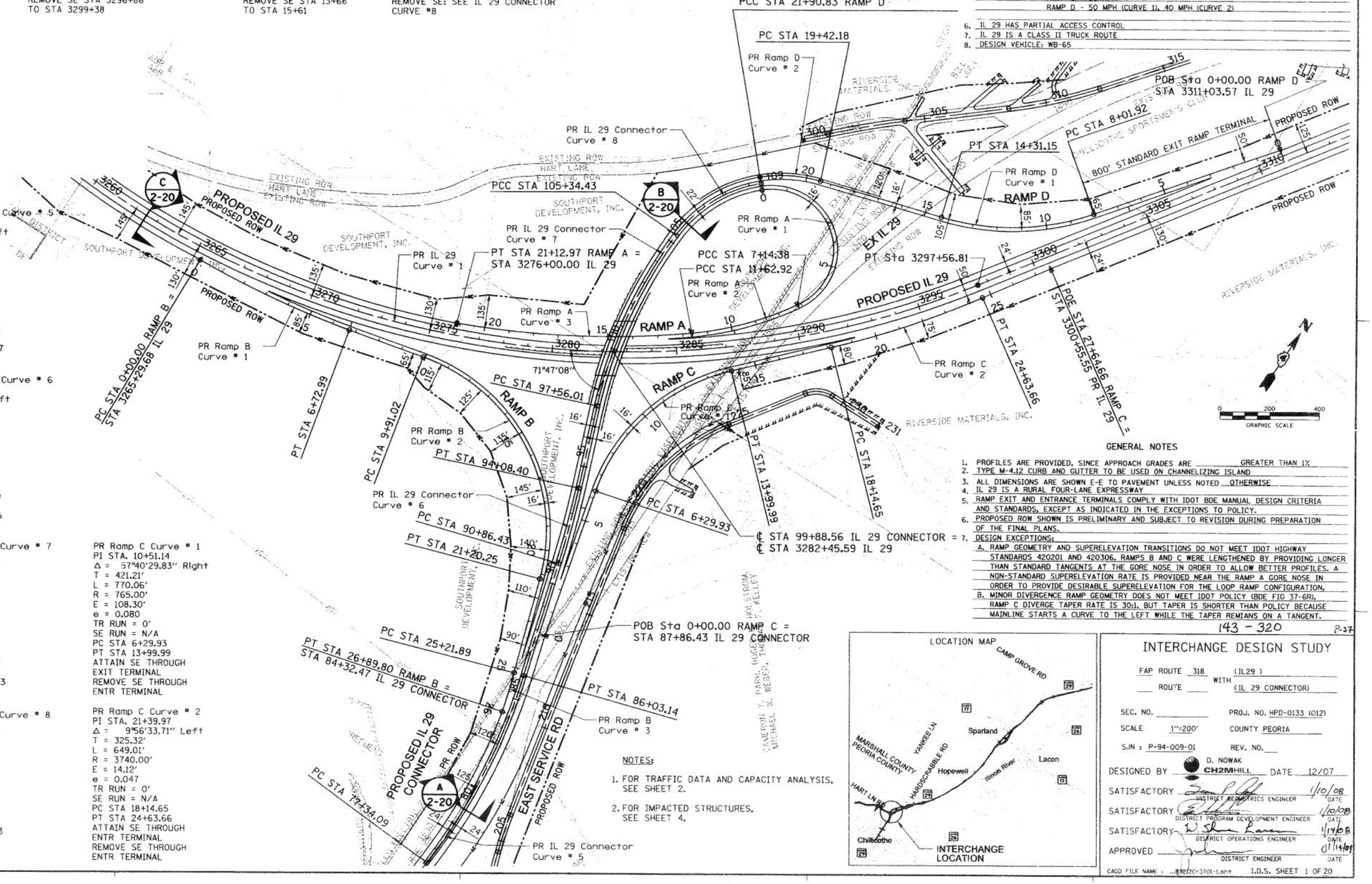
PR IL 29 CONNECTOR Curve # 8
PI STA. 107+53.76
Δ = 45°20'48" Right
T = 219.33'
L = 415.51'
R = 525.00'
E = 43.97'
e = 0.080
TR RUN = 0'
SE RUN = 101'
PCC STA 105+34.43
POC STA 109+49.94
ATTAIN SE STA 104+33
TO STA 105+34

PR Ramp D Curve # 1
PI STA. 11+27.34
Δ = 36°03'08.03" Right
T = 325.42'
L = 629.23'
R = 1000.00'
E = 51.62'
e = 0.076
TR RUN =0'
SE RUN = 195'
PC STA 8+01.92
PT STA 14+31.15
ATTAIN SE THROUGH
STD EXIT TERMINAL
REMOVE SE STA 13+66
TO STA 15+61

PR Ramp D Curve # 2
PI STA. 20+68.65
Δ = 25°48'31.11" Left
T = 126.47'
L = 248.65'
R = 552.00'
E = 14.30'
e = 0.080
TR RUN = 44'
SE RUN = 237'
PC STA 19+42.18
POC STA 21+90.83
ATTAIN SE STA 17+40
TO STA 20+21
REMOVE SE: SEE IL 29 CONNECTOR
CURVE #8

PR Ramp C Curve # 1
PI STA. 10+51.14
Δ = 57°40'29.83" Right
T = 421.21'
L = 770.06'
R = 765.00'
E = 108.30'
e = 0.080
TR RUN = 0'
SE RUN = N/A
PC STA 6+29.93
PT STA 13+99.99
ATTAIN SE THROUGH
EXIT TERMINAL
REMOVE SE THROUGH
ENTR TERMINAL

PR Ramp C Curve # 2
PI STA. 21+39.97
Δ = 9°56'33.71" Left
T = 325.32'
L = 649.01'
R = 3740.00'
E = 14.12'
e = 0.047
TR RUN = 0'
SE RUN = N/A
PC STA 18+14.65
PT STA 24+63.66
ATTAIN SE THROUGH
ENTR TERMINAL
REMOVE SE THROUGH
ENTR TERMINAL



SHEET NUMBER

ELEMENTS CONTROLLING DESIGN

1. DESIGN DESIGNATION FAP ROUTE 318 (IL 29) - EXPRESSWAY 16500 (2032)
   IL 29 CONNECTOR PRINCIPAL ARTERIAL 1150 (2032)
2. ILLINOIS 29 IS THE PREFERENCE ROUTE
3. ANTICIPATED YEAR OF CONSTRUCTION 2012
4. TRAFFIC CONTROL TO BE FREE FLOW ON RAMPS
5. DESIGN SPEEDS: IL 29 - 70 MPH
   IL 29 CONNECTOR - 45 MPH
   RAMP A - 30 MPH (CURVE 1), 50 MPH (CURVE 2)
   RAMP B - 50 MPH
   RAMP C - 50 MPH
   RAMP D - 50 MPH (CURVE 1), 40 MPH (CURVE 2)
6. IL 29 HAS PARTIAL ACCESS CONTROL
7. IL 29 IS A CLASS II TRUCK ROUTE
8. DESIGN VEHICLE: WB-65

GENERAL NOTES

1. PROFILES ARE PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. TYPE M-4.12 CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND
3. ALL DIMENSIONS ARE SHOWN E-E TO PAVEMENT UNLESS NOTED OTHERWISE
4. IL 29 IS A RURAL FOUR-LANE EXPRESSWAY
5. RAMP EXIT AND ENTRANCE TERMINALS COMPLY WITH IDOT BDE MANUAL DESIGN CRITERIA AND STANDARDS, EXCEPT AS INDICATED IN THE EXCEPTIONS TO POLICY.
6. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF THE FINAL PLANS.
7. DESIGN EXCEPTIONS:
   A. RAMP GEOMETRY AND SUPERELEVATION TRANSITIONS DO NOT MEET IDOT HIGHWAY STANDARDS 420201 AND 420306. RAMPS B AND C WERE LENGTHENED BY PROVIDING LONGER THAN STANDARD TANGENTS AT THE GORE NOSE IN ORDER TO ALLOW BETTER PROFILES. A NON-STANDARD SUPERELEVATION RATE IS PROVIDED NEAR THE RAMP A GORE NOSE IN ORDER TO PROVIDE DESIRABLE SUPERELEVATION FOR THE LOOP RAMP CONFIGURATION.
   B. MINOR DIVERGENCE. RAMP GEOMETRY DOES NOT MEET IDOT POLICY (BDE FIG 37-6R). RAMP C DIVERGE TAPER RATE IS 30:1, BUT TAPER IS SHORTER THAN POLICY BECAUSE MAINLINE STARTS A CURVE TO THE LEFT WHILE THE TAPER REMIANS ON A TANGENT.

143 - 320 P-37

NOTES:

1. FOR TRAFFIC DATA AND CAPACITY ANALYSIS, SEE SHEET 2.
2. FOR IMPACTED STRUCTURES, SEE SHEET 4.

LOCATION MAP

INTERCHANGE DESIGN STUDY

FAP ROUTE 318 (IL29) WITH
ROUTE (IL 29 CONNECTOR)

SEC. NO. PROJ. NO. HPD-0133 (012)
SCALE 1"=200' COUNTY PEORIA
SJN : P-94-009-01 REV. NO.

DESIGNED BY D. NOWAK CH2MHILL DATE 12/07
SATISFACTORY DISTRICT GEOMETRICS ENGINEER DATE 1/10/08
SATISFACTORY DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE 1/10/08
SATISFACTORY DISTRICT OPERATIONS ENGINEER DATE 1/14/08
APPROVED DISTRICT ENGINEER DATE 01/14/08

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SHEET NUMBER

2032 DHV
ADT

C 11,500 11,500 A IL 29 CONNECTOR

B
EAST SERVICE RD
CONNECTOR

NOTE:
NO TRAFFIC DATA IS AVAILABLE FOR
THE EAST FRONTAGE ROAD CONNECTOR

CAPACITY ANALYSIS IS
ADEQUATE BY INSPECTION

Curve # 5-SB IL 29 Connector
PI STA. 81+65.60
Δ = 19°55'01.56" Left
T = 438.95'
L = 869.05'
R = 2500.00'
E = 38.24'
SE = 0.033

Curve # 5-NB IL 29 Connector
PI STA. 81+80.50
Δ = 19°55'01.92" Left
T = 438.96'
L = 869.05'
R = 2500.00'
E = 38.24'
SE = 0.033

Curve # 5 IL 29 Connector
PI STA. 81+73.04
Δ = 19°55'01.96" Left
T = 438.96'
L = 869.05'
R = 2500.00'
E = 38.24'
SE = 0.033
TR RUN = 48'
SE RUN = 110'
PC STA 77+34.09
PT STA 86+03.14
ATTAIN SE STA 76+13
TO STA 77+71
REMOVE SE STA 85+67
TO STA 87+25

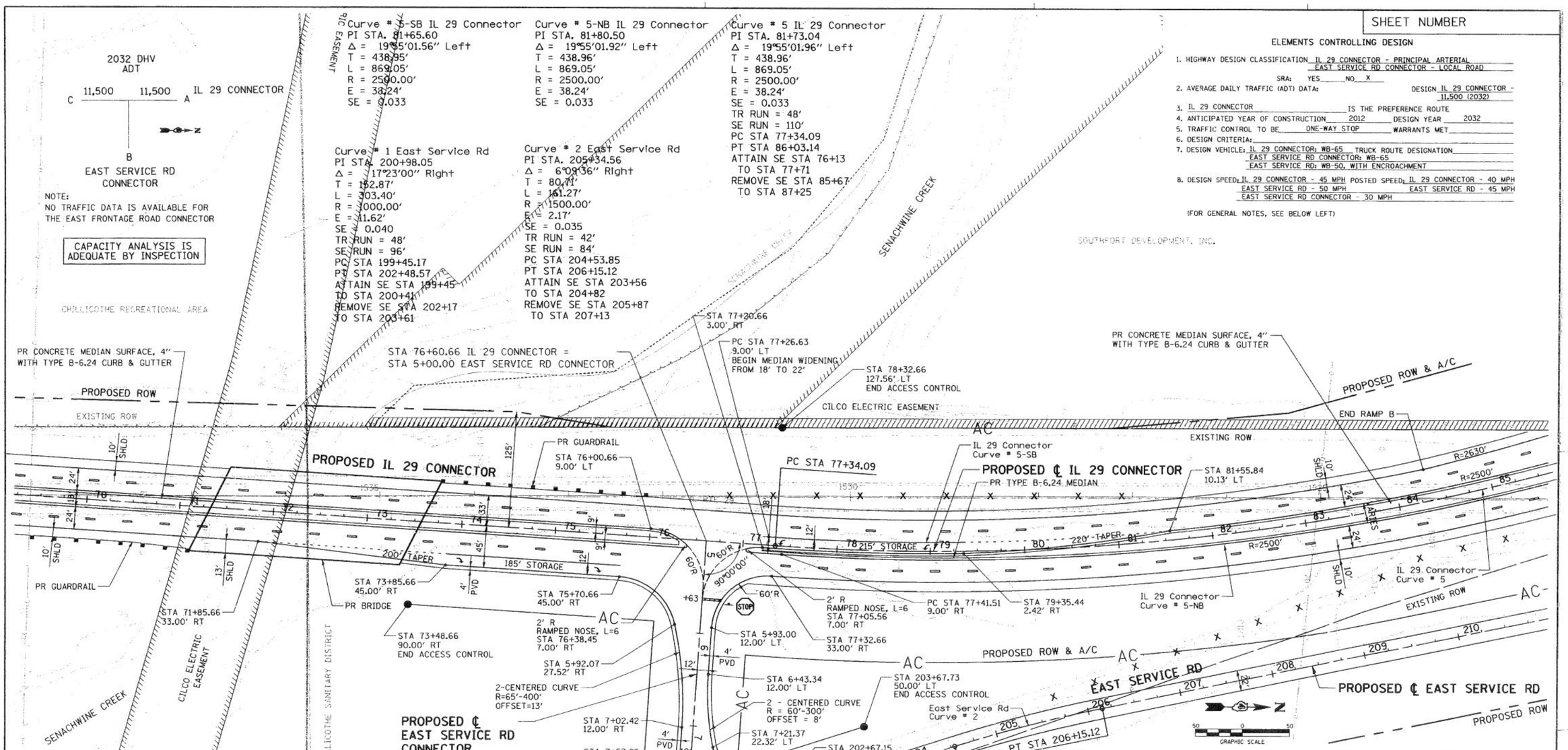
Curve # 1 East Service Rd
PI STA. 200+98.05
Δ = 17°23'00" Right
T = 152.87'
L = 303.40'
R = 1000.00'
E = 11.62'
SE = 0.040
TR RUN = 48'
SE RUN = 96'
PC STA 199+45.17
PT STA 202+48.57
ATTAIN SE STA 199+45
TO STA 200+41
REMOVE SE STA 202+17
TO STA 203+61

Curve # 2 East Service Rd
PI STA. 205+34.56
Δ = 6°09'36" Right
T = 80.71'
L = 161.27'
R = 1500.00'
E = 2.17'
SE = 0.035
TR RUN = 42'
SE RUN = 84'
PC STA 204+53.85
PT STA 206+15.12
ATTAIN SE STA 203+56
TO STA 204+82
REMOVE SE STA 205+87
TO STA 207+13

ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION IL 29 CONNECTOR - PRINCIPAL ARTERIAL
EAST SERVICE RD CONNECTOR - LOCAL ROAD
SRA: YES____ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN IL 29 CONNECTOR - 11,500 (2032)
3. IL 29 CONNECTOR IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE ONE-WAY STOP WARRANTS MET
6. DESIGN CRITERIA:
7. DESIGN VEHICLE: IL 29 CONNECTOR: WB-65 TRUCK ROUTE DESIGNATION
EAST SERVICE RD CONNECTOR: WB-65
EAST SERVICE RD: WB-50, WITH ENCROACHMENT
8. DESIGN SPEED: IL 29 CONNECTOR - 45 MPH POSTED SPEED: IL 29 CONNECTOR - 40 MPH
EAST SERVICE RD - 50 MPH EAST SERVICE RD - 45 MPH
EAST SERVICE RD CONNECTOR - 30 MPH

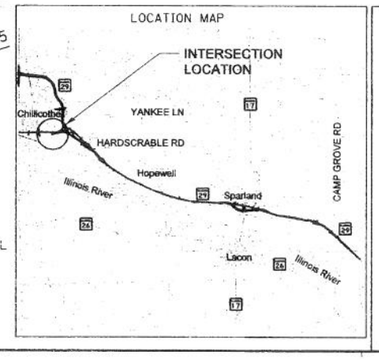
(FOR GENERAL NOTES, SEE BELOW LEFT)



GENERAL NOTES

1. PROFILES *ARE* PROVIDED. SINCE APPROACH GRADES ARE GREATER THAN 1%
2. TYPE B-6.24 CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND
3. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT EXCEPT WHERE NOTED OTHERWISE
4. INTERSECTION *IS NOT* A HIGH ACCIDENT LOCATION
5. INTERSECTION *IS NOT* PART OF INTERCONNECTED SYSTEM
6. EXPECTED PEDESTRIAN/BICYCLE USAGE: BICYCLES ARE ACCOMMODATED ON PR IL 29 CONNECTOR
7. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE.
8. PAVEMENT MARKINGS TO BE INSTALLED PER THE MUTCD, AND IDOT POLICIES.
9. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY THE BUREAU OF OPERATIONS POLICIES.
10. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF THE FINAL PLANS.
11. INTERSECTION SIGHT DISTANCE COMPLIES WITH CHAPTER 36 OF THE IDOT BDE MANUAL.
12. ALL ENTRANCES AS SHOWN *ARE* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
13. SCOPE OF WORK: RECONSTRUCTION
14. DESIGN EXCEPTIONS: NONE

LOCATION MAP



INTERSECTION DESIGN STUDY

__ ROUTE __ (IL 29 CONNECTOR)
WITH
__ ROUTE __ (EAST SERVICE RD CONNECTOR)

SEC. NO. ____ PROJ. NO. HPD-0133 (012)
SCALE 1"=50' COUNTY PEORIA
SJN : P-94-009-01 REV. NO. __
DESIGNED BY DAN NOWAK CH2MHILL DATE 12/07
SATISFACTORY DISTRICT GEOMETRICS ENGINEER 1/10/08 DATE
SATISFACTORY DISTRICT PROGRAM DEVELOPMENT ENGINEER 1/10/08 DATE
SATISFACTORY DISTRICT OPERATIONS ENGINEER 1/14/08 DATE
APPROVED DISTRICT ENGINEER 01/14/08 DATE

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Plotted by bgarrins
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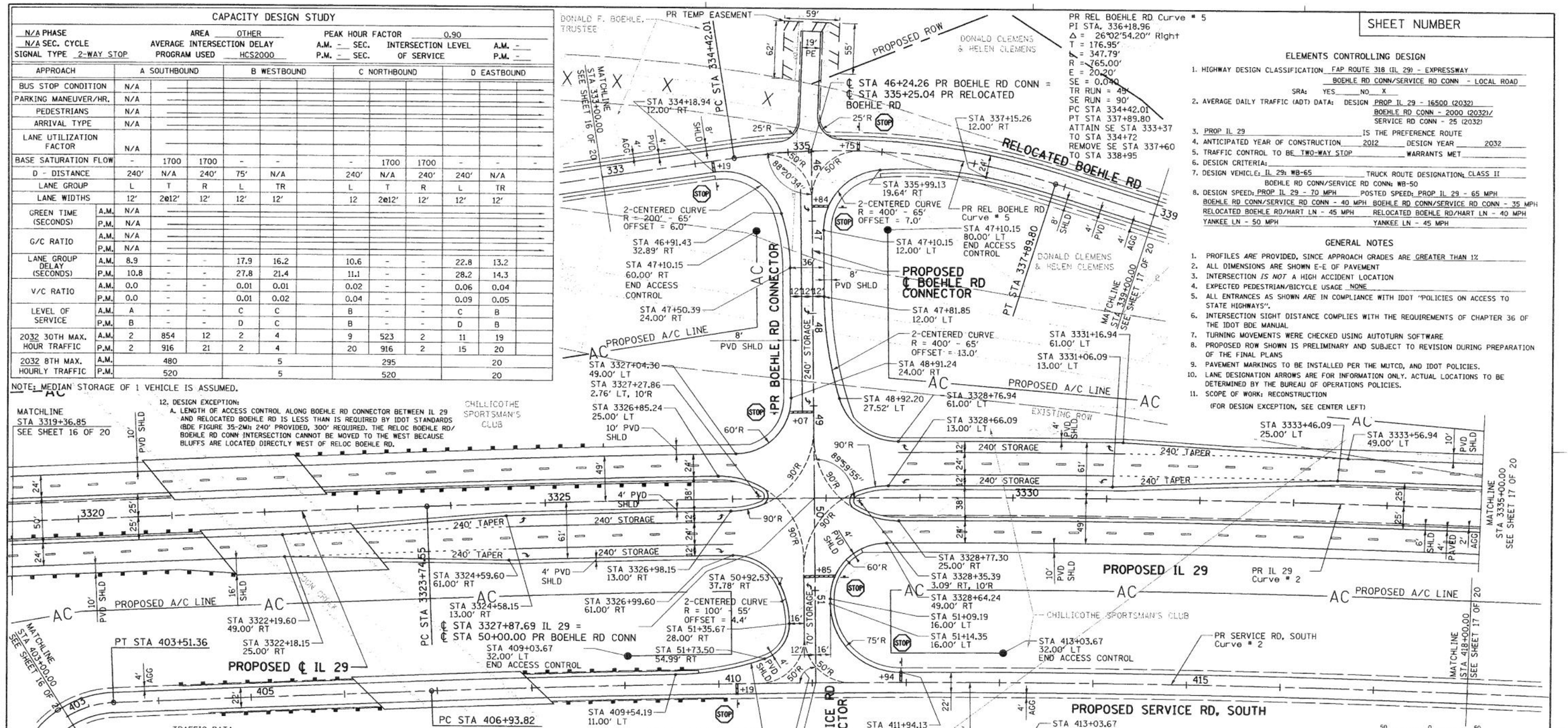
CAPACITY DESIGN STUDY

N/A PHASE — AREA OTHER — PEAK HOUR FACTOR 0.90
N/A SEC. CYCLE — AVERAGE INTERSECTION DELAY — A.M. -- SEC. — INTERSECTION LEVEL — A.M. --
SIGNAL TYPE 2-WAY STOP — PROGRAM USED HCS2000 — P.M. -- SEC. — OF SERVICE — P.M. --

APPROACH		A SOUTHBOUND			B WESTBOUND			C NORTHBOUND			D EASTBOUND		
BUS STOP CONDITION		N/A											
PARKING MANEUVER/HR.		N/A											
PEDESTRIANS		N/A											
ARRIVAL TYPE		N/A											
LANE UTILIZATION FACTOR		N/A											
BASE SATURATION FLOW		-	1700	1700	-	-		-	1700	1700	-	-	-
D - DISTANCE		240'	N/A	240'	75'	N/A		240'	N/A	240'	240'	N/A	
LANE GROUP		L	T	R	L	TR		L	T	R	L	TR	
LANE WIDTHS		12'	2@12'	12'	12'	12'		12	2@12'	12'	12'	12'	
GREEN TIME (SECONDS)	A.M.	N/A											
	P.M.	N/A											
G/C RATIO	A.M.	N/A											
	P.M.	N/A											
LANE GROUP DELAY (SECONDS)	A.M.	8.9	-	-	17.9	16.2		10.6	-	-	22.8	13.2	
	P.M.	10.8	-	-	27.8	21.4		11.1	-	-	28.2	14.3	
V/C RATIO	A.M.	0.0	-	-	0.01	0.01		0.02	-	-	0.06	0.04	
	P.M.	0.0	-	-	0.01	0.02		0.04	-	-	0.09	0.05	
LEVEL OF SERVICE	A.M.	A	-	-	C	C		B	-	-	C	B	
	P.M.	B	-	-	D	C		B	-	-	D	B	
2032 30TH MAX. HOUR TRAFFIC	A.M.	2	854	12	2	4		9	523	2	11	19	
	P.M.	2	916	21	2	4		20	916	2	15	20	
2032 8TH MAX. HOURLY TRAFFIC	A.M.	480			5			295			20		
	P.M.	520			5			520			20		

NOTE: MEDIAN STORAGE OF 1 VEHICLE IS ASSUMED.

12. DESIGN EXCEPTION:
A. LENGTH OF ACCESS CONTROL ALONG BOEHLE RD CONNECTOR BETWEEN IL 29 AND RELOCATED BOEHLE RD IS LESS THAN IS REQUIRED BY IDOT STANDARDS (BDE FIGURE 35-2M): 240' PROVIDED, 300' REQUIRED. THE RELOC BOEHLE RD/ BOEHLE RD CONN INTERSECTION CANNOT BE MOVED TO THE WEST BECAUSE BLUFFS ARE LOCATED DIRECTLY WEST OF RELOC BOEHLE RD.



PR REL BOEHLE RD Curve # 5
PI STA. 336+18.96
Δ = 26°02'54.20" Right
T = 176.95'
L = 347.79'
R = 765.00'
E = 20.20'
SE = 0.040
TR RUN = 45'
SE RUN = 90'
PC STA 334+42.01
PT STA 337+89.80
ATTAIN SE STA 333+37 TO STA 334+72
REMOVE SE STA 337+60 TO STA 338+95

SHEET NUMBER

ELEMENTS CONTROLLING DESIGN

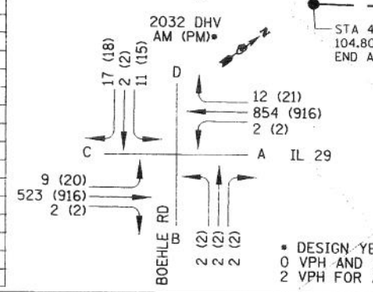
1. HIGHWAY DESIGN CLASSIFICATION FAP ROUTE 318 (IL 29) - EXPRESSWAY
BOEHLE RD CONN/SERVICE RD CONN - LOCAL ROAD
SRA: YES ___ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN PROP IL 29 - 16500 (2032)
BOEHLE RD CONN - 2000 (2032)/ SERVICE RD CONN - 25 (2032)
3. PROP IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE TWO-WAY STOP WARRANTS MET
6. DESIGN CRITERIA:
7. DESIGN VEHICLE: IL 29: WB-65 TRUCK ROUTE DESIGNATION: CLASS II
BOEHLE RD CONN/SERVICE RD CONN: WB-50
8. DESIGN SPEED: PROP IL 29 - 70 MPH POSTED SPEED: PROP IL 29 - 65 MPH
BOEHLE RD CONN/SERVICE RD CONN - 40 MPH BOEHLE RD CONN/SERVICE RD CONN - 35 MPH
RELOCATED BOEHLE RD/HART LN - 45 MPH RELOCATED BOEHLE RD/HART LN - 40 MPH
YANKEE LN - 50 MPH YANKEE LN - 45 MPH

GENERAL NOTES

1. PROFILES *ARE* PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT
3. INTERSECTION *IS NOT* A HIGH ACCIDENT LOCATION
4. EXPECTED PEDESTRIAN/BICYCLE USAGE NONE
5. ALL ENTRANCES AS SHOWN *ARE* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
6. INTERSECTION SIGHT DISTANCE COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE IDOT BDE MANUAL
7. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE
8. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF THE FINAL PLANS
9. PAVEMENT MARKINGS TO BE INSTALLED PER THE MUTCD, AND IDOT POLICIES.
10. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY THE BUREAU OF OPERATIONS POLICIES.
11. SCOPE OF WORK: RECONSTRUCTION
(FOR DESIGN EXCEPTION, SEE CENTER LEFT)

TRAFFIC DATA

MOVEMENT	YEAR ___ 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB			12/12					2	2
AD			12/12					12	21
AC			12/12					854	916
BA			8/8					2	2
BC			8/8					2	2
BD			8/8					2	2
CD			12/12					9	20
CA			12/12					523	916
CB			12/12					2	2
DC			8/8					17	18
DB			8/8					2	2
DA			8/8					11	15
TOTAL A								1404	1872
TOTAL B								12	12
TOTAL C								1407	1874
TOTAL D								53	78

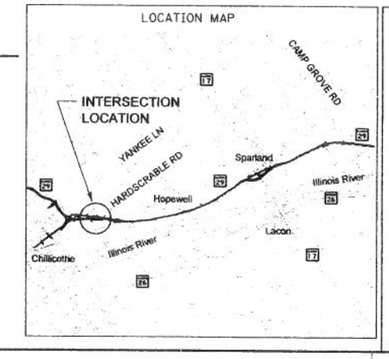


PR IL 29 Curve # 2
PI STA. 3338+95.91
Δ = 11°34'57.67" Right
T = 1521.35'
L = 3032.34'
R = 15000.00'
E = 76.95'
SE = NC
PC STA 3323+74.55
PT STA 3354+06.89

PR SERVICE RD, SOUTH Curve # 2
PI STA. 414+71.25
Δ = 6°00'49.74" Right
T = 777.42'
L = 1553.42'
R = 14800.00'
E = 20.40'
SE = NC
PC STA 406+93.82
PT STA 422+47.24

* DESIGN YEAR TRAFFIC MOVEMENTS OF 0 VPH AND 1 VPH WERE INCREASED TO 2 VPH FOR ANALYSIS

LOCATION MAP



INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29) WITH ___ ROUTE ___ (BOEHLE RD CONN/ SERVICE RD CONN)
SEC. NO. ___ PROJ. NO. HPD-0133 (012)
SCALE 1" = 50' COUNTY PEORIA
SJN: P-94-009-01 REV. NO. ___
DESIGNED BY DAN NOWAK CH2MHILL DATE 12/07
SATISFACTORY — DISTRICT GEOMETRICS ENGINEER — 1/10/08 DATE
SATISFACTORY — DISTRICT PROGRAM DEVELOPMENT ENGINEER — 1/10/08 DATE
SATISFACTORY — DISTRICT OPERATIONS ENGINEER — 1/14/08 DATE
APPROVED — DISTRICT ENGINEER — 01/14/08 DATE

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DGN-SPEC *DATE-TIME* *REF-* *REF-* *REF-*

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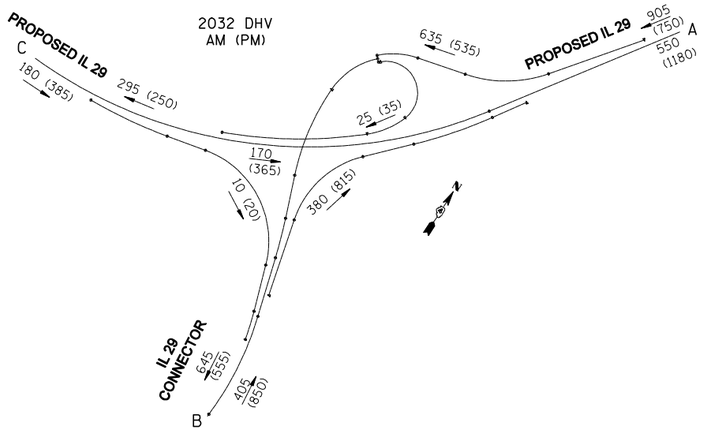
12/14/2007

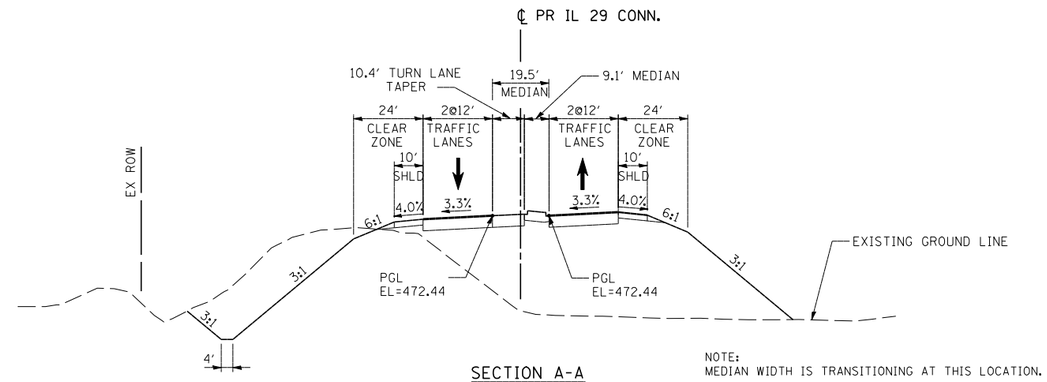
		B	A	C	D
RAMP TYPE		NB OFF	SB ON	NB ON	SB OFF
DISTANCE TO ADJACENT RAMPS (FT.)		N/A	N/A	N/A	N/A
TERRAIN/GRADE		LEVEL	LEVEL	LEVEL	LEVEL
FREEWAY VOLUME	A.M.	180	270	170	905
	P.M.	385	215	365	750
RAMP VOLUME	A.M.	10	25	380	635
	P.M.	20	35	815	535
TRUCK TYPES		TYP	TYP	TYP	TYP
% OF TRUCKS ON FREEWAY		20	20	20	20
PEAK-HOUR FACTOR		0.09	0.09	0.09	0.09
% OF TRUCKS ON RAMP		20	20	20	20
NUMBER OF LANES ON FREEWAY		2	2	2	2
DESIGN SPEED		70	70	70	70
CHECK POINT VOLUME (FREEWAY + RAMP)	A.M.	232	361	672	1882
	P.M.	495	306	1442	1571
DENSITY/SPEED* (PC/MI/LN)/(MPH) (FREEWAY)	A.M.	3.4/63.4	0.4/64.4	2.7/64.3	11.1/61.5
	P.M.	5.6/63.4	0.0/64.4	8.4/64.1	9.4/61.8
LEVEL OF SERVICE (RAMP)	A.M.	A	A	A	B
	P.M.	A	A	A	A

* NOTE:
THE PREDICTION OF DENSITY AND THE MODEL TO DETERMINE THIS VARIABLE ARE DISCUSSED IN THE HCM. DENSITY IS MEASURED IN PASSENGER CARS PER MILE PER LANE (PC/MI/LN). THE AVERAGE TRAVEL SPEED MAY BE PREDICTED WITHIN THE RAMP INFLUENCE AREA, BUT SHOULD NOT BE USED AS A PRIMARY MEASURE OF LEVEL OF SERVICE.



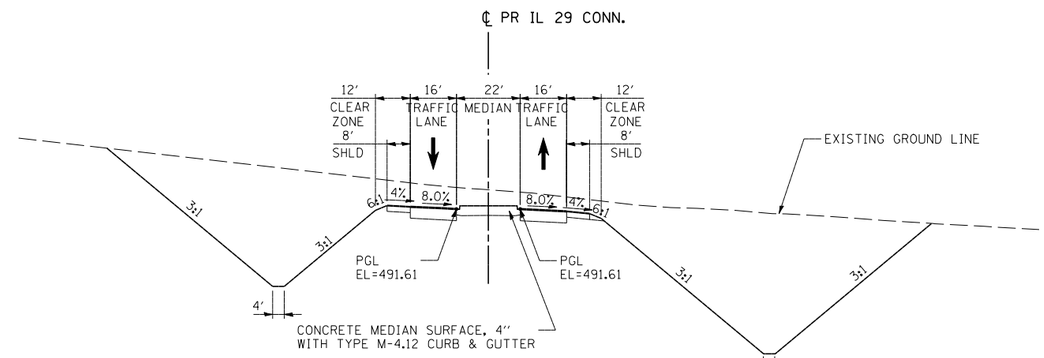
TRAFFIC DATA

MOVE-MENT	YEAR 2001 30TH MAXIMUM HOUR TRAFFIC		PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR ____ 30th MAXIMUM HOUR TRAFFIC		ESTIMATED PERCENT INCREASE BY	YEAR 2032 30th MAXIMUM HOUR TRAFFIC	
	A.M.	P.M.			A.M.	P.M.		A.M.	P.M.
AB	-	-	20					635	535
AD	-	-	20					-	-
AC	-	-	20					270	215
BA	-	-	20					380	815
BC	-	-	20					25	35
BD	-	-	20					-	-
CD	-	-	20					-	-
CA	-	-	20					170	365
CB	-	-	20					10	20
DC	-	-	20					-	-
DB	-	-	20					-	-
DA	-	-	20					-	-
TOTAL A								1455	1930
TOTAL B								1050	1405
TOTAL C								475	635
TOTAL D								-	-

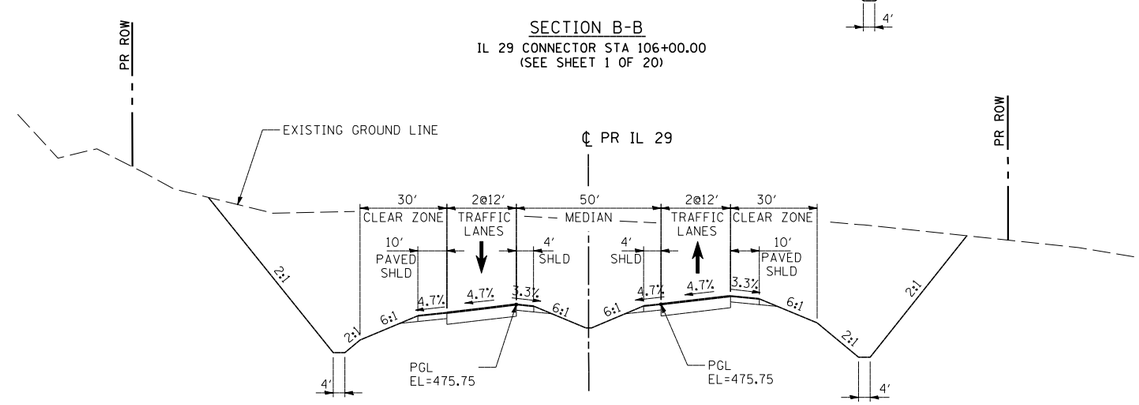


SECTION A-A
IL 29 CONNECTOR STA 80+00.00
(SEE SHEET 1 OF 20)

NOTE:
MEDIAN WIDTH IS TRANSITIONING AT THIS LOCATION.



SECTION B-B
IL 29 CONNECTOR STA 106+00.00
(SEE SHEET 1 OF 20)



SECTION C-C
IL 29 STA 3262+50.00
(SEE SHEET 1 OF 20)

INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL29) WITH
___ ROUTE ____ (IL 29 CONNECTOR)

SEC. NO. _____

SCALE NONE COUNTY PEORIA

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 2 OF 20

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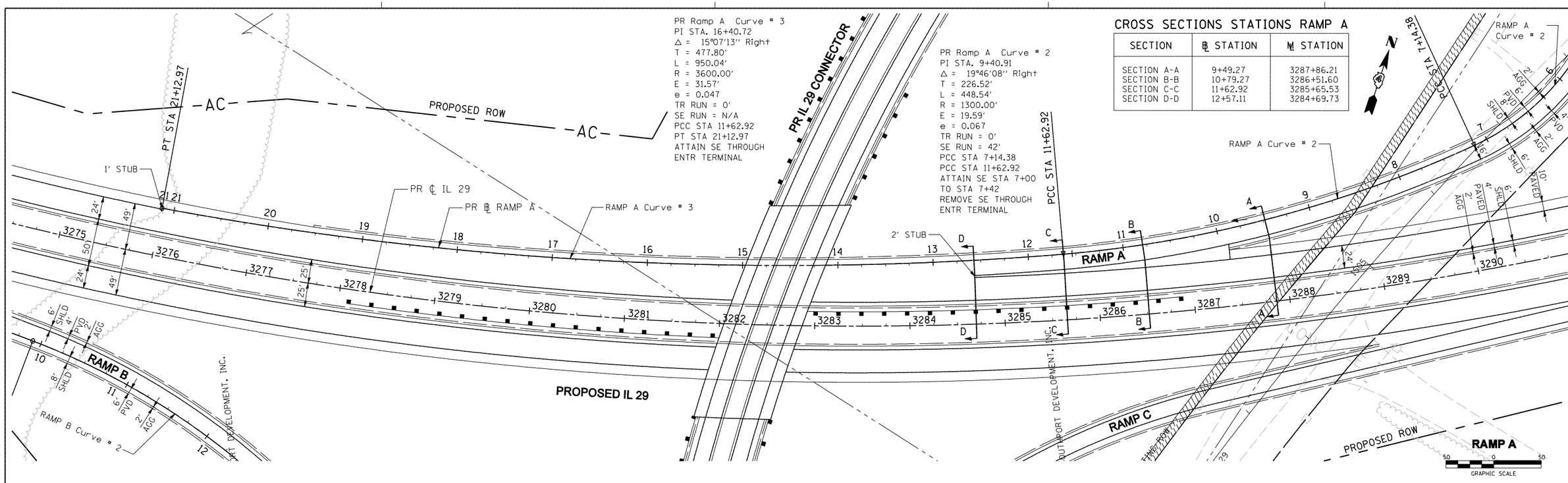
at 1-APR-2009

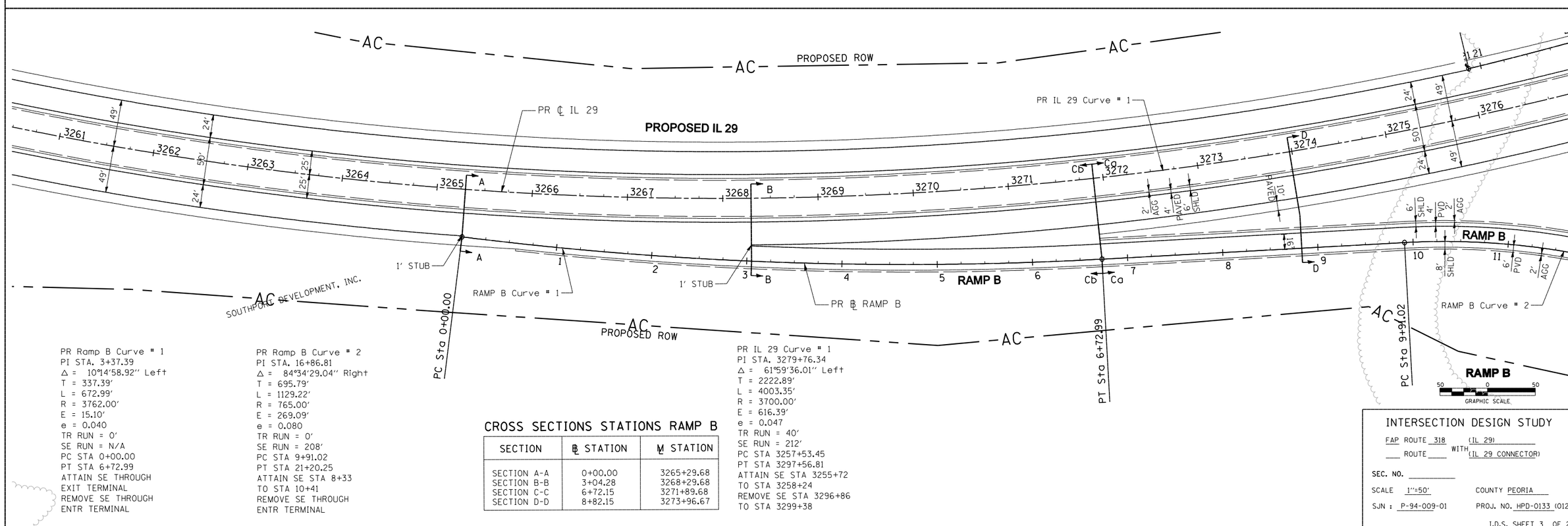


PR Ramp A Curve # 3
PI STA. 16+40.72
Δ = 15°07'13" Right
T = 477.80'
L = 950.04'
R = 3600.00'
E = 31.57'
e = 0.047
TR RUN = 0'
SE RUN = N/A
PCC STA 11+62.92
PT STA 21+12.97
ATTAIN SE THROUGH
ENTR TERMINAL

PR Ramp A Curve # 2
PI STA. 9+40.91
Δ = 19°46'08" Right
T = 226.52'
L = 448.54'
R = 1300.00'
E = 19.59'
e = 0.067
TR RUN = 0'
SE RUN = 42'
PCC STA 7+14.38
PCC STA 11+62.92
ATTAIN SE STA 7+00
TO STA 7+42
REMOVE SE THROUGH
ENTR TERMINAL

CROSS SECTIONS STATIONS RAMP A

SECTION	℄ STATION	M STATION
SECTION A-A	9+49.27	3287+86.21
SECTION B-B	10+79.27	3286+51.60
SECTION C-C	11+62.92	3285+65.53
SECTION D-D	12+57.11	3284+69.73



PR Ramp B Curve # 1
PI STA. 3+37.39
Δ = 10°14'58.92" Left
T = 337.39'
L = 672.99'
R = 3762.00'
E = 15.10'
e = 0.040
TR RUN = 0'
SE RUN = N/A
PC STA 0+00.00
PT STA 6+72.99
ATTAIN SE THROUGH
EXIT TERMINAL
REMOVE SE THROUGH
ENTR TERMINAL

PR Ramp B Curve # 2
PI STA. 16+86.81
Δ = 84°34'29.04" Right
T = 695.79'
L = 1129.22'
R = 765.00'
E = 269.09'
e = 0.080
TR RUN = 0'
SE RUN = 208'
PC STA 9+91.02
PT STA 21+20.25
ATTAIN SE STA 8+33
TO STA 10+41
REMOVE SE STA 8+33
ENTR TERMINAL

CROSS SECTIONS STATIONS RAMP B

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3265+29.68
SECTION B-B	3+04.28	3268+29.68
SECTION C-C	6+72.15	3271+89.68
SECTION D-D	8+82.15	3273+96.67

PR IL 29 Curve # 1
PI STA. 3279+76.34
Δ = 61°59'36.01" Left
T = 2222.89'
L = 4003.35'
R = 3700.00'
E = 616.39'
e = 0.047
TR RUN = 40'
SE RUN = 212'
PC STA 3257+53.45
PT STA 3297+56.81
ATTAIN SE STA 3255+72
TO STA 3258+24
REMOVE SE STA 3296+86
TO STA 3299+38

INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29)
___ ROUTE ____ WITH (IL 29 CONNECTOR)

SEC. NO. _____

SCALE 1"=50' COUNTY PEORIA

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 3 OF 20

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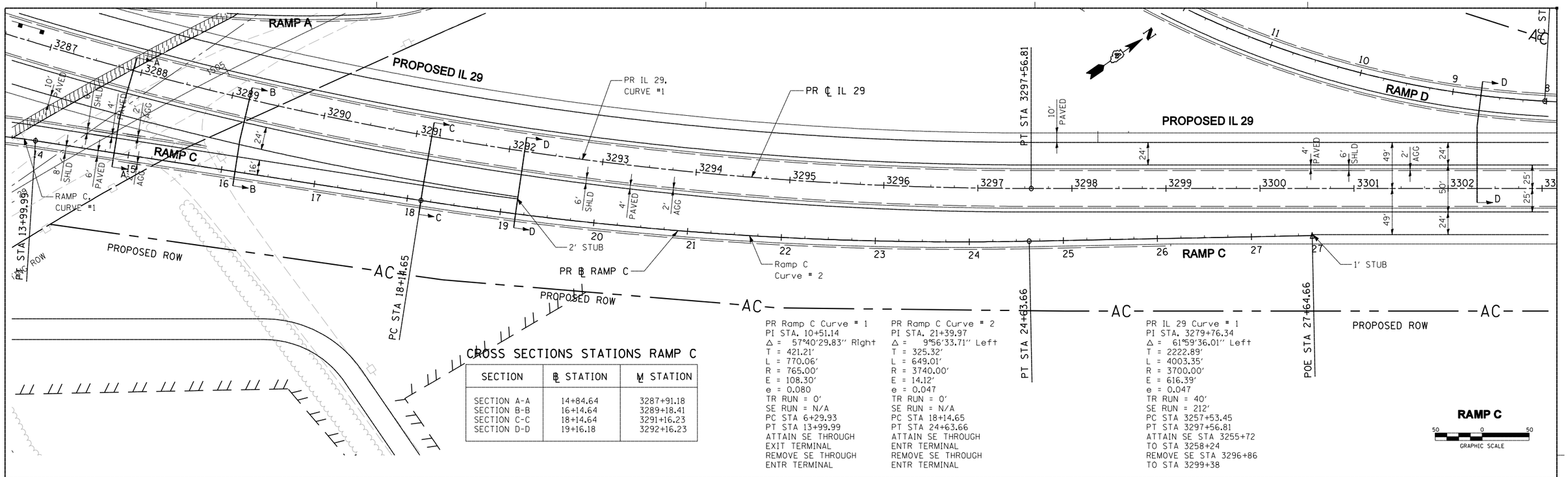


SECTION	℄ STATION	M STATION
SECTION A-A	14+84.64	3287+91.18
SECTION B-B	16+14.64	3289+18.41
SECTION C-C	18+14.64	3291+16.23
SECTION D-D	19+16.18	3292+16.23

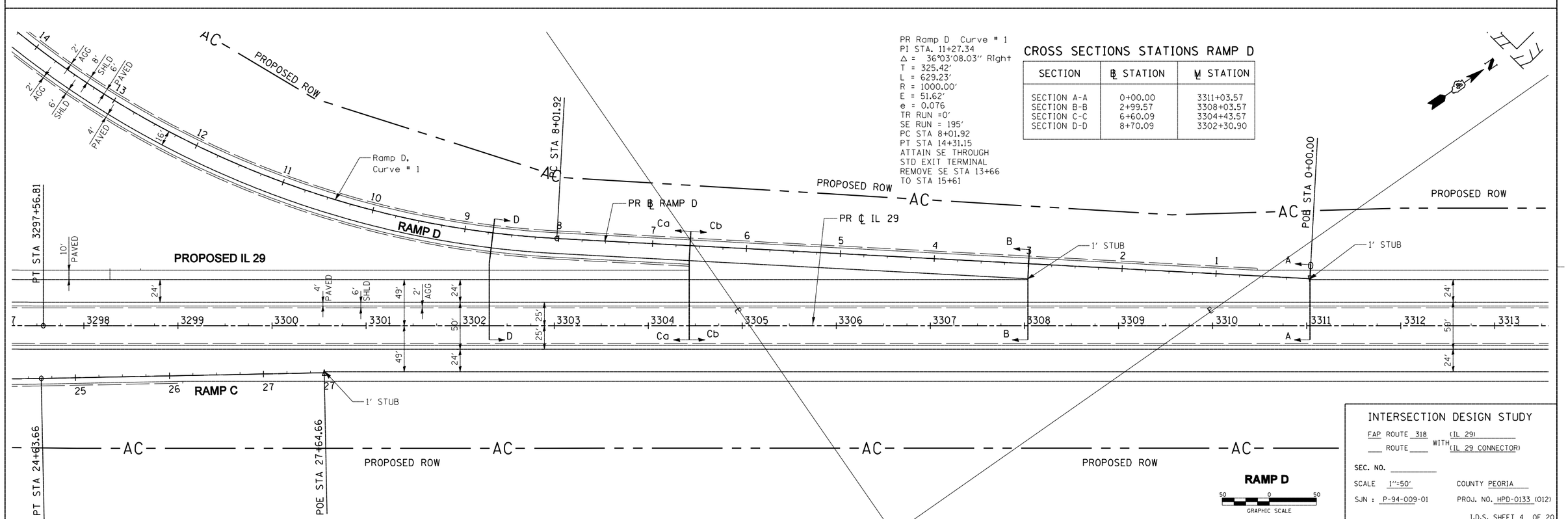
CROSS SECTIONS STATIONS RAMP C

PR Ramp C Curve # 1
PI STA. 10+51.14
Δ = 57°40'29.83" Right
T = 421.21'
L = 770.06'
R = 765.00'
E = 108.30'
e = 0.080
TR RUN = 0'
SE RUN = N/A
PC STA 6+29.93
PT STA 13+99.99
ATTAIN SE THROUGH
EXIT TERMINAL
REMOVE SE THROUGH
ENTR TERMINAL

PR Ramp C Curve # 2
PI STA. 21+39.97
Δ = 9°56'33.71" Left
T = 325.32'
L = 649.01'
R = 3740.00'
E = 14.12'
e = 0.047
TR RUN = 0'
SE RUN = N/A
PC STA 18+14.65
PT STA 24+63.66
ATTAIN SE THROUGH
ENTR TERMINAL
REMOVE SE THROUGH
ENTR TERMINAL

PR IL 29 Curve # 1
PI STA. 3279+76.34
Δ = 61°59'36.01" Left
T = 2222.89'
L = 4003.35'
R = 3700.00'
E = 616.39'
e = 0.047
TR RUN = 40'
SE RUN = 212'
PC STA 3257+53.45
PT STA 3297+56.81
ATTAIN SE STA 3255+72
TO STA 3258+24
REMOVE SE STA 3296+86
TO STA 3299+38

RAMP C
GRAPHIC SCALE



PR Ramp D Curve # 1
PI STA. 11+27.34
Δ = 36°03'08.03" Right
T = 325.42'
L = 629.23'
R = 1000.00'
E = 51.62'
e = 0.076
TR RUN =0'
SE RUN = 195'
PC STA 8+01.92
PT STA 14+31.15
ATTAIN SE THROUGH
STD EXIT TERMINAL
REMOVE SE STA 13+66
TO STA 15+61

CROSS SECTIONS STATIONS RAMP D

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3311+03.57
SECTION B-B	2+99.57	3308+03.57
SECTION C-C	6+60.09	3304+43.57
SECTION D-D	8+70.09	3302+30.90

RAMP D
GRAPHIC SCALE

INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29) WITH
___ ROUTE ___ (IL 29 CONNECTOR)

SEC. NO. _____

SCALE 1"=50' COUNTY PEORIA

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 4 OF 20

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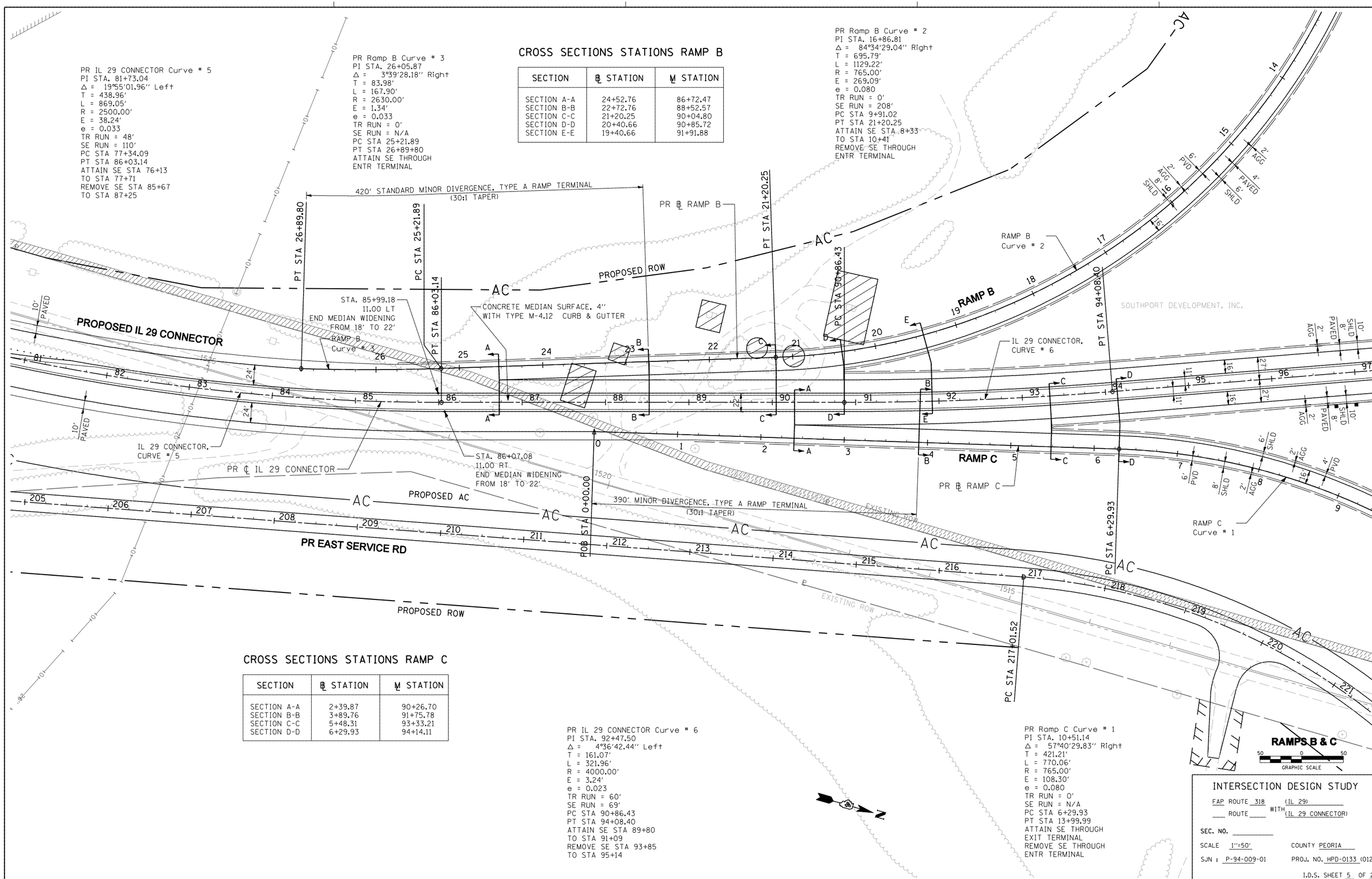
PR IL 29 CONNECTOR Curve # 5
PI STA. 81+73.04
Δ = 19°55'01.96" Left
T = 438.96'
L = 869.05'
R = 2500.00'
E = 38.24'
e = 0.033
TR RUN = 48'
SE RUN = 110'
PC STA 77+34.09
PT STA 86+03.14
ATTAIN SE STA 76+13
TO STA 77+71
REMOVE SE STA 85+67
TO STA 87+25

PR Ramp B Curve # 3
PI STA. 26+05.87
Δ = 3°39'28.18" Right
T = 83.98'
L = 167.90'
R = 2630.00'
E = 1.34'
e = 0.033
TR RUN = 0'
SE RUN = N/A
PC STA 25+21.89
PT STA 26+89+80
ATTAIN SE THROUGH
ENTR TERMINAL

CROSS SECTIONS STATIONS RAMP B

SECTION	℄ STATION	M STATION
SECTION A-A	24+52.76	86+72.47
SECTION B-B	22+72.76	88+52.57
SECTION C-C	21+20.25	90+04.80
SECTION D-D	20+40.66	90+85.72
SECTION E-E	19+40.66	91+91.88

PR Ramp B Curve # 2
PI STA. 16+86.81
Δ = 84°34'29.04" Right
T = 695.79'
L = 1129.22'
R = 765.00'
E = 269.09'
e = 0.080
TR RUN = 0'
SE RUN = 208'
PC STA 9+91.02
PT STA 21+20.25
ATTAIN SE STA 8+33
TO STA 10+41
REMOVE SE THROUGH
ENTR TERMINAL



CROSS SECTIONS STATIONS RAMP C

SECTION	℄ STATION	M STATION
SECTION A-A	2+39.87	90+26.70
SECTION B-B	3+89.76	91+75.78
SECTION C-C	5+48.31	93+33.21
SECTION D-D	6+29.93	94+14.11

PR IL 29 CONNECTOR Curve # 6
PI STA. 92+47.50
Δ = 4°36'42.44" Left
T = 161.07'
L = 321.96'
R = 4000.00'
E = 3.24'
e = 0.023
TR RUN = 60'
SE RUN = 69'
PC STA 90+86.43
PT STA 94+08.40
ATTAIN SE STA 89+80
TO STA 91+09
REMOVE SE STA 93+85
TO STA 95+14

PR Ramp C Curve # 1
PI STA. 10+51.14
Δ = 57°40'29.83" Right
T = 421.21'
L = 770.06'
R = 765.00'
E = 108.30'
e = 0.080
TR RUN = 0'
SE RUN = N/A
PC STA 6+29.93
PT STA 13+99.99
ATTAIN SE THROUGH
EXIT TERMINAL
REMOVE SE THROUGH
ENTR TERMINAL

INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29)
___ ROUTE ___ WITH (IL 29 CONNECTOR)

SEC. NO. _____

SCALE 1"=50' COUNTY PEORIA

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 5 OF 20

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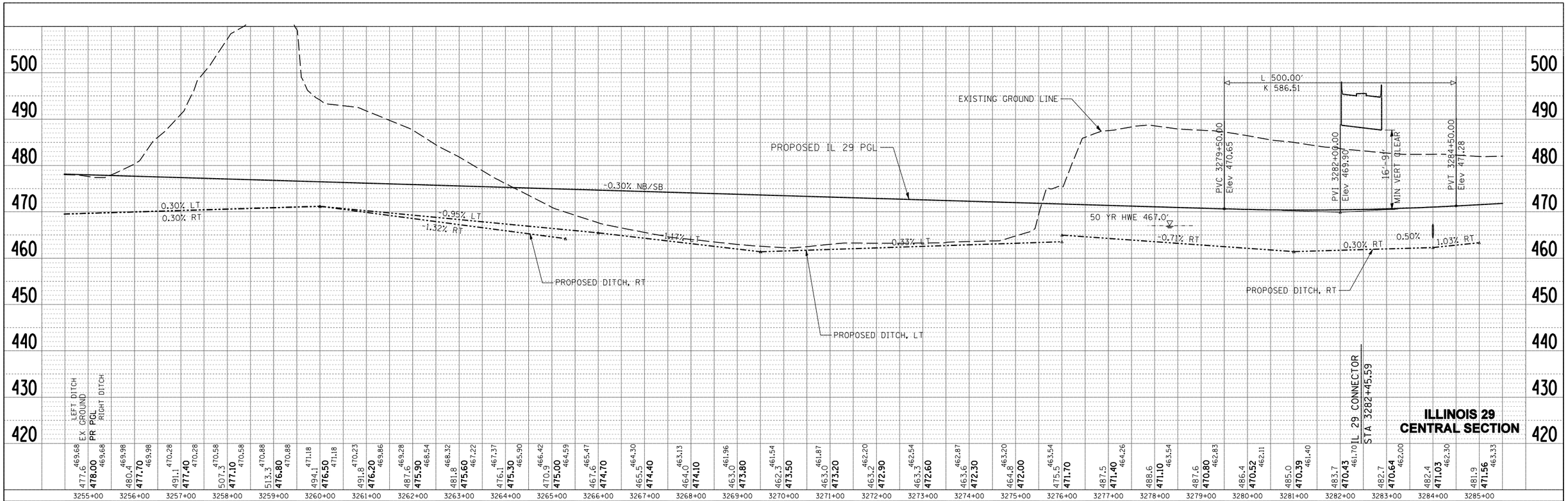

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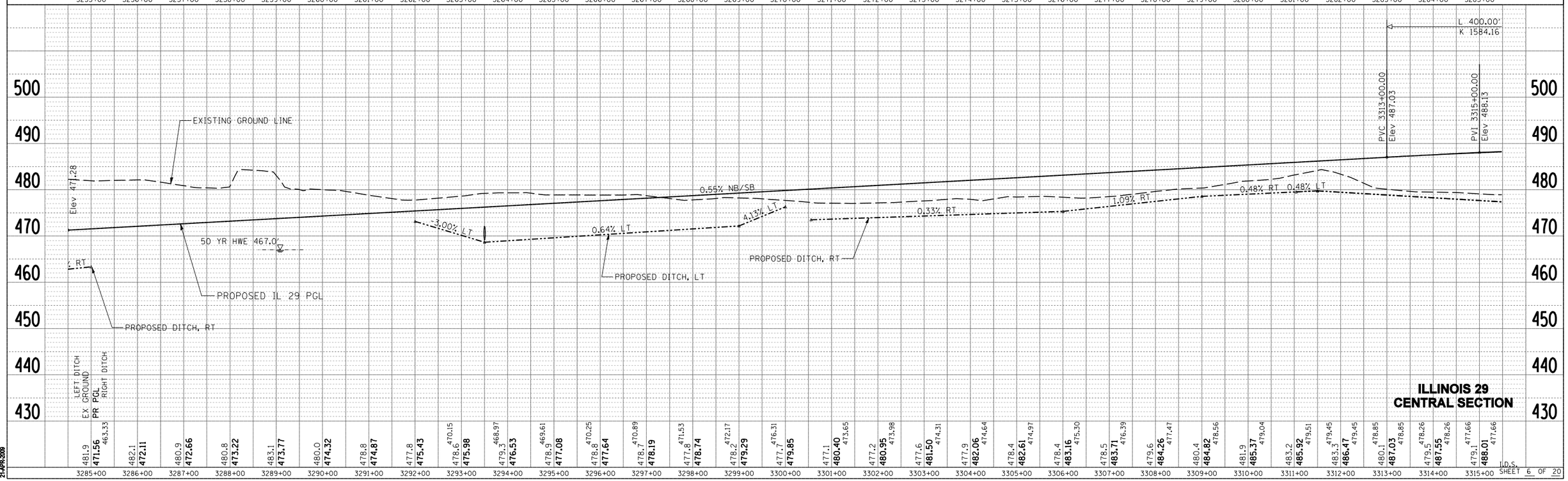

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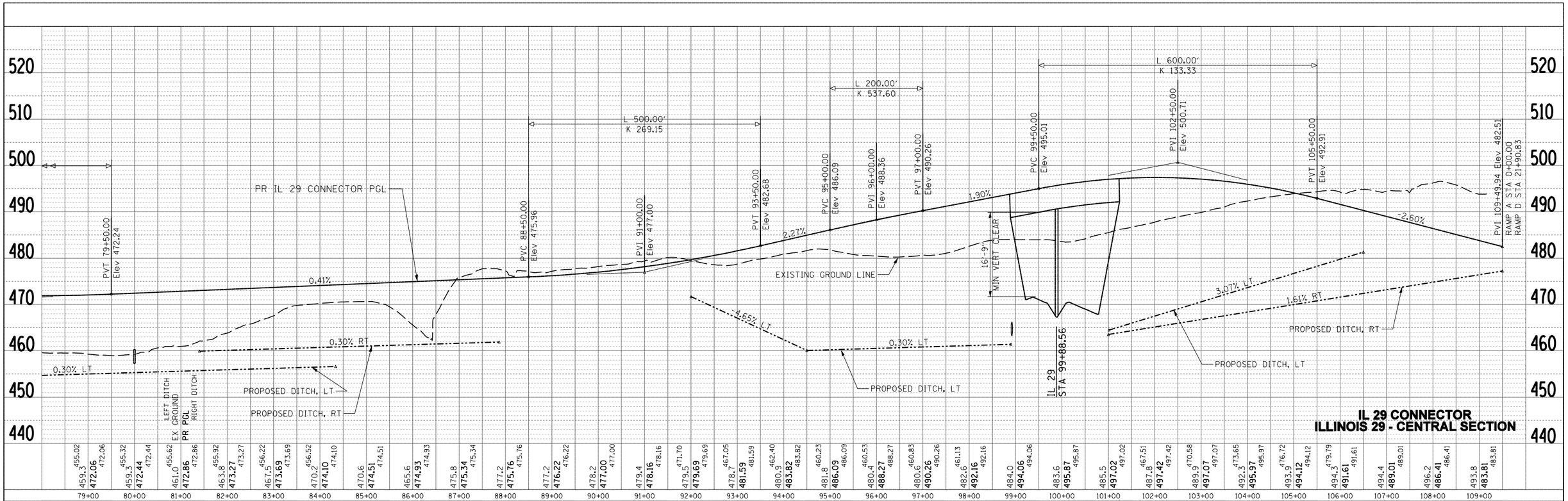

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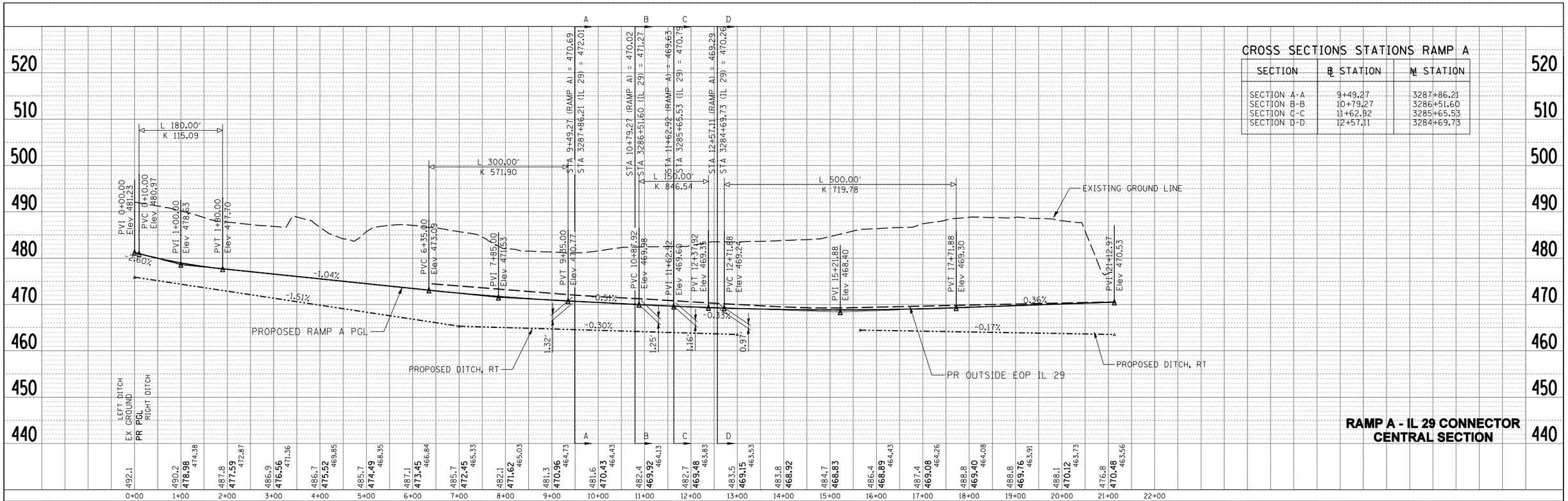
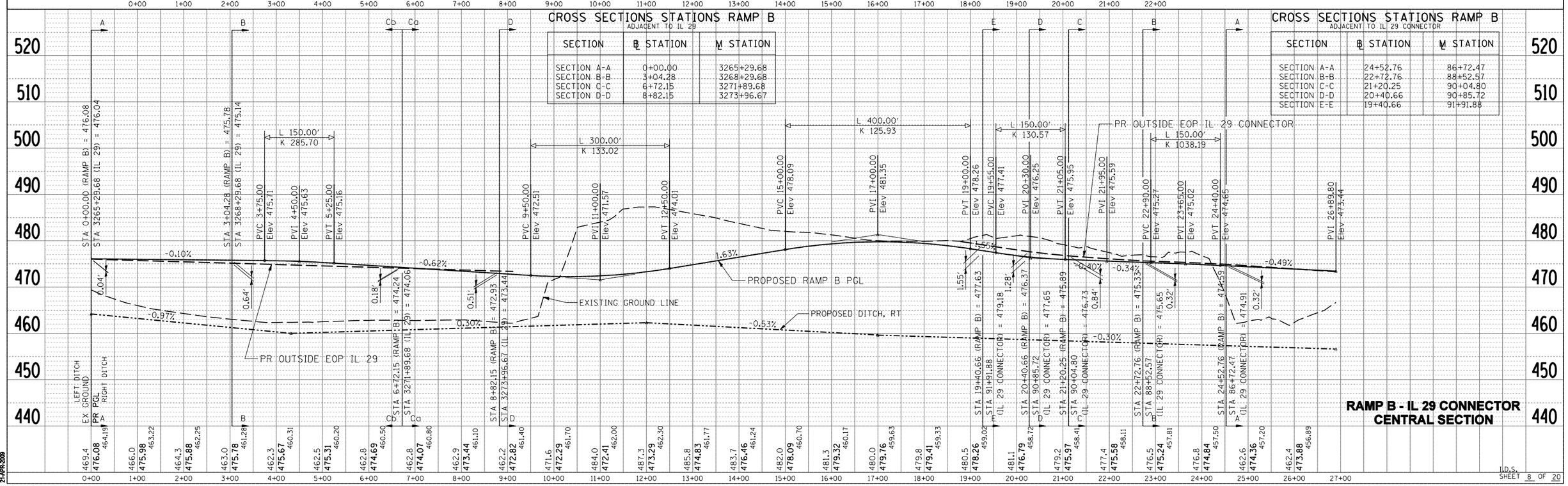
SHEET 7 OF 20





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I.D.S.
SHEET 8 OF 20

CROSS SECTIONS STATIONS RAMP C

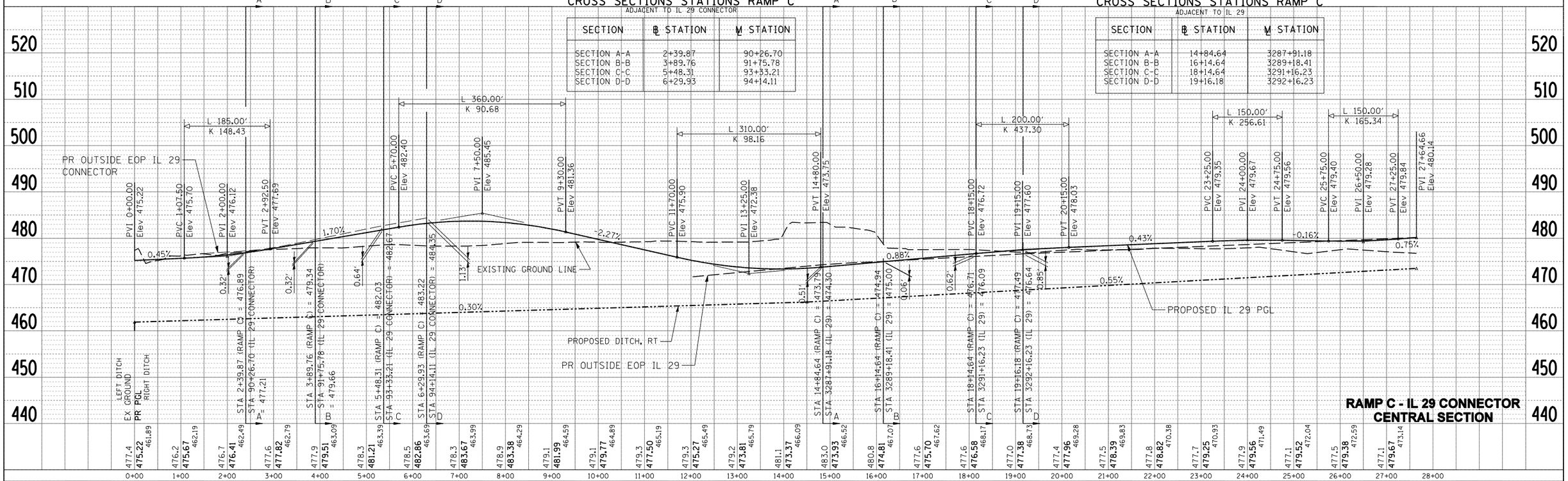
ADJACENT TO IL 29 CONNECTOR

SECTION	℄ STATION	M STATION
SECTION A-A	2+39.87	90+26.70
SECTION B-B	3+89.76	91+75.78
SECTION C-C	5+48.31	93+33.21
SECTION D-D	6+29.93	94+14.11

CROSS SECTIONS STATIONS RAMP C

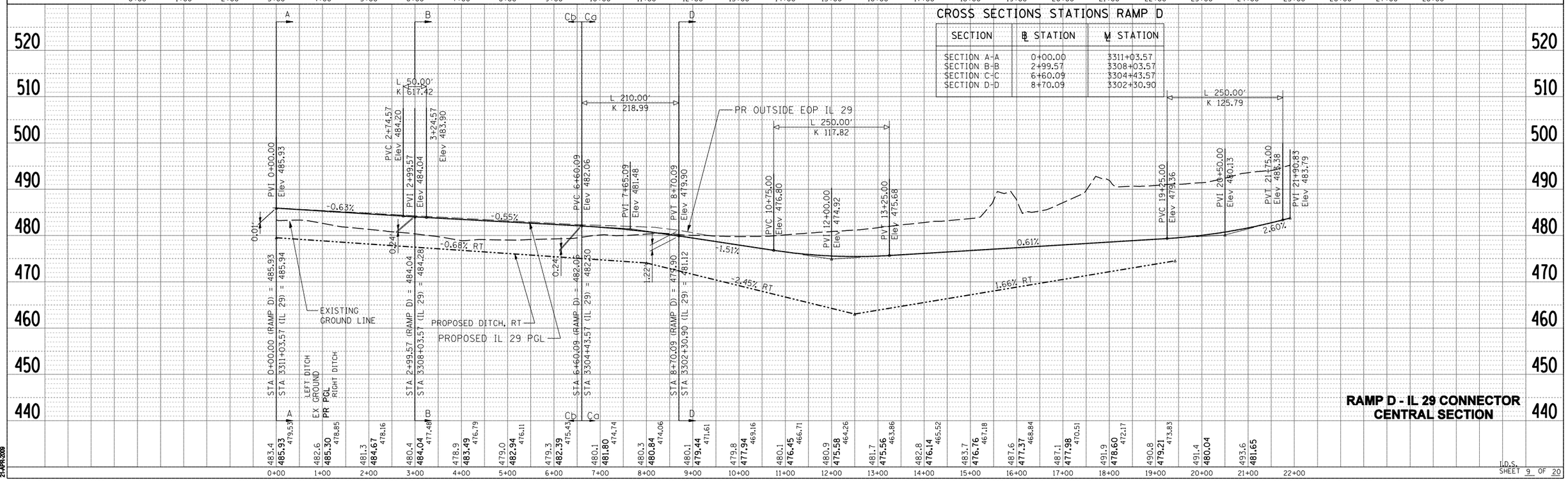
ADJACENT TO IL 29

SECTION	℄ STATION	M STATION
SECTION A-A	14+84.64	3287+91.18
SECTION B-B	16+14.64	3289+18.41
SECTION C-C	18+14.64	3291+16.23
SECTION D-D	19+16.18	3292+16.23



CROSS SECTIONS STATIONS RAMP D

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3311+03.57
SECTION B-B	2+99.57	3308+03.57
SECTION C-C	6+60.09	3304+43.57
SECTION D-D	8+70.09	3302+30.90



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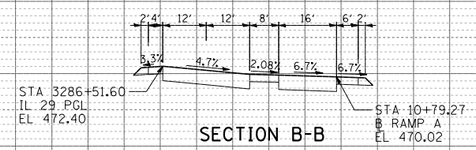
I.D.S.
SHEET 9 OF 20

CROSS SECTIONS STATIONS RAMP A

SECTION	℄ STATION	M STATION
SECTION A-A	9+49.27	3287+86.21
SECTION B-B	10+79.27	3286+51.60
SECTION C-C	11+62.92	3285+65.53
SECTION D-D	12+57.11	3284+69.73



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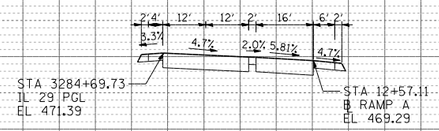
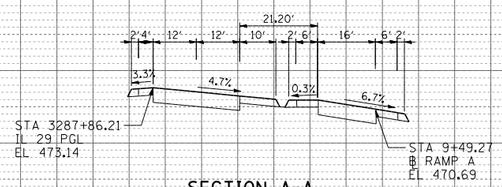
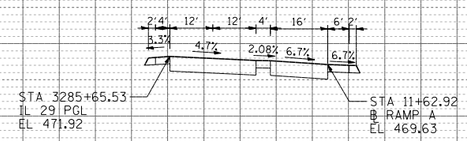


SECTION D-D



SECTION A-A

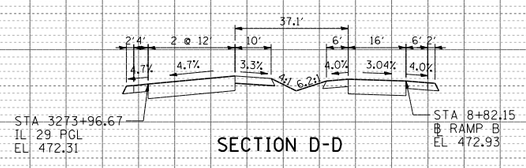


SECTION C-C

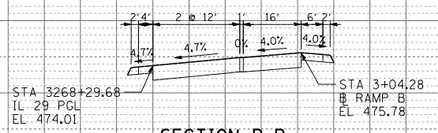
CROSS SECTIONS STATIONS RAMP B

ADJACENT TO IL 29

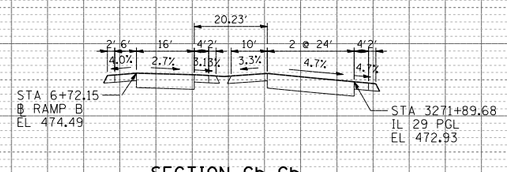
SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3265+29.68
SECTION B-B	3+04.28	3268+29.68
SECTION C-C	6+72.15	3271+89.68
SECTION D-D	8+82.15	3273+96.67



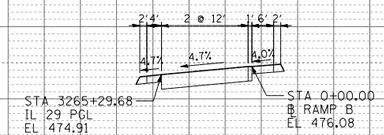
SECTION D-D



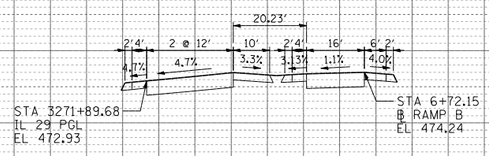
SECTION B-B



SECTION Cb-Cb



SECTION A-A

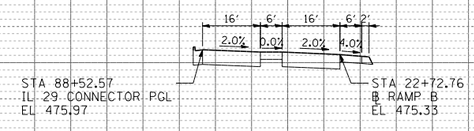


SECTION Ca-Ca

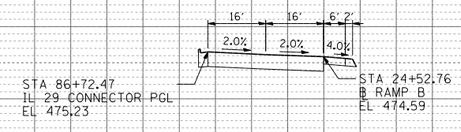
CROSS SECTIONS STATIONS RAMP B

ADJACENT TO IL 29 CONNECTOR

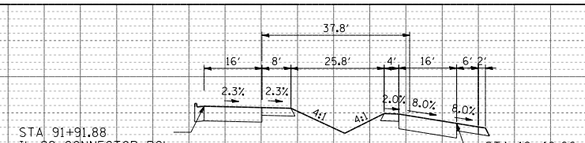
SECTION	℄ STATION	M STATION
SECTION A-A	24+52.76	86+72.47
SECTION B-B	22+72.76	88+52.57
SECTION C-C	21+20.25	90+04.80
SECTION D-D	20+40.66	90+85.72
SECTION E-E	19+40.66	91+91.88



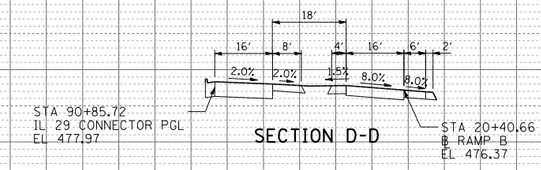
SECTION B-B



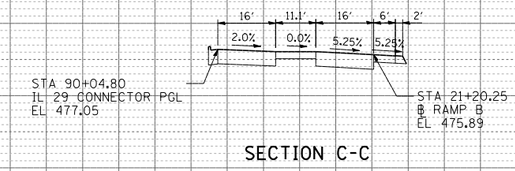
SECTION A-A



SECTION E-E



SECTION D-D



SECTION C-C

RAMP CROSS SECTIONS - IL 29 CONNECTOR
CENTRAL SECTION

I.D.S.
SHEET 10 OF 20

PLAN
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PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

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GRADES CHECKED
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NOTE BOOK
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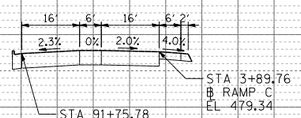
21-APR-2009

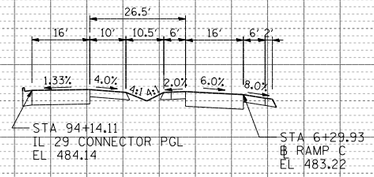
CROSS SECTIONS STATIONS RAMP C

ADJACENT TO IL 29 CONNECTOR

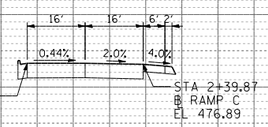
SECTION	℄ STATION	M STATION
SECTION A-A	2+39.87	90+26.70
SECTION B-B	3+89.76	91+75.78
SECTION C-C	5+48.31	93+33.21
SECTION D-D	6+29.93	94+14.11



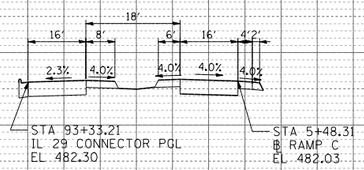
SECTION B-B



SECTION D-D



SECTION A-A

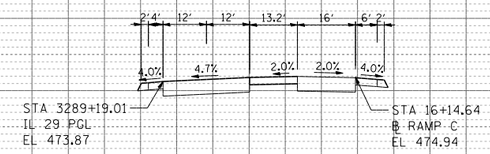


SECTION C-C

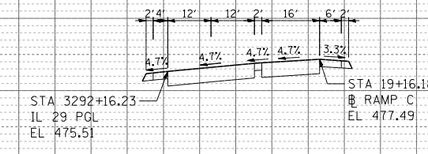
CROSS SECTIONS STATIONS RAMP C

ADJACENT TO IL 29

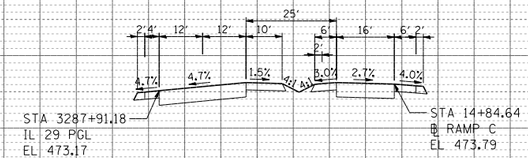
SECTION	℄ STATION	M STATION
SECTION A-A	14+84.64	3287+91.18
SECTION B-B	16+14.64	3289+18.41
SECTION C-C	18+14.64	3291+16.23
SECTION D-D	19+16.18	3292+16.23



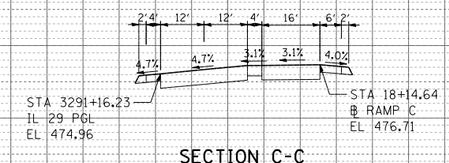
SECTION B-B



SECTION D-D



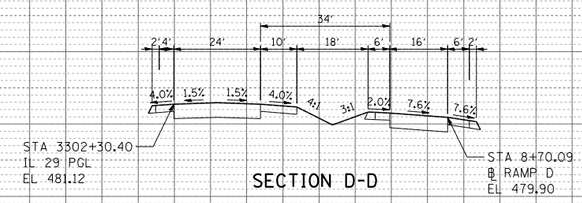
SECTION A-A



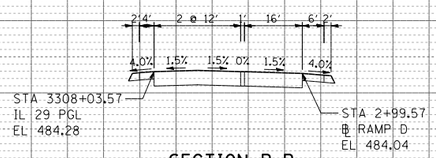
SECTION C-C

CROSS SECTIONS STATIONS RAMP D

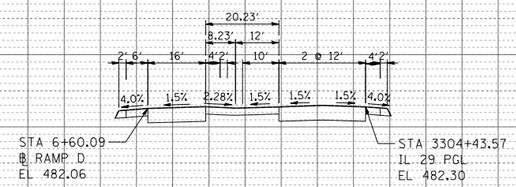
SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3311+03.57
SECTION B-B	2+99.57	3308+03.57
SECTION C-C	6+60.09	3304+43.57
SECTION D-D	8+70.09	3302+30.90



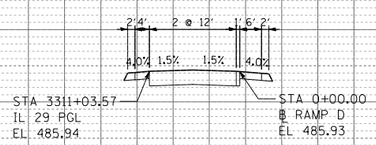
SECTION D-D



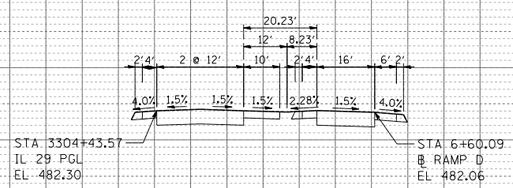
SECTION B-B



SECTION Cb-Cb



SECTION A-A



SECTION Ca-Ca

RAMP CROSS SECTIONS - IL 29 CONNECTOR CENTRAL SECTION

I.D.S.
SHEET 11 OF 20

PLAN: SURVEYED / PLOTTED / ALIGNMENT CHECKED / RT. OF WAY CHECKED / CADD FILE NAME / NOTE BOOK / NO. / BY / DATE

PROFILE: SURVEYED / PLOTTED / GRADES CHECKED / B.M. NOTED / STRUCTURE NOTATNS CH'KD / NOTE BOOK / NO. / BY / DATE

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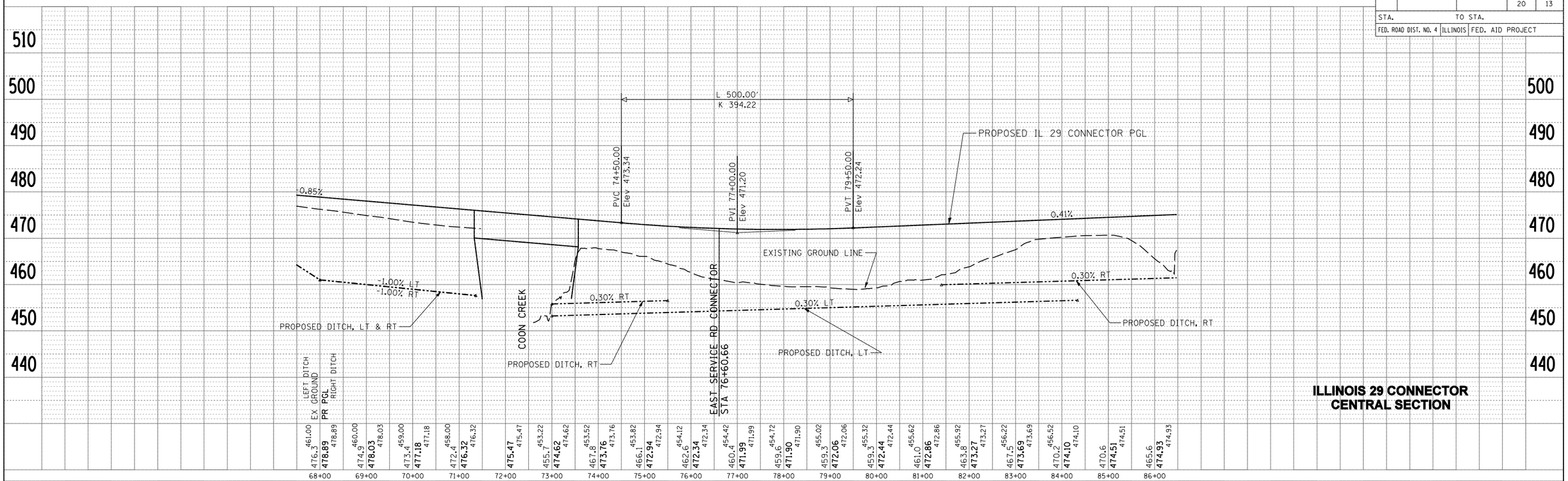
21-APR-2009

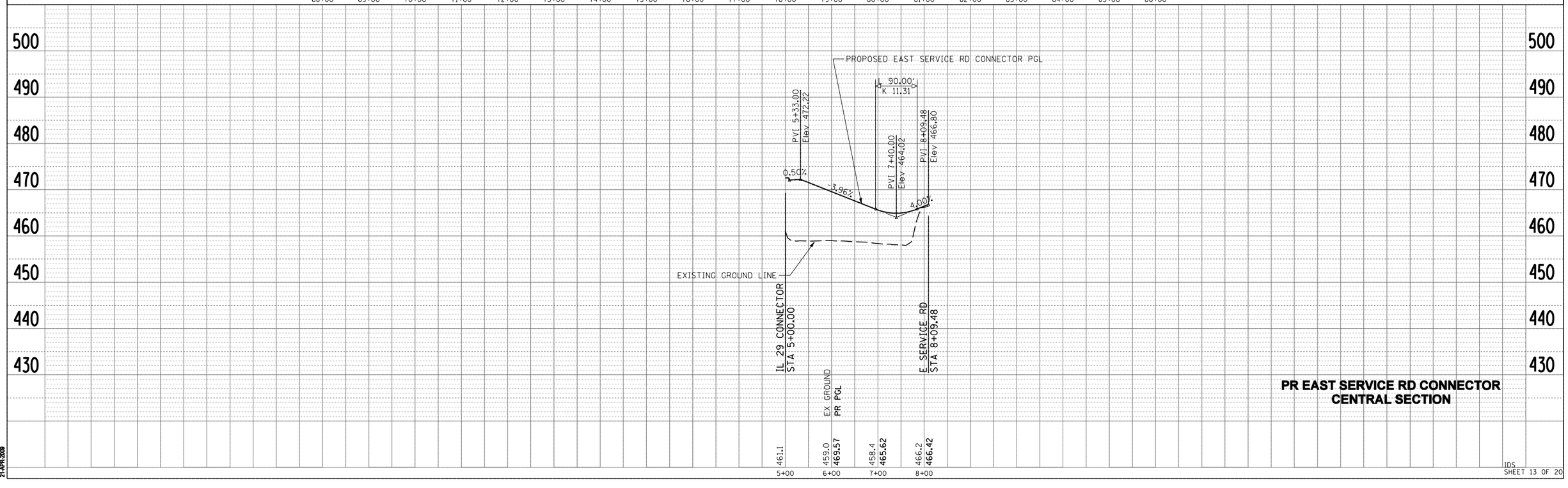
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			20	13

STA. TO STA.

FED. ROAD DIST. NO. 4 | ILLINOIS | FED. AID PROJECT



ILLINOIS 29 CONNECTOR
CENTRAL SECTION



PR EAST SERVICE RD CONNECTOR
CENTRAL SECTION

PLAN
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PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CH'KD
NOTE BOOK
NO.
BY
DATE

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21-APR-2009

IDS
SHEET 13 OF 20

PR HART LN Curve # 2
PI STA. 310+36.87
Δ = 10°51'26.63" Left
T = 190.07'
L = 378.99'
R = 2000.00'
E = 9.01'
SE = 0.029
TR RUN = 45'
SE RUN = 65'
PC STA 308+46.80
PT STA 312+25.80
ATTAIN SE STA 307+58
TO STA 308+68
REMOVE SE STA 312+04
TO STA 313+14

PR HART LN / REL BOEHLE RD Curve # 3
PI STA. 319+50.76
Δ = 7°20'23.71" Right
T = 160.35'
L = 320.26'
R = 2500.00'
E = 5.14'
SE = 0.026
TR RUN = 45'
SE RUN = 58'
PC STA 317+90.41
PT STA 321+10.67
ATTAIN SE STA 317+07
TO STA 318+10
REMOVE SE STA 320+91
TO STA 321+94

PR YANKEE LN Curve # 1
PI STA. 47+94.76
Δ = 7°03'34.83" Left
T = 129.54'
L = 258.75'
R = 2100.00'
E = 3.99'
SE = 0.032
TR RUN = 49'
SE RUN = 78'
PC STA 46+65.22
PT STA 49+23.97
ATTAIN SE ON EXISTING PAVEMENT
REMOVE SE STA 48+98
TO STA 50+25

CILCO EL.
BILLY D. STROUD & JULIE A. STROUD
EDWIN D. WINTER & ARLENE S. WINTER
JOHN C. RAMSEY & MILDRED A. RAMSEY
CILCO ELECTRIC EASEMENT
YANKEE LANE
EXISTING ROW
PR ℄ YANKEE LANE
PR YANKEE LN Curve # 1
PC STA 46+65.22
MATCH EXISTING
PROPOSED ROW
NEIGHBORHOOD HOUSE ASSOCIATION
PR TEMP EASEMENT
PR ROW
STA 49+36.58
12.00' RT
PR RET WALL
BEGIN STA 318+49
END STA 319+88
HAMMETT CEMETERY
PR ℄ RELOCATED BOEHLE RD
STA 49+22.08
12.00' LT
PT STA 49+23.97
STA 319+59.94
12.00' LT
STA 321+00.62
12.00' LT
RELOCATED BOEHLE RD
MATCHLINE STA 323+00.00 SEE SHEET 16 OF 20
PT STA 312+25.80
PR ℄ HART LANE
HART LANE
PC STA 308+46.80
PR HART LN Curve # 2
PR HART LN / REL BOEHLE RD Curve # 3
PC STA 317+90.41
STA 319+88.59
12.00' RT
STA 50+38.91
10.00' RT
PT STA 321+10.67
STA 320+94.18
12.00' RT
STA 50+71.90
10.00' LT
PC STA 50+89.56
PR SERVICE RD
℄ STA 320+23.46 HART LANE/ RELOCATED BOEHLE RD =
℄ STA 50+00.00 YANKEE LANE / PR SERVICE ROAD
PR TEMP EASEMENT
STA 53+00.00
MATCH EXISTING
CHILLICOTHE SPORTSMEN'S CLUB
PT STA 51+75.71
PC STA 52+34.58
PT STA 53+76.98
POE STA 54+09.23
RIVERSIDE MATERIALS, INC.
PR ℄ PR SERVICE RD
PROPOSED ROW
PR RAMP D
PROPOSED IL 29
GRAPHIC SCALE

INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29) WITH (BOEHLE RD CONN/ SERVICE RD CONN)
ROUTE
SEC. NO.
SCALE 1"=50'
COUNTY PEORIA
SJN : P-94-009-01
PROJ. NO. HPD-0133(012)
I.D.S. SHEET 15 OF 20

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•DATE-TIME•
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•REF•
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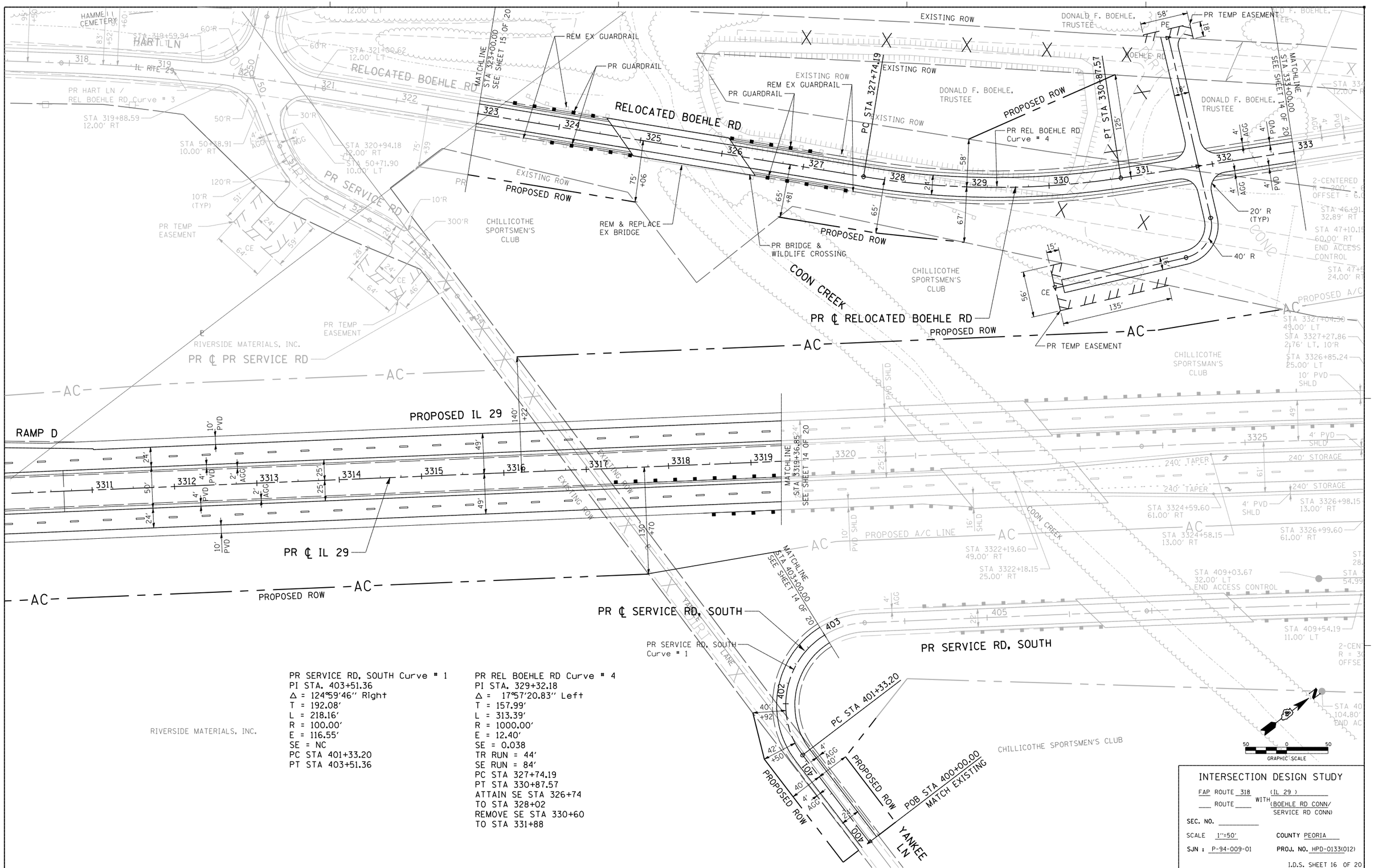

PR SERVICE RD, SOUTH Curve # 1
PI STA. 403+51.36
Δ = 124°59'46" Right
T = 192.08'
L = 218.16'
R = 100.00'
E = 116.55'
SE = NC
PC STA 401+33.20
PT STA 403+51.36

PR REL BOEHLE RD Curve # 4
PI STA. 329+32.18
Δ = 17°57'20.83" Left
T = 157.99'
L = 313.39'
R = 1000.00'
E = 12.40'
SE = 0.038
TR RUN = 44'
SE RUN = 84'
PC STA 327+74.19
PT STA 330+87.57
ATTAIN SE STA 326+74
TO STA 328+02
REMOVE SE STA 330+60
TO STA 331+88

•DGN-SPEC•
•DATE-TIME•
•REF•
•REF•
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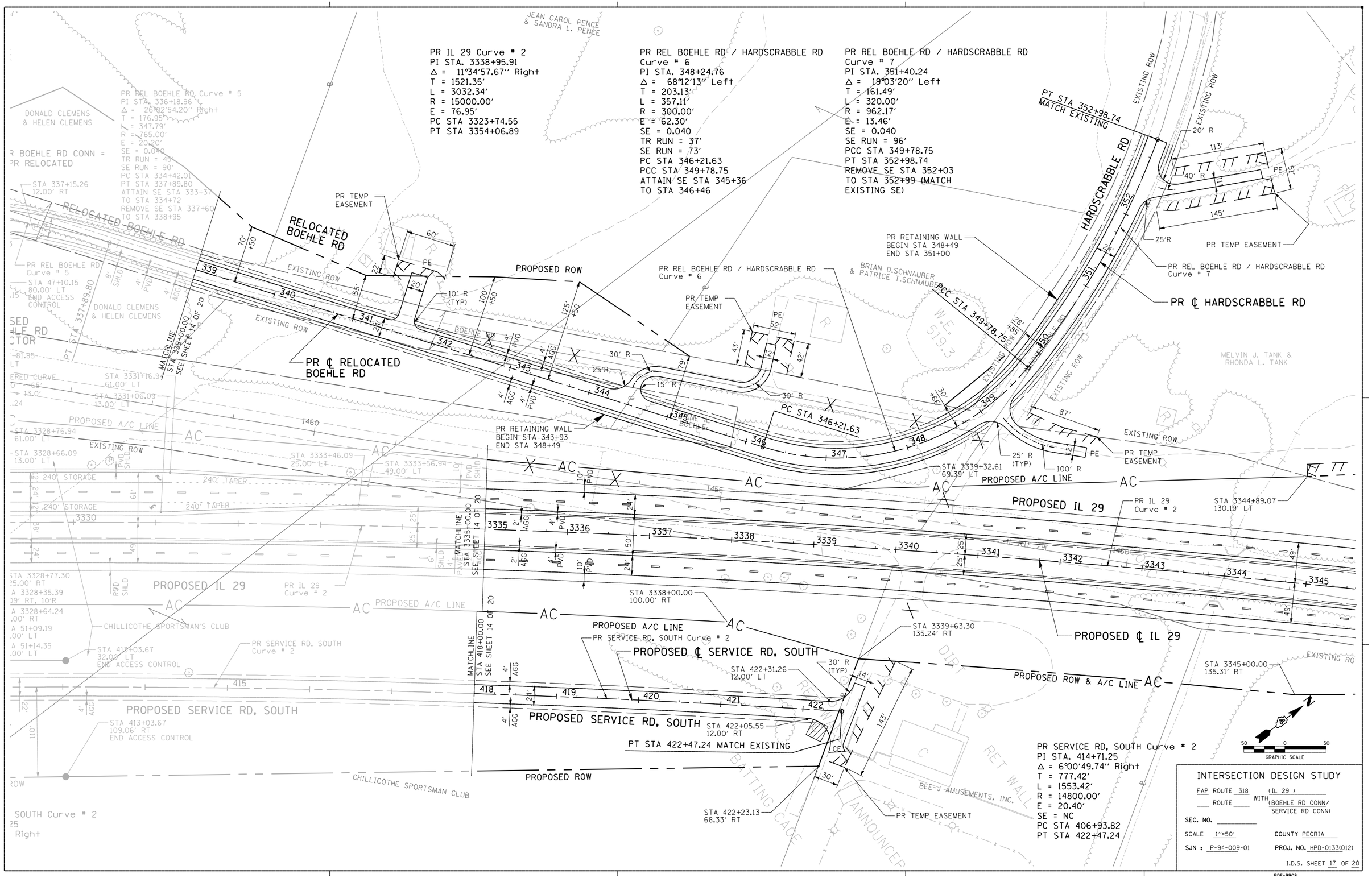
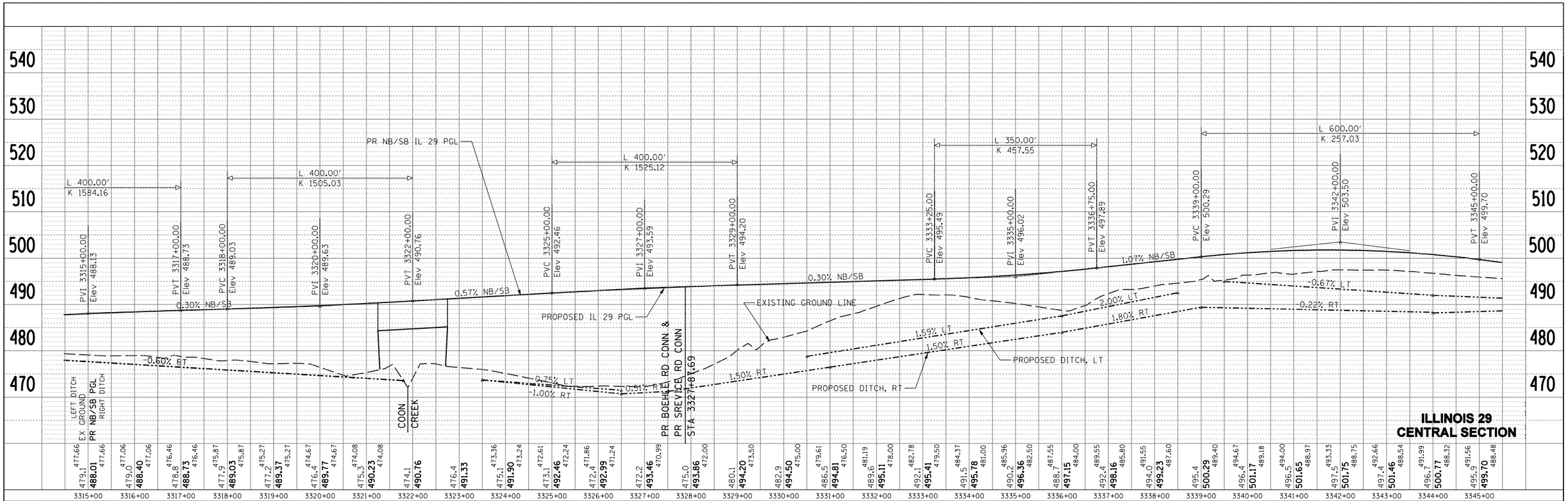
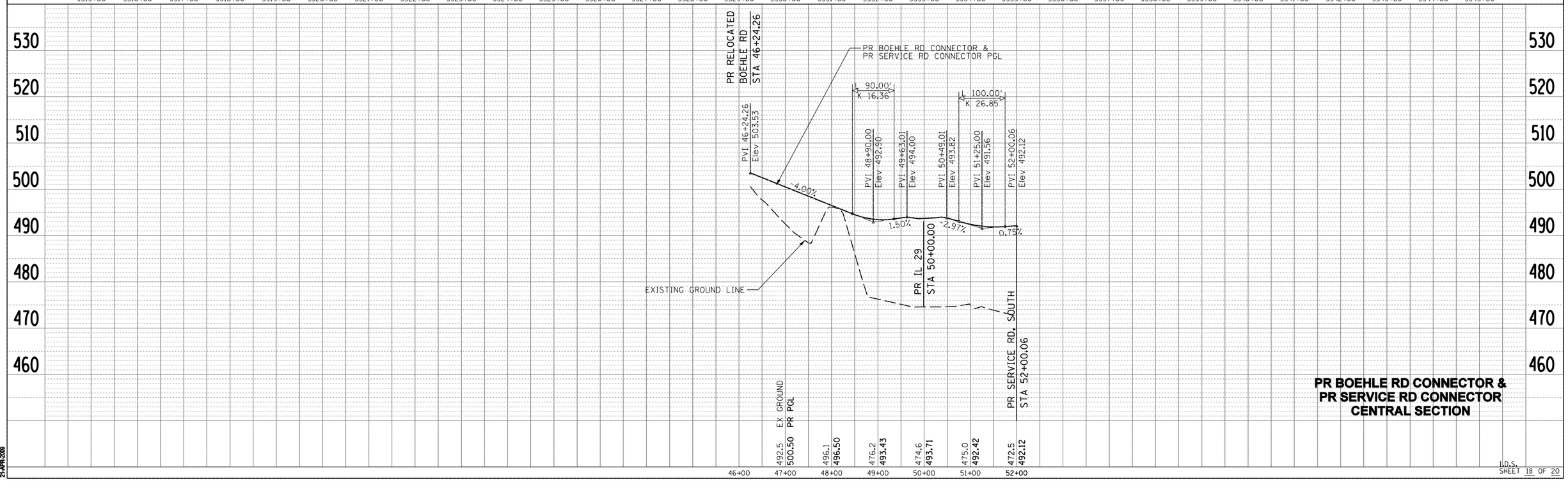
27-APR-2009


PR IL 29 Curve # 2
PI STA. 3338+95.91
Δ = 11°34'57.67" Right
T = 1521.35'
L = 3032.34'
R = 15000.00'
E = 76.95'
PC STA 3323+74.55
PT STA 3354+06.89
PR REL BOEHLE RD / HARDSCRABBLE RD
Curve # 6
PI STA. 348+24.76
Δ = 68°12'13" Left
T = 203.13'
L = 357.11'
R = 300.00'
E = 62.30'
SE = 0.040
TR RUN = 37'
SE RUN = 73'
PC STA 346+21.63
PCC STA 349+78.75
ATTAIN SE STA 345+36
TO STA 346+46
PR REL BOEHLE RD / HARDSCRABBLE RD
Curve # 7
PI STA. 351+40.24
Δ = 19°03'20" Left
T = 161.49'
L = 320.00'
R = 962.17'
E = 13.46'
SE = 0.040
SE RUN = 96'
PCC STA 349+78.75
PT STA 352+98.74
REMOVE SE STA 352+03
TO STA 352+99 (MATCH
EXISTING SE)
PR REL BOEHLE RD, Curve # 5
PI STA. 336+18.96
Δ = 26°02'54.20" Right
T = 176.95'
L = 347.79'
R = 765.00'
E = 20.20'
SE = 0.040
TR RUN = 45'
SE RUN = 90'
PC STA 334+42.01
PT STA 337+89.80
ATTAIN SE STA 333+37
TO STA 334+72
REMOVE SE STA 337+60
TO STA 338+95
JEAN CAROL PENCE & SANDRA L. PENCE
DONALD CLEMENS & HELEN CLEMENS
BRIAN D.SCHNAUBER & PATRICE T.SCHNAUBER
MELVIN J. TANK & RHONDA L. TANK
CHILLICOTHE SPORTSMAN'S CLUB
BEE-J AMUSEMENTS, INC.
RELOCATED BOEHLE RD
PR ℄ RELOCATED BOEHLE RD
PROPOSED ROW
PR TEMP EASEMENT
PR RETAINING WALL
BEGIN STA 348+49
END STA 351+00
PR RETAINING WALL
BEGIN STA 343+93
END STA 348+49
PR REL BOEHLE RD / HARDSCRABBLE RD
Curve # 6
PR REL BOEHLE RD / HARDSCRABBLE RD
Curve # 7
PR ℄ HARDSCRABBLE RD
HARDSCRABBLE RD
PT STA 352+98.74
MATCH EXISTING
PC STA 346+21.63
PCC STA 349+78.75
STA 3339+32.61
69.39' LT
PROPOSED A/C LINE
PROPOSED IL 29
PR IL 29
Curve # 2
STA 3344+89.07
130.19' LT
PROPOSED ℄ IL 29
STA 3338+00.00
100.00' RT
STA 3339+63.30
135.24' RT
STA 3345+00.00
135.31' RT
PROPOSED ROW & A/C LINE
PROPOSED A/C LINE
PR SERVICE RD, SOUTH Curve # 2
PROPOSED ℄ SERVICE RD, SOUTH
STA 422+31.26
12.00' LT
STA 422+05.55
12.00' RT
PT STA 422+47.24 MATCH EXISTING
PROPOSED SERVICE RD, SOUTH
STA 413+03.67
32.00' LT
END ACCESS CONTROL
STA 413+03.67
109.06' RT
END ACCESS CONTROL
STA 422+23.13
68.33' RT
PR TEMP EASEMENT
PROPOSED ROW
MATCHLINE
STA 339+00.00
SEE SHEET 14 OF 20
MATCHLINE
STA 335+00.00
SEE SHEET 14 OF 20
MATCHLINE
STA 418+00.00
SEE SHEET 14 OF 20
PR SERVICE RD, SOUTH Curve # 2
PI STA. 414+71.25
Δ = 6°00'49.74" Right
T = 777.42'
L = 1553.42'
R = 14800.00'
E = 20.40'
SE = NC
PC STA 406+93.82
PT STA 422+47.24
GRAPHIC SCALE
INTERSECTION DESIGN STUDY
FAP ROUTE 318 (IL 29)
ROUTE
WITH (BOEHLE RD CONN/ SERVICE RD CONN)
SEC. NO.
SCALE 1"=50'
COUNTY PEORIA
SJN : P-94-009-01
PROJ. NO. HPD-0133(012)
I.D.S. SHEET 17 OF 20





PR BOEHLE RD CONNECTOR &
PR SERVICE RD CONNECTOR
CENTRAL SECTION

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
PLAN FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CH'KD
NOTE BOOK
NO.
BY
DATE

I.D.S.
SHEET 18 OF 20

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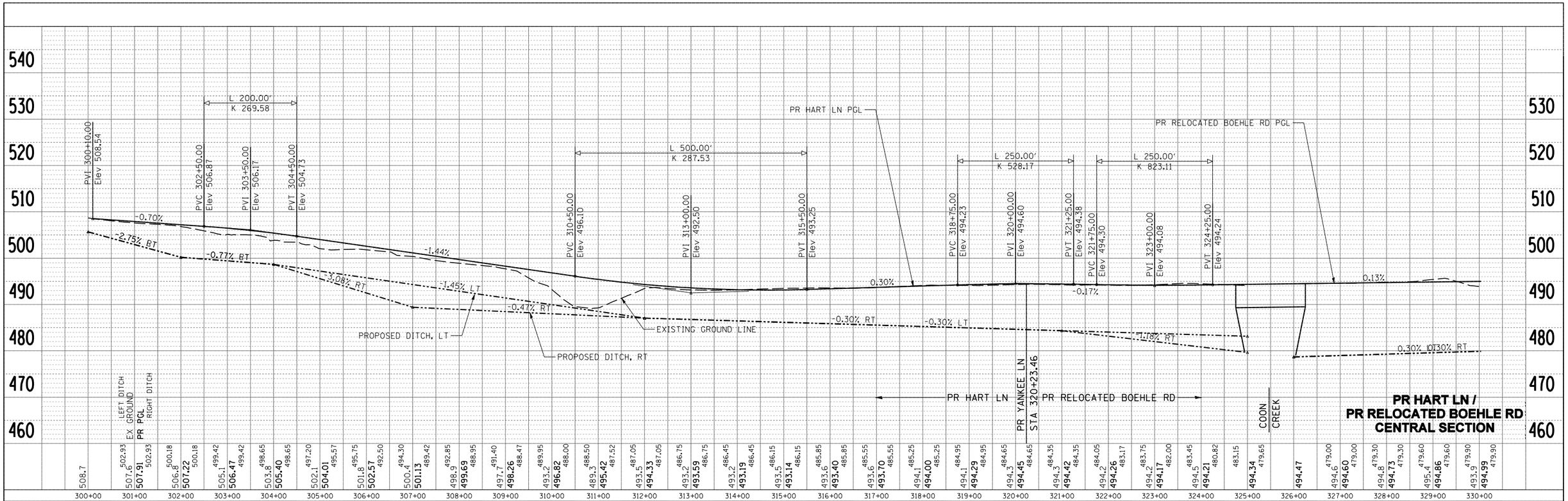
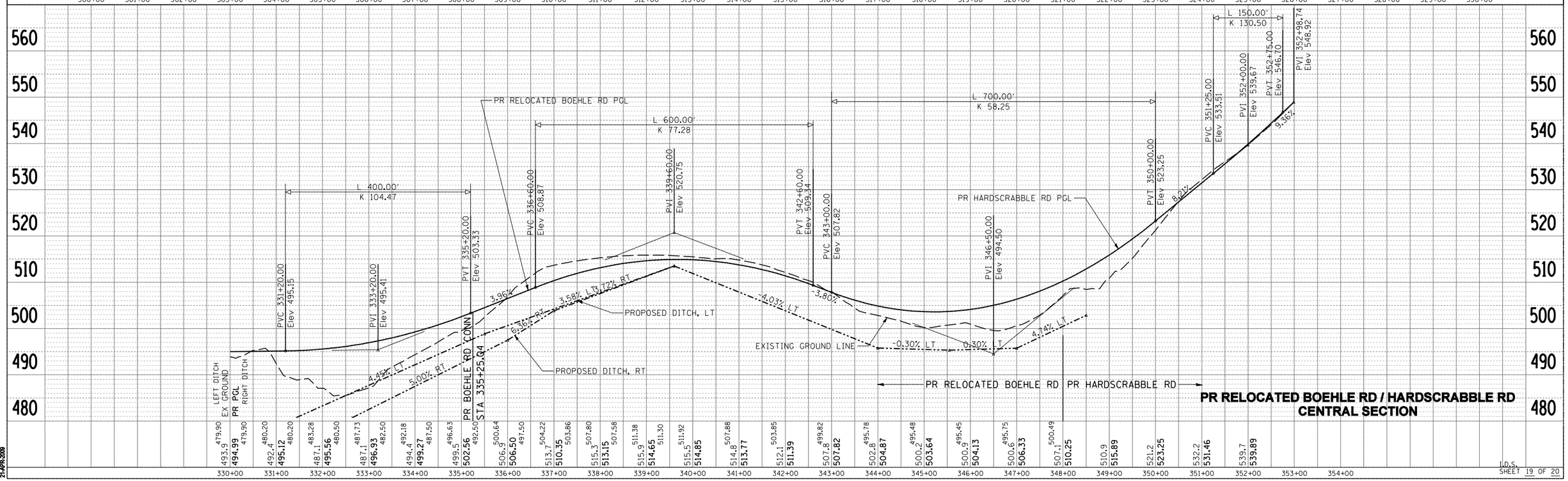
21-APR-2009





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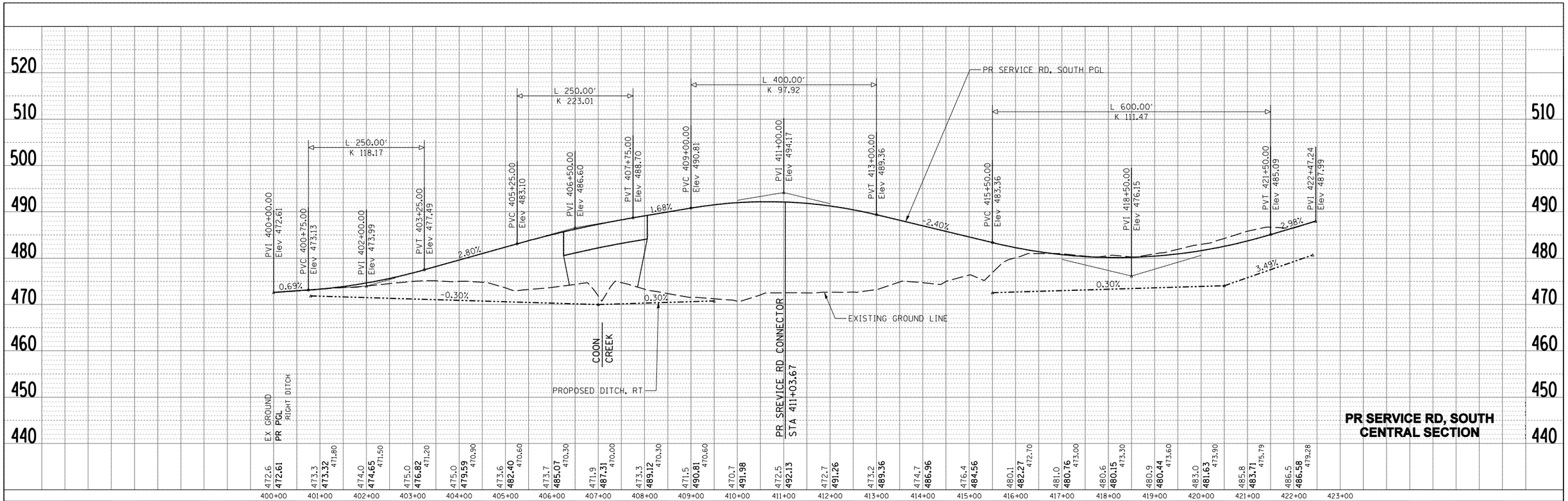

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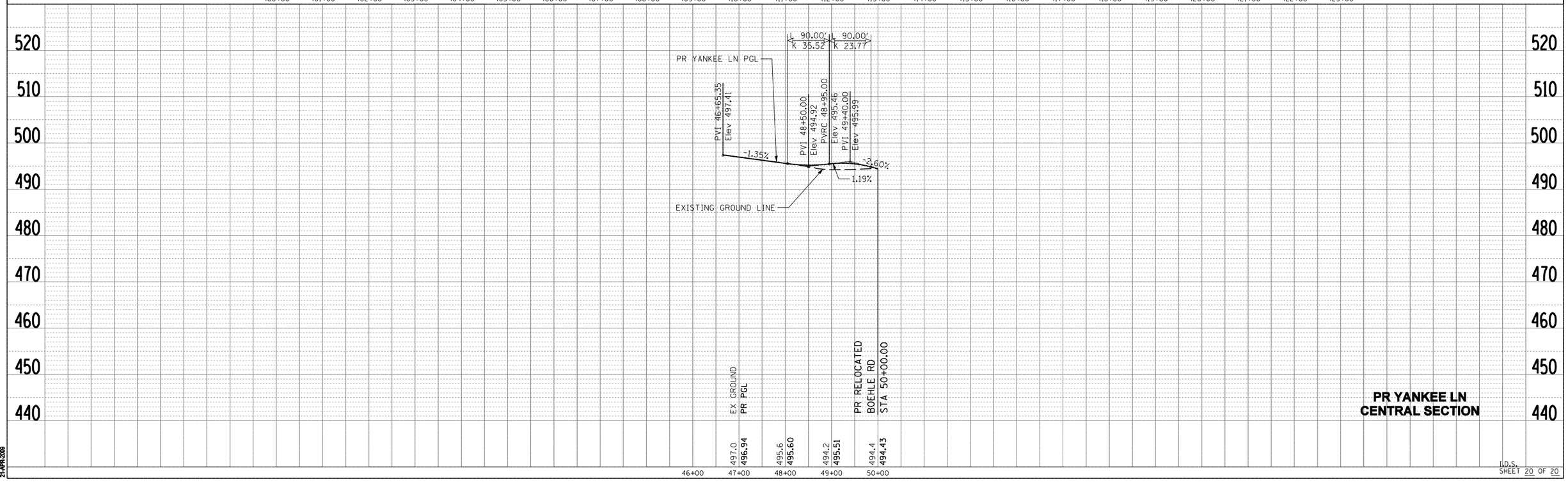

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERSECTION DESIGN STUDY
IL 29 /CREW LANE CONNECTOR /REST AREA SERVICE DRIVE INTERSECTION

PREPARED BY : CH2MHILL

AUGUST 2007

Illinois Department of Transportation
CH2MHILL

June 2010
Catalog No. 032469-00P

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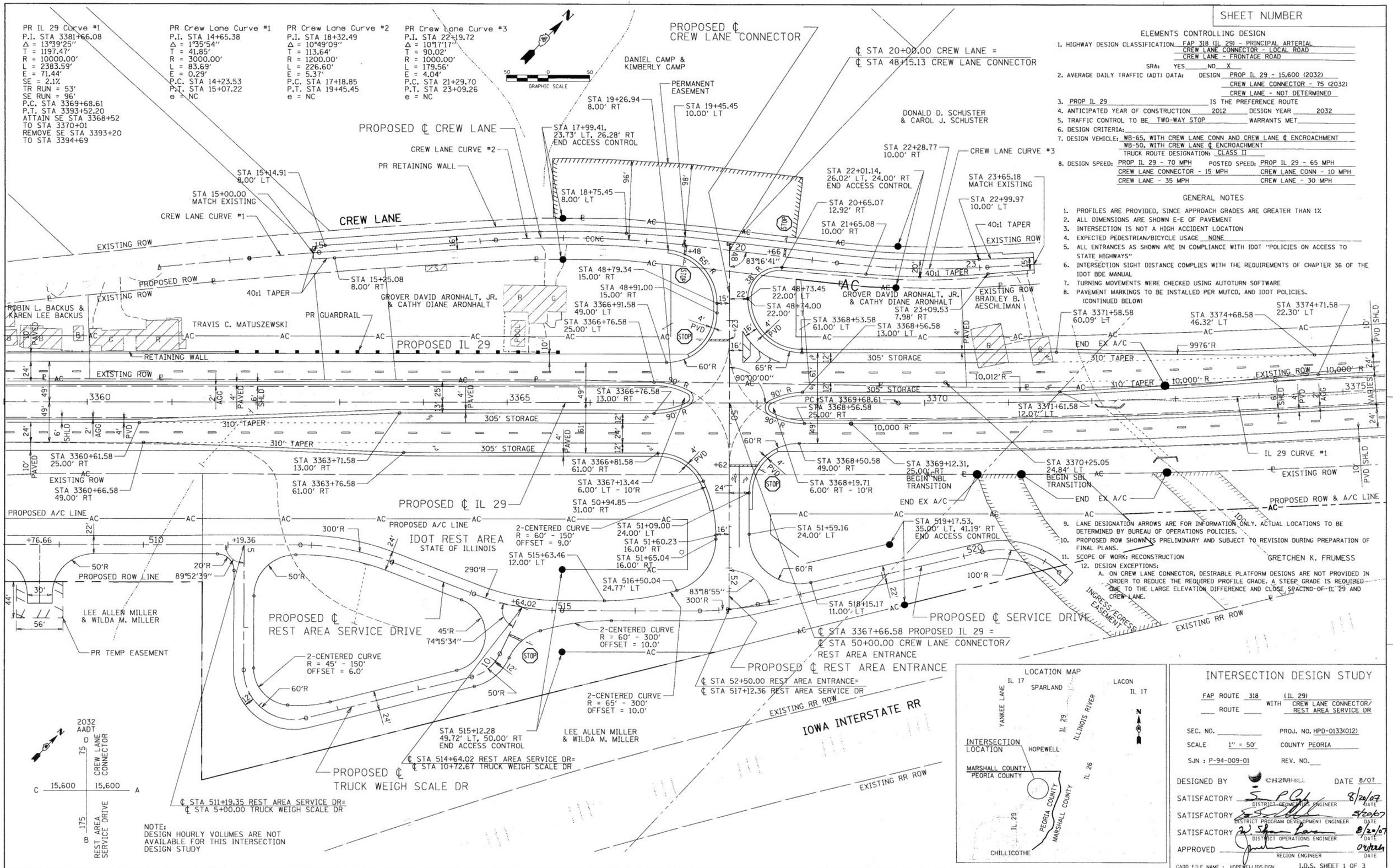
17-MAR-2009

PR IL 29 Curve #1
P.I. STA 3381+66.08
Δ = 13°39'25"
T = 1197.47'
R = 10000.00'
L = 2383.59'
E = 71.44'
SE = 2.1%
TR RUN = 53'
SE RUN = 96'
P.C. STA 3369+68.61
P.T. STA 3393+52.20
ATTAIN SE STA 3368+52
TO STA 3370+01
REMOVE SE STA 3393+20
TO STA 3394+69

PR Crew Lane Curve #1
P.I. STA 14+65.38
Δ = 1°35'54"
T = 41.85'
R = 3000.00'
L = 83.69'
E = 0.29'
P.C. STA 14+23.53
P.T. STA 15+07.22
e = NC

PR Crew Lane Curve #2
P.I. STA 18+32.49
Δ = 10°49'09"
T = 113.64'
R = 1200.00'
L = 226.60'
E = 5.37'
P.C. STA 17+18.85
P.T. STA 19+45.45
e = NC

PR Crew Lane Curve #3
P.I. STA 22+19.72
Δ = 10°17'17"
T = 90.02'
R = 1000.00'
L = 179.56'
E = 4.04'
P.C. STA 21+29.70
P.T. STA 23+09.26
e = NC



NOTE:
DESIGN HOURLY VOLUMES ARE NOT AVAILABLE FOR THIS INTERSECTION DESIGN STUDY

SHEET NUMBER

ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION: FAP 318 (IL 29) - PRINCIPAL ARTERIAL; CREW LANE CONNECTOR - LOCAL ROAD; CREW LANE - FRONTAGE ROAD
   SRA: YES ___ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN PROP IL 29 - 15,600 (2032); CREW LANE CONNECTOR - 75 (2032); CREW LANE - NOT DETERMINED
3. PROP IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE TWO-WAY STOP WARRANTS MET
6. DESIGN CRITERIA:
7. DESIGN VEHICLE: WB-65, WITH CREW LANE CONN AND CREW LANE ℄ ENCROACHMENT; WB-50, WITH CREW LANE ℄ ENCROACHMENT; TRUCK ROUTE DESIGNATION: CLASS II
8. DESIGN SPEED: PROP IL 29 - 70 MPH; CREW LANE CONNECTOR - 15 MPH; CREW LANE - 35 MPH
   POSTED SPEED: PROP IL 29 - 65 MPH; CREW LANE CONN - 10 MPH; CREW LANE - 30 MPH

GENERAL NOTES

1. PROFILES ARE PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT
3. INTERSECTION IS NOT A HIGH ACCIDENT LOCATION
4. EXPECTED PEDESTRIAN/BICYCLE USAGE NONE
5. ALL ENTRANCES AS SHOWN ARE IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS"
6. INTERSECTION SIGHT DISTANCE COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE IDOT BDE MANUAL
7. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE
8. PAVEMENT MARKINGS TO BE INSTALLED PER MUTCD, AND IDOT POLICIES.

(CONTINUED BELOW)

9. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY BUREAU OF OPERATIONS POLICIES.
10. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS.
11. SCOPE OF WORK: RECONSTRUCTION
12. DESIGN EXCEPTIONS:
    A. ON CREW LANE CONNECTOR, DESIRABLE PLATFORM DESIGNS ARE NOT PROVIDED IN ORDER TO REDUCE THE REQUIRED PROFILE GRADE. A STEEP GRADE IS REQUIRED DUE TO THE LARGE ELEVATION DIFFERENCE AND CLOSE SPACING OF IL 29 AND CREW LANE.

GRETCHEN K. FRUMESS

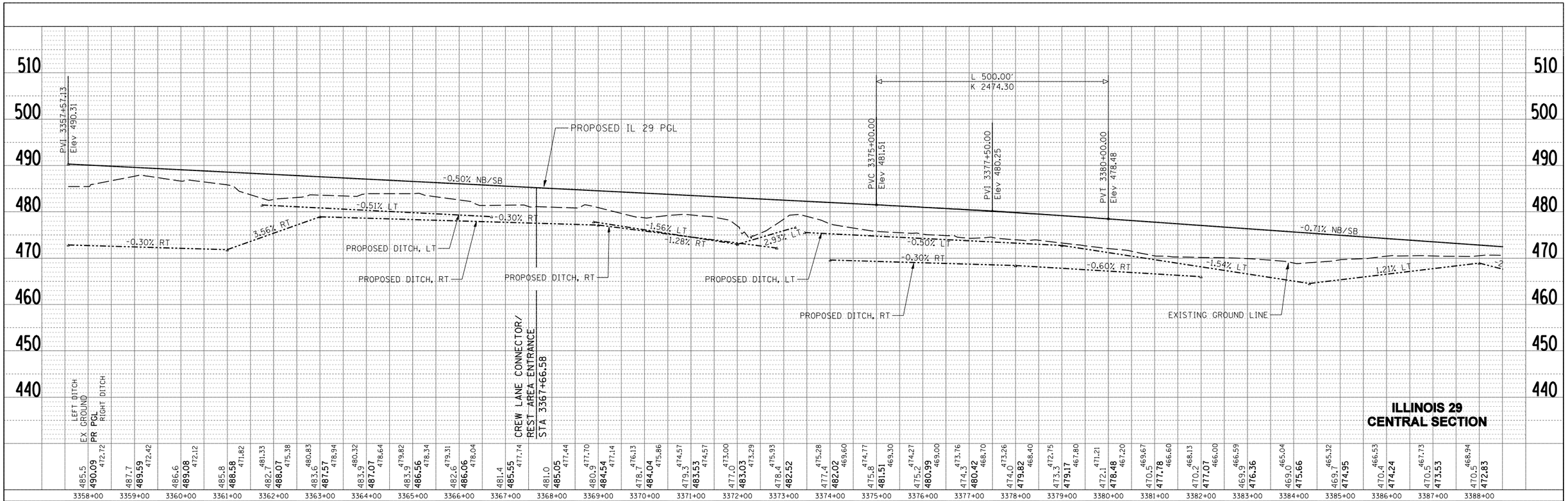
INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29) WITH CREW LANE CONNECTOR/ REST AREA SERVICE DR
ROUTE ___

SEC. NO. ___ PROJ. NO. HPD-0133(012)
SCALE 1" = 50' COUNTY PEORIA
SJN : P-94-009-01 REV. NO. ___

DESIGNED BY CH2MHILL DATE 8/07
SATISFACTORY ___ DISTRICT GEOMETRICS ENGINEER DATE 8/20/07
SATISFACTORY ___ DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE 8/20/07
SATISFACTORY ___ DISTRICT OPERATIONS ENGINEER DATE 8/20/07
APPROVED ___ REGION ENGINEER DATE 09/12/07

CADD FILE NAME : HOPEWELLIDS.DGN I.D.S. SHEET 1 OF 3



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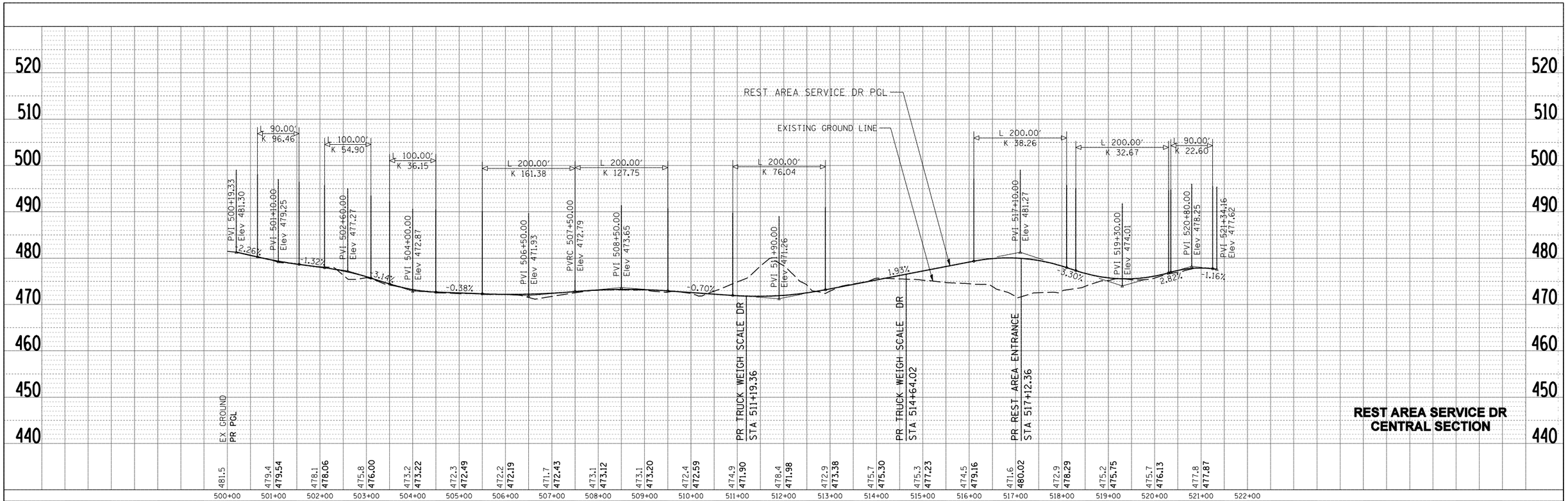

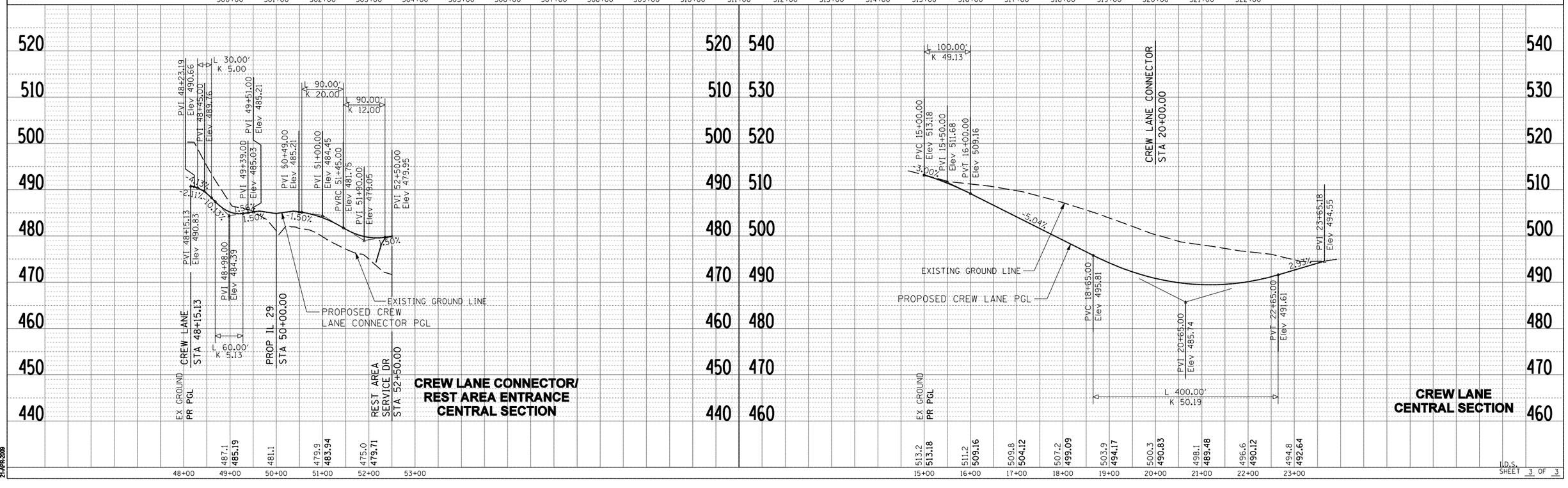

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SHEET 3 OF 3

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERSECTION DESIGN STUDY
IL 29 /HOPEWELL DRIVE INTERSECTION

PREPARED BY : CH2MHILL

AUGUST 2007

June 2010
Catalog No. 032469-00P

Illinois Department of Transportation
CH2MHILL

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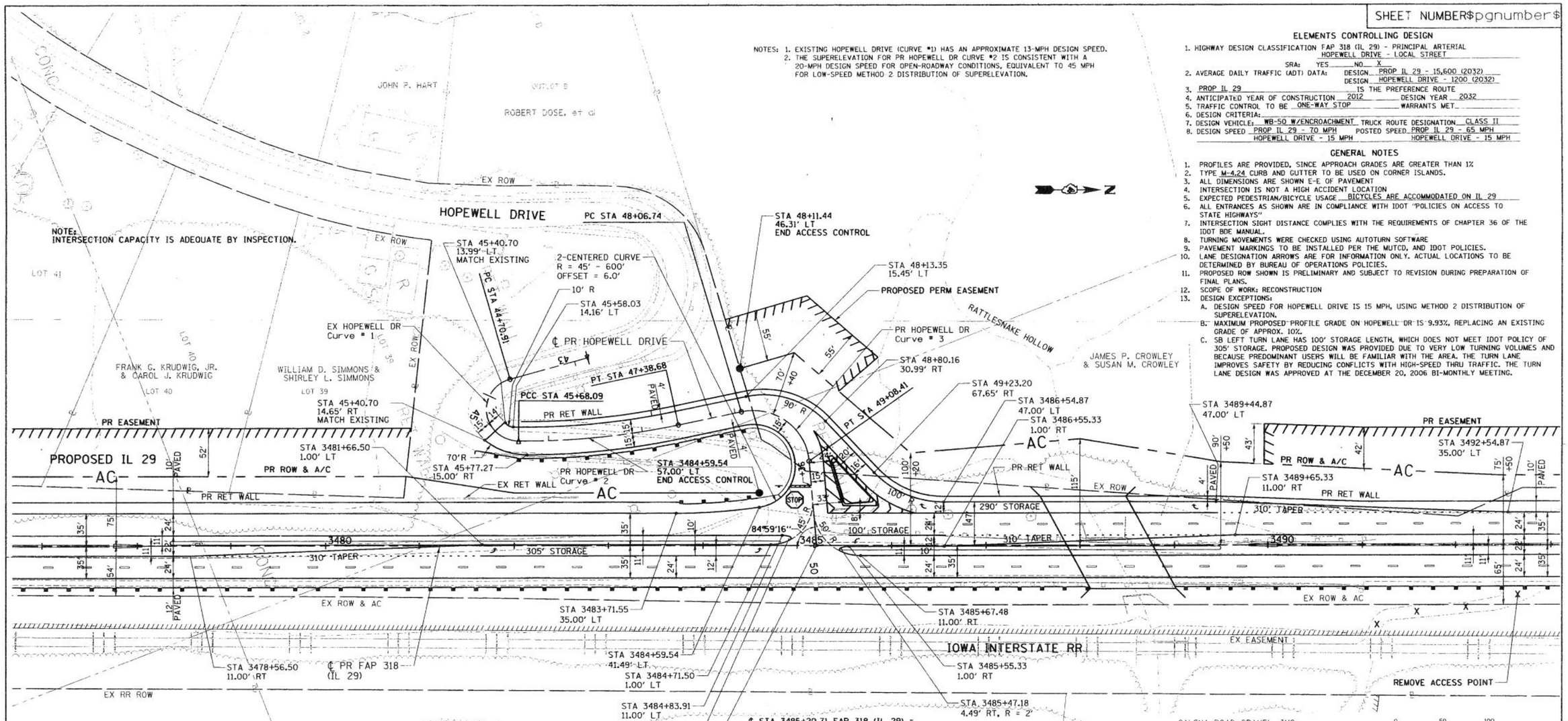
17-MAR-2009

NOTES: 1. EXISTING HOPEWELL DRIVE (CURVE #1) HAS AN APPROXIMATE 13-MPH DESIGN SPEED.
2. THE SUPERELEVATION FOR PR HOPEWELL DR CURVE #2 IS CONSISTENT WITH A 20-MPH DESIGN SPEED FOR OPEN-ROADWAY CONDITIONS, EQUIVALENT TO 45 MPH FOR LOW-SPEED METHOD 2 DISTRIBUTION OF SUPERELEVATION.



ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION FAP 318 (IL 29) - PRINCIPAL ARTERIAL
   HOPEWELL DRIVE - LOCAL STREET
   SRA: YES ____ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN PROP IL 29 - 15,600 (2032)
   DESIGN HOPEWELL DRIVE - 1200 (2032)
3. PROP IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE ONE-WAY STOP WARRANTS MET
6. DESIGN CRITERIA:
7. DESIGN VEHICLE: WB-50 W/ENCROACHMENT TRUCK ROUTE DESIGNATION CLASS II
8. DESIGN SPEED PROP IL 29 - 70 MPH POSTED SPEED PROP IL 29 - 65 MPH
   HOPEWELL DRIVE - 15 MPH HOPEWELL DRIVE - 15 MPH

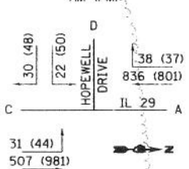
GENERAL NOTES

1. PROFILES ARE PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. TYPE M-4.24 CURB AND GUTTER TO BE USED ON CORNER ISLANDS.
3. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT
4. INTERSECTION IS NOT A HIGH ACCIDENT LOCATION
5. EXPECTED PEDESTRIAN/BICYCLE USAGE BICYCLES ARE ACCOMMODATED ON IL 29
6. ALL ENTRANCES AS SHOWN ARE IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS"
7. INTERSECTION SIGHT DISTANCE COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE IDOT BDE MANUAL.
8. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE
9. PAVEMENT MARKINGS TO BE INSTALLED PER THE MUTCD, AND IDOT POLICIES.
10. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY BUREAU OF OPERATIONS POLICIES.
11. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS.
12. SCOPE OF WORK: RECONSTRUCTION
13. DESIGN EXCEPTIONS:
    A. DESIGN SPEED FOR HOPEWELL DRIVE IS 15 MPH, USING METHOD 2 DISTRIBUTION OF SUPERELEVATION.
    B. MAXIMUM PROPOSED PROFILE GRADE ON HOPEWELL DR IS 9.93%, REPLACING AN EXISTING GRADE OF APPROX. 10%.
    C. SB LEFT TURN LANE HAS 100' STORAGE LENGTH, WHICH DOES NOT MEET IDOT POLICY OF 305' STORAGE. PROPOSED DESIGN WAS PROVIDED DUE TO VERY LOW TURNING VOLUMES AND BECAUSE PREDOMINANT USERS WILL BE FAMILIAR WITH THE AREA. THE TURN LANE IMPROVES SAFETY BY REDUCING CONFLICTS WITH HIGH-SPEED THRU TRAFFIC. THE TURN LANE DESIGN WAS APPROVED AT THE DECEMBER 20, 2006 BI-MONTHLY MEETING.

TRAFFIC DATA

MOVE-MENT	YEAR 2001 30TH MAXIMUM HOUR TRAFFIC		PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR 2012 30th MAXIMUM HOUR TRAFFIC		ESTIMATED PERCENT INCREASE BY	YEAR 2032 30th MAXIMUM HOUR TRAFFIC	
	A.M.	P.M.			A.M.	P.M.		A.M.	P.M.
AB	0	0	0(0)	0(0)	0	0	0(0)	0	0
AD	3	11	4(4)	400(82)	15	20	1167(236)	38	37
AC	287	255	12(12)	68(76)	482	449	191(214)	836	801
BA	0	0	0(0)	0(0)	0	0	0(0)	0	0
BC	0	0	0(0)	0(0)	0	0	0(0)	0	0
BD	0	0	0(0)	0(0)	0	0	0(0)	0	0
CD	8	45	4(4)	100(0)	16	45	288(0)	31	44
CA	171	402	12(12)	70(51)	290	607	196(144)	507	981
CB	0	0	0(0)	0(0)	0	0	0(0)	0	0
DC	36	21	4(4)	0(48)	34	31	0(128)	30	48
DB	0	0	0(0)	0(0)	0	0	0(0)	0	0
DA	29	15	4(4)	0(80)	27	27	0(233)	22	50
TOTAL A	490	683	12(12)	66(62)	814	1103	186(174)	1403	1870
TOTAL B	0	0	0(0)	0(0)	0	0	0(0)	0	0
TOTAL C	502	723	12(12)	64(57)	822	1132	180(159)	1404	1874
TOTAL D	76	92	4(4)	21(34)	92	123	59(97)	121	180

2032 DHV
AM (PM)

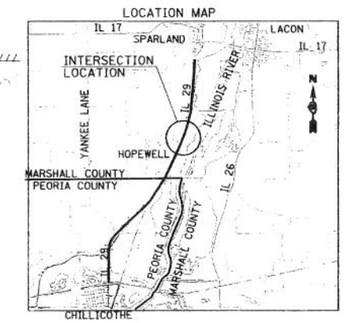


EX HOPEWELL DR Curve # 1
PI STA. 47+09.21
Δ = 163°45'33.80" Left
T = 238.29'
L = 97.18'
R = 34.00'
E = 206.70'
SE = MATCH EXISTING

PR HOPEWELL DR Curve # 2
PI STA. 46+53.73
Δ = 12°36'41.78" Left
T = 85.64'
L = 170.59'
R = 775.00'
E = 4.72'
e = 2.23%
SE RUN = 28' - 35'
PCC STA = 45+68.09
PT STA = 47+38.68
ATTAIN SE STA 45+68
TO STA 45+96
REMOVE SE STA 47+30
TO STA 47+65

PR HOPEWELL DR Curve # 3
PI STA. 48+74.66
Δ = 97°04'56.66" Right
T = 67.92'
L = 101.66'
R = 60.00'
E = 30.62'
e = 4.0%
SE RUN = 62'
PC STA 48+06.74
PT STA 49+08.41
ATTAIN SE STA 47+65
TO STA 48+27
REMOVE SE STA 48+88
TO STA 49+50

LOCATION MAP



INTERCHANGE DESIGN STUDY

FAP ROUTE 318 (IL 29)
MS ROUTE 1510 WITH (HOPEWELL DRIVE)

SEC. NO. ____ PROJ. NO. HPD-0133(012)
SCALE 1" = 50' COUNTY MARSHALL
SJN : P-94-009-01 REV. NO. ____

DESIGNED BY B. GANNIS CH2MHILL DATE 01/08
SATISFACTORY DISTRICT GEOMETRICS ENGINEER DATE 2-6-08
SATISFACTORY DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE 2-6-08
SATISFACTORY DISTRICT OPERATIONS ENGINEER DATE 2-6-08
APPROVED DISTRICT ENGINEER DATE 2/6/08

CADD FILE NAME : ...88912cr38...sht I.D.S. SHEET 1 OF 2

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1/17/2008

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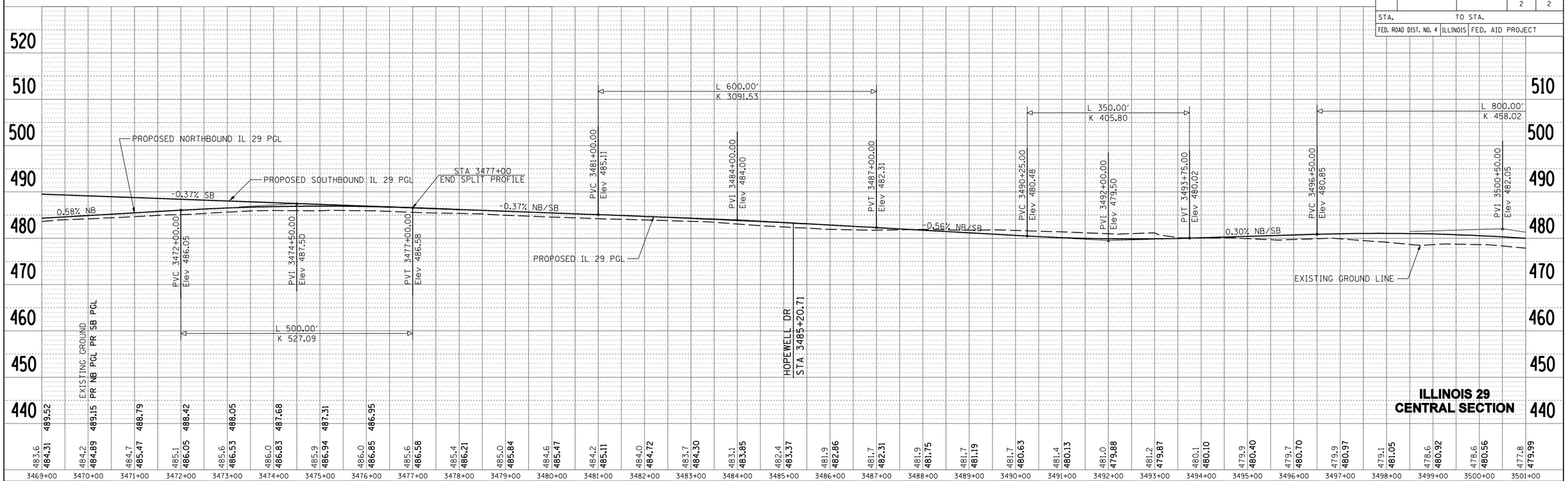

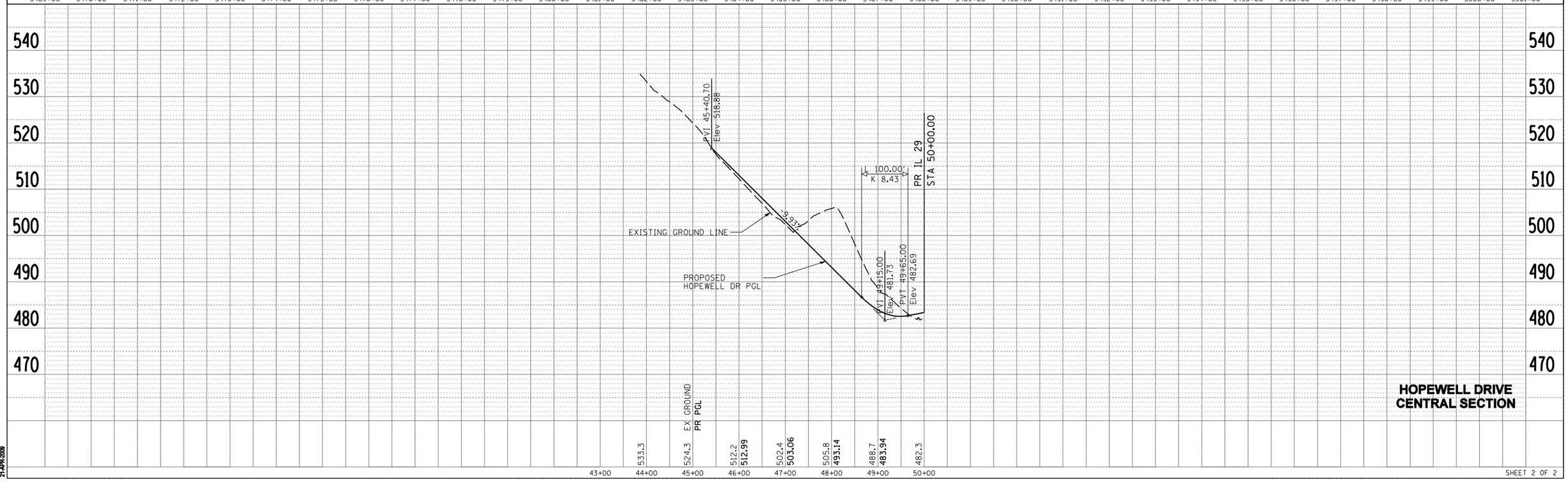

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21-APR-2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERSECTION DESIGN STUDY
IL 29 /BARVILLE ROAD INTERSECTION

PREPARED BY : CH2MHILL

SEPTEMBER 2007

June 2010
Catalog No. 032469-00P

Illinois Department of Transportation
CH2MHILL

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17-MAR-2009

SHEET NUMBER

CURVE #5
IL 29

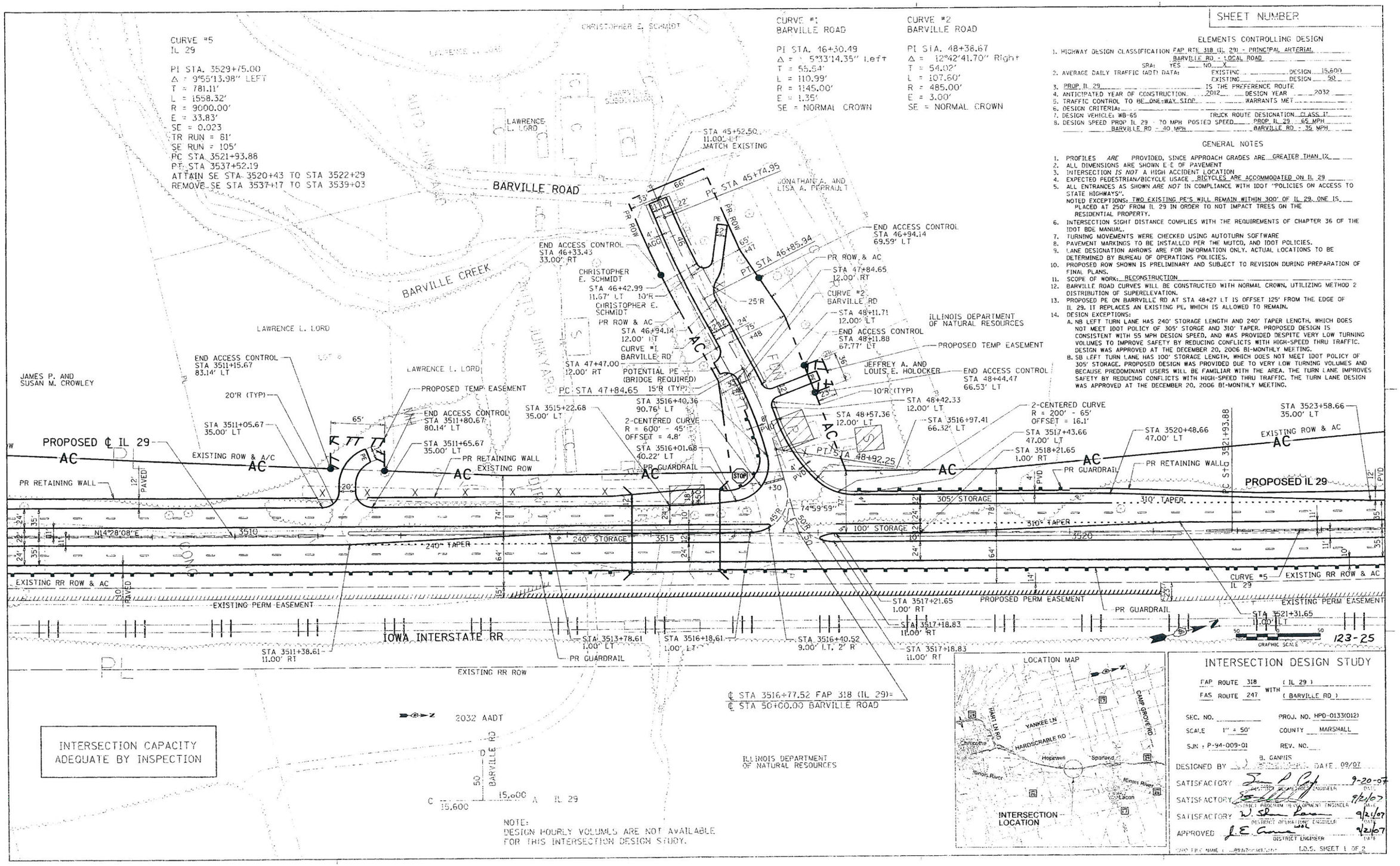
PI STA. 3529+75.00
Δ = 9°55'13.98" LEFT
T = 781.11'
L = 1558.32'
R = 9000.00'
E = 33.83'
SE = 0.023
TR RUN = 81'
SE RUN = 105'
PC STA 3521+93.88
PT STA 3537+52.19
ATTAIN SE STA 3520+43 TO STA 3522+29
REMOVE SE STA 3537+17 TO STA 3539+03

CURVE #1
BARVILLE ROAD

PI STA. 46+30.49
Δ = 5°33'14.35" Left
T = 55.54'
L = 110.99'
R = 1145.00'
E = 1.35'
SE = NORMAL CROWN

CURVE #2
BARVILLE ROAD

PI STA. 48+38.67
Δ = 12°42'41.70" Right
T = 54.02'
L = 107.60'
R = 485.00'
E = 3.00'
SE = NORMAL CROWN



INTERSECTION CAPACITY ADEQUATE BY INSPECTION

NOTE:
DESIGN HOURLY VOLUMES ARE NOT AVAILABLE FOR THIS INTERSECTION DESIGN STUDY.

LOCATION MAP

ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION FAP RTE 318 (IL 29) - PRINCIPAL ARTERIAL
   BARVILLE RD - LOCAL ROAD
   SRA: YES ___ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: EXISTING ___ DESIGN 15,600
   EXISTING ___ DESIGN 50
3. PROP. IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE ONE-WAY STOP WARRANTS MET
6. DESIGN CRITERIA:
7. DESIGN VEHICLE: WB-65 TRUCK ROUTE DESIGNATION CLASS I
8. DESIGN SPEED PROP IL 29 70 MPH POSTED SPEED PROP IL 29 65 MPH
   BARVILLE RD - 40 MPH BARVILLE RD - 35 MPH

GENERAL NOTES

1. PROFILES *ARE* PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. ALL DIMENSIONS ARE SHOWN E E OF PAVEMENT
3. INTERSECTION *IS NOT* A HIGH ACCIDENT LOCATION
4. EXPECTED PEDESTRIAN/BICYCLE USAGE BICYCLES ARE ACCOMMODATED ON IL 29
5. ALL ENTRANCES AS SHOWN *ARE NOT* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
   NOTED EXCEPTIONS: TWO EXISTING PE'S WILL REMAIN WITHIN 300' OF IL 29. ONE IS PLACED AT 250' FROM IL 29 IN ORDER TO NOT IMPACT TREES ON THE RESIDENTIAL PROPERTY.
6. INTERSECTION SIGHT DISTANCE COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE IDOT BDE MANUAL.
7. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE
8. PAVEMENT MARKINGS TO BE INSTALLED PER THE MUTCD, AND IDOT POLICIES.
9. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY BUREAU OF OPERATIONS POLICIES.
10. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS.
11. SCOPE OF WORK: RECONSTRUCTION
12. BARVILLE ROAD CURVES WILL BE CONSTRUCTED WITH NORMAL CROWN, UTILIZING METHOD 2 DISTRIBUTION OF SUPERELEVATION.
13. PROPOSED PE ON BARRVILLE RD AT STA 48+27 LT IS OFFSET 125' FROM THE EDGE OF IL 29. IT REPLACES AN EXISTING PE, WHICH IS ALLOWED TO REMAIN.
14. DESIGN EXCEPTIONS:
    A. NB LEFT TURN LANE HAS 240' STORAGE LENGTH AND 240' TAPER LENGTH, WHICH DOES NOT MEET IDOT POLICY OF 305' STORGE AND 310' TAPER. PROPOSED DESIGN IS CONSISTENT WITH 55 MPH DESIGN SPEED, AND WAS PROVIDED DESPITE VERY LOW TURNING VOLUMES TO IMPROVE SAFETY BY REDUCING CONFLICTS WITH HIGH-SPEED THRU TRAFFIC. DESIGN WAS APPROVED AT THE DECEMBER 20, 2006 BI-MONTHLY MEETING.
    B. SB LEFT TURN LANE HAS 100' STORAGE LENGTH, WHICH DOES NOT MEET IDOT POLICY OF 305' STORAGE. PROPOSED DESIGN WAS PROVIDED DUE TO VERY LOW TURNING VOLUMES AND BECAUSE PREDOMINANT USERS WILL BE FAMILIAR WITH THE AREA. THE TURN LANE IMPROVES SAFETY BY REDUCING CONFLICTS WITH HIGH-SPEED THRU TRAFFIC. THE TURN LANE DESIGN WAS APPROVED AT THE DECEMBER 20, 2006 BI-MONTHLY MEETING.

INTERSECTION DESIGN STUDY

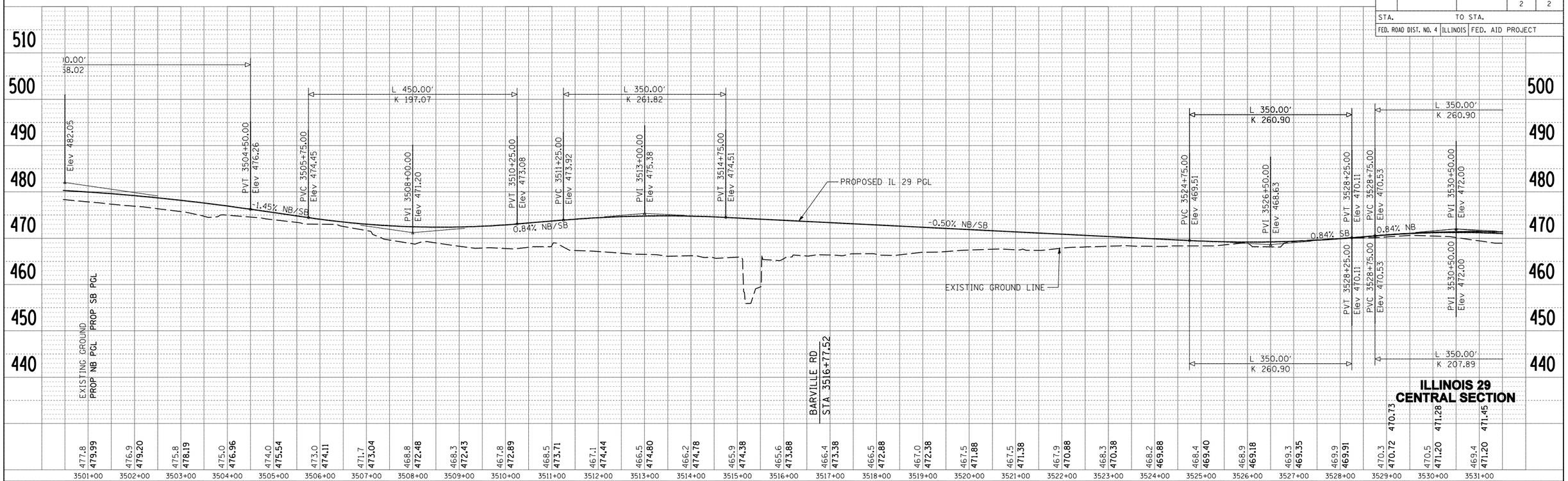
FAP ROUTE 318 (IL 29)
WITH
FAS ROUTE 247 (BARVILLE RD)

SEC. NO. ___ PROJ. NO. HPD-0133(012)
SCALE 1" = 50' COUNTY MARSHALL
SJN : P-94-009-01 REV. NO. ___

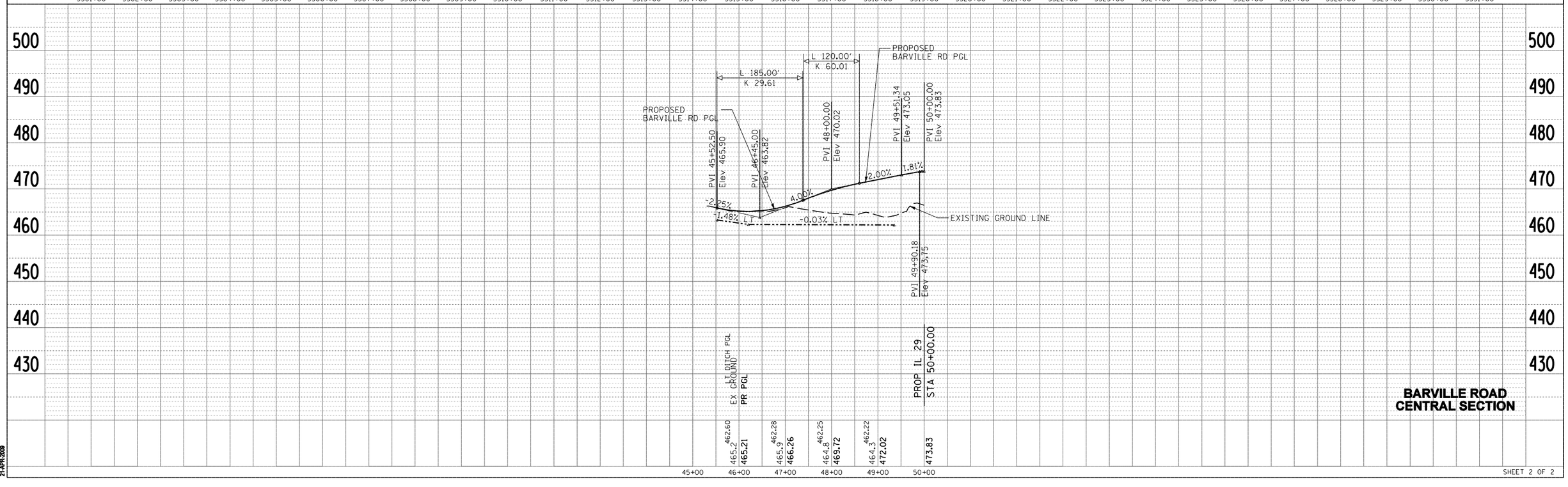
DESIGNED BY B. GANNIS DATE 09/07
SATISFACTORY [signature] DISTRICT BUREAU CHIEF ENGINEER 9-20-07 DATE
SATISFACTORY [signature] DISTRICT PROGRAM DEVELOPMENT ENGINEER 9/21/07 DATE
SATISFACTORY W. Shane Lance DISTRICT OPERATIONS ENGINEER 9/21/07 DATE
APPROVED J.E. Cowen DISTRICT ENGINEER 9/21/07 DATE

CADD FILE NAME I.D.S. SHEET 1 OF 2

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			2	2
STA.		TO STA.		
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJECT		



ILLINOIS 29 CENTRAL SECTION



BARVILLE ROAD CENTRAL SECTION

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
PLAN TILE NAME
NOTE BOOK NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CH'KD
NOTE BOOK NO.
BY
DATE

gbphey
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21-APR-2009

SHEET 2 OF 2

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERCHANGE DESIGN STUDY
IL 29 /SPARLAND INTERCHANGE AREA

PREPARED BY : CH2MHILL

MARCH 2009

June 2010
Catalog No. 032469-00P

Illinois Department of Transportation
CH2MHILL

mfox
C:\Projects\168912 - IDOT Illinois 29 - Phase I Engineering Services\Appendix\E2_SPARLAND_IDS_CoverSheet.sht
17-MAR-2009

SHEET NUMBER

		RAMP A	RAMP B		
RAMP TYPE		SB ON	NB OFF		
DISTANCE TO ADJACENT RAMPS (FT.)		N/A	N/A		
TERRAIN/GRADE		LEVEL	LEVEL		
FREEWAY VOLUME	A.M.	180	555		
	P.M.	200	960		
RAMP VOLUME	A.M.	575	405		
	P.M.	605	720		
TRUCK TYPES		TYP	TYP		
% OF TRUCKS ON FREEWAY		20	20		
PEAK-HOUR FACTOR		0.90	0.90		
% OF TRUCKS ON RAMP		20	20		
NUMBER OF LANES ON FREEWAY		2	2		
DESIGN SPEED		70	70		
CHECK POINT VOLUME (FREEWAY + RAMP)	A.M.	923	1173		
	P.M.	983	2053		
DENSITY/SPEED* (PC/MI/LN)/(MPH) (FREEWAY)	A.M.	7.0/63.1	7.4/62.2		
	P.M.	7.5/63.1	11.6/61.3		
LEVEL OF SERVICE (RAMP)	A.M.	A	A		
	P.M.	A	B		

*NOTE:
THE PREDICTION OF DENSITY AND THE MODEL TO DETERMINE THIS VARIABLE ARE DISCUSSED IN THE HCM. DENSITY IS MEASURED IN PASSENGER CARS PER MILE PER LANE (PC/MI/LN). THE AVERAGE TRAVEL SPEED MAY BE PREDICTED WITHIN THE RAMP INFLUENCE AREA, BUT SHOULD NOT BE USED AS A PRIMARY MEASURE OF LEVEL OF SERVICE.

RAMP A
CURVE # 1
PI STA 0+76.83
Δ = 0°35'19" RT
T = 76.83'
L = 153.66'
R = 14958.00'
E = 0.20'
SE = NC
PC STA 0+00.00
PCC STA 1+53.66

RAMP A
CURVE # 2
PI STA 4+03.10
Δ = 18°53'00" RT
T = 249.44'
L = 494.37'
R = 1500.00'
E = 20.60'
SE = 0.062
SE RUN ATTAINED = 198'
SE RUN REMOVED = 234'
PCC STA 1+53.66
PT STA 6+48.03
SE ATTAINED:
STA 0+22 TO STA 2+20
SE REMOVED:
STA 5+70 TO STA 8+04

RAMP A
CURVE # 3
PI STA 14+95.04
Δ = 29°52'33" LT
T = 386.93'
L = 1147.15'
R = 2200.00'
E = 76.95'
SE = 0.048
SE RUN ATTAINED = 156'
SE RUN REMOVED = 236'
PC STA 9+08.11
PT STA 20+55.26
SE ATTAINED:
STA 8+04 TO STA 9+60
SE REMOVED:
STA 20+00 TO STA 22+36 (0.0224)

RAMP A
CURVE # 4
PI STA 31+30.82
Δ = 9°54'20" RT
T = 265.90'
L = 511.34'
R = 4861.00'
E = 6.60'
SE = MATCH MAINLINE
PC STA 28+74.92
PT STA 33+86.26

RAMP B
CURVE # 1
PI STA 10+09.92
Δ = 19°01'52" RT
T = 201.15'
L = 398.59'
R = 1200.00'
E = 16.74'
SE = 0.070
SE RUN = 225'
PC STA 8+08.77
PT STA 12+07.35
SE ATTAINED:
STA 6+08.77 TO STA 8+78.77
SE REMOVED:
STA 11+32 TO STA 13+57

RAMP B
CURVE # 2
PI STA 17+68.14
Δ = 12°49'50" LT
T = 202.39'
L = 403.08'
R = 1800.00'
E = 11.34'
SE = 0.055
TR RUN = 49'
SE RUN = 177'
PC STA 15+65.75
PT STA 19+68.84
SE ATTAINED:
STA 13+99 TO STA 16+25
SE REMOVED:
STA 19+10 TO STA 21+36

RAMP B
CURVE # 3
PI STA 24+06.42
Δ = 0°43'48" RT
T = 95.57'
L = 191.14'
R = 15000.00'
E = 0.30'
SE = NC
PC STA 23+10.85
PT STA 25+01.99

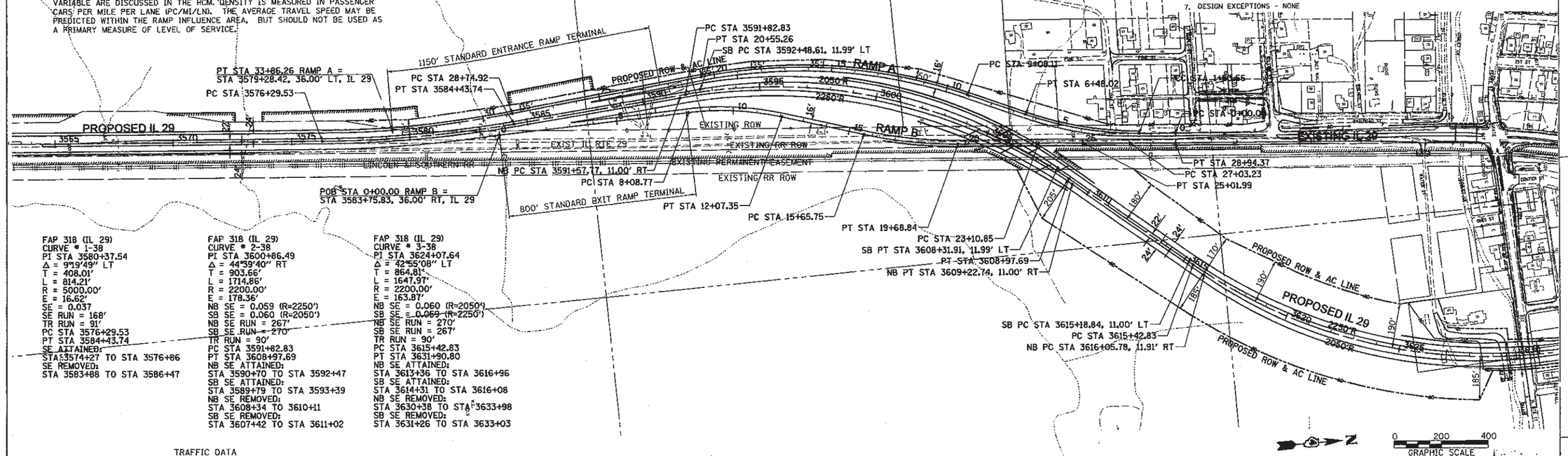
RAMP B
CURVE # 4
PI STA 27+98.80
Δ = 0°43'48" LT
T = 95.57'
L = 191.14'
R = 15000.00'
E = 0.30'
SE = NC
PC STA 27+03.23
PT STA 28+94.37

ELEMENTS CONTROLLING DESIGN

1. DESIGN DESIGNATION FA ROUTE 318 (IL 29) EXPRESSWAY (SOUTH) 15600 (2032)
   FA ROUTE 318 (IL 29) EXPRESSWAY (NORTH) 3650 (2032)
   EXISTING IL 29 PRINCIPAL ARTERIAL 12000 (2032)
2. ILLINOIS 29 IS THE PREFERENCE ROUTE
3. ANTICIPATED YEAR OF CONSTRUCTION 2012
4. TRAFFIC CONTROL TO BE
5. DESIGN SPEEDS: IL 29 - 70 MPH
   EXISTING IL 29 - 35 MPH
   RAMP A - 50 MPH
   RAMP B - 50 MPH
6. IL 29 HAS PARTIAL ACCESS CONTROL
7. IL 29 IS A CLASS II TRUCK ROUTE
8. DESIGN VEHICLE: WB-65

GENERAL NOTES

1. PROFILES ARE PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1 PERCENT
2. ALL DIMENSIONS ARE SHOWN E-E TO PAVEMENT UNLESS NOTED
3. IL 29 IS A RURAL FOUR-LANE EXPRESSWAY
4. RAMP EXIT AND ENTRANCE TERMINALS COMPLY WITH IDOT BDE MANUAL DESIGN CRITERIA AND STANDARDS, EXCEPT AS INDICATED IN THE EXCEPTIONS TO POLICY.
5. PAVEMENT MARKING TO BE THERMOPLASTIC, WHERE APPLICABLE, WITH RAISED REFLECTIVE PAVEMENT MARKERS TO DELINEATE LINES. INSTALLED AS PER THE MUTCD. AND IDOT POLICIES.
6. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS.
7. DESIGN EXCEPTIONS - NONE



FAP 318 (IL 29)
CURVE # 1-38
PI STA 3580+37.54
Δ = 9°19'49" LT
T = 408.01'
L = 814.21'
R = 5000.00'
E = 16.62'
SE = 0.037
SE RUN = 168'
TR RUN = 91'
PC STA 3576+29.53
PT STA 3584+43.74
SE ATTAINED:
STA 3574+27 TO STA 3576+86
SE REMOVED:
STA 3583+88 TO STA 3586+47

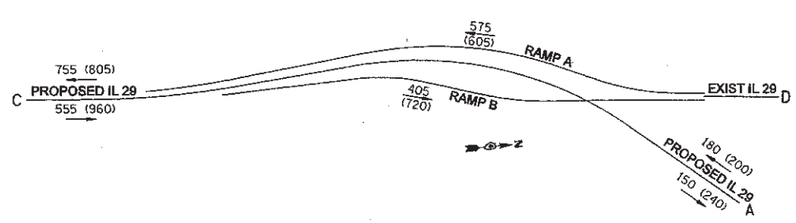
FAP 318 (IL 29)
CURVE # 2-38
PI STA 3600+86.49
Δ = 44°39'40" RT
T = 903.66'
L = 1714.86'
R = 2200.00'
E = 178.36'
NB SE = 0.059 (R=2250')
SB SE = 0.060 (R=2050')
NB SE RUN = 267'
SB SE RUN = 270'
TR RUN = 90'
PC STA 3591+82.83
PT STA 3608+97.69
NB SE ATTAINED:
STA 3590+70 TO STA 3592+47
SB SE ATTAINED:
STA 3589+79 TO STA 3593+39
NB SE REMOVED:
STA 3608+34 TO 3610+11
SB SE REMOVED:
STA 3607+42 TO STA 3611+02

FAP 318 (IL 29)
CURVE # 3-38
PI STA 3624+07.64
Δ = 42°55'08" LT
T = 864.81'
L = 1647.97'
R = 2200.00'
E = 163.87'
NB SE = 0.060 (R=2050')
SB SE = 0.059 (R=2250')
NB SE RUN = 270'
SB SE RUN = 267'
TR RUN = 90'
PC STA 3615+42.83
PT STA 3631+90.80
NB SE ATTAINED:
STA 3613+36 TO STA 3616+96
SB SE ATTAINED:
STA 3614+31 TO STA 3616+08
NB SE REMOVED:
STA 3630+38 TO STA 3633+98
SB SE REMOVED:
STA 3631+26 TO STA 3633+03

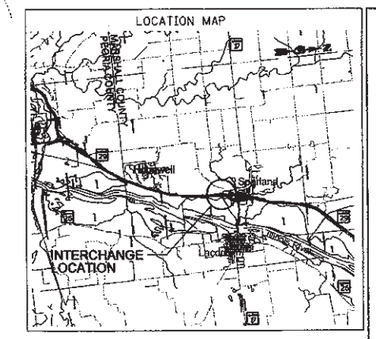
TRAFFIC DATA

MOVEMENT	YEAR ____ 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR ____ 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB								-	-
AD								-	-
AC								180	200
BA								-	-
BC								-	-
BD								-	-
CD								405	720
CA								150	240
CB								-	-
DC								575	605
DB								-	-
DA								-	-
TOTAL A								330	440
TOTAL B								-	-
TOTAL C								1310	1765
TOTAL D								980	1325

2032 DHV
AM (PM)



LOCATION MAP



INTERCHANGE DESIGN STUDY

FA ROUTE 318 (IL 29) WITH
FA ROUTE 318 (EXISTING IL 29)

SEC. NO. ____ PROJ. NO. HPD-0133 (012)
SCALE 1" = 200' COUNTY MARSHALL
SJN : P-94-009-01 REV. NO. ____

DESIGNED BY TIMOTHY C. QUIGG, HUTCHISON ENG. INC DATE 4/09

SATISFACTORY ____ DISTRICT GEOMETRICS ENGINEER DATE
SATISFACTORY ____ DISTRICT STUDIES & PLANS ENGINEER DATE
SATISFACTORY ____ DISTRICT, OPERATIONS ENGINEER DATE
APPROVED ____ REGIONAL ENGINEER DATE

CADD FILE NAME : $FILEABBREV$ I.D.S. SHEET 1 OF 19

BDE-990B

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$DATE-TIME$
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$REF-

$USERNAMES
$FILES
$DATES

SHEET NUMBER

		RAMP C	RAMP D		
RAMP TYPE		NB ON	SB OFF		
DISTANCE TO ADJACENT RAMPS (FT.)		N/A	N/A		
TERRAIN/GRADE		LEVEL	LEVEL		
FREEWAY VOLUME	A.M.	150	480		
	P.M.	240	520		
RAMP VOLUME	A.M.	165	300		
	P.M.	230	320		
TRUCK TYPES		TYP	TYP		
% OF TRUCKS ON FREEWAY		20	20		
PEAK-HOUR FACTOR		0.90	0.90		
% OF TRUCKS ON RAMP		20	20		
NUMBER OF LANES ON FREEWAY		2	2		
DESIGN SPEED		70	70		
CHECK POINT VOLUME (FREEWAY + RAMP)	A.M.	385	954		
	P.M.	574	1027		
DENSITY/SPEED* (PC/MI/LN)/(MPH) (FREEWAY)	A.M.	3.1/63.2	6.6/62.6		
	P.M.	4.5/63.2	7.0/62.5		
LEVEL OF SERVICE (RAMP)	A.M.	A	A		
	P.M.	A	A		

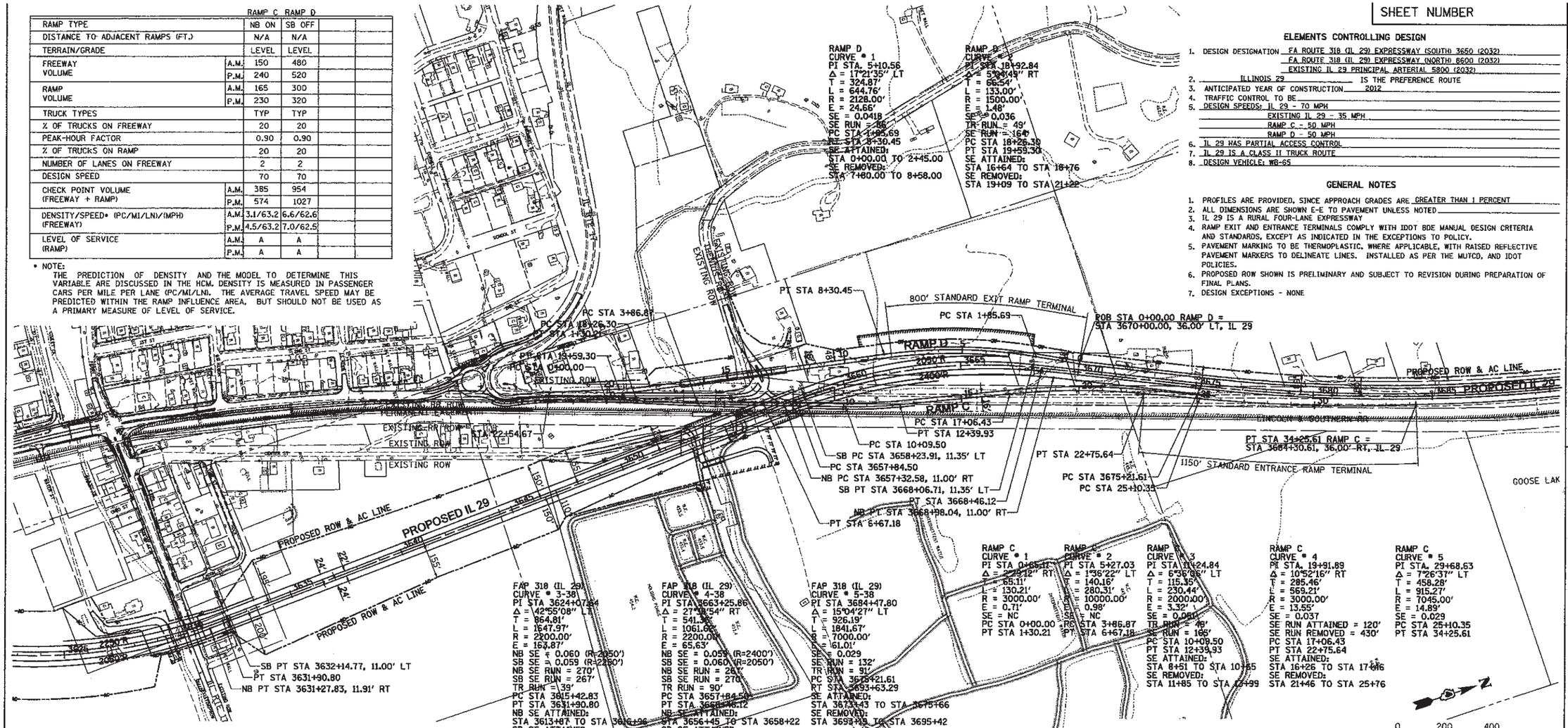
* NOTE:
THE PREDICTION OF DENSITY AND THE MODEL TO DETERMINE THIS VARIABLE ARE DISCUSSED IN THE HCM. DENSITY IS MEASURED IN PASSENGER CARS PER MILE PER LANE (PC/MI/LN). THE AVERAGE TRAVEL SPEED MAY BE PREDICTED WITHIN THE RAMP INFLUENCE AREA, BUT SHOULD NOT BE USED AS A PRIMARY MEASURE OF LEVEL OF SERVICE.

ELEMENTS CONTROLLING DESIGN

1. DESIGN DESIGNATION FA ROUTE 318 (IL 29) EXPRESSWAY (SOUTH) 3650 (2032)
   FA ROUTE 318 (IL 29) EXPRESSWAY (NORTH) 8600 (2032)
   EXISTING IL 29 PRINCIPAL ARTERIAL 5800 (2032)
2. ILLINOIS 29 IS THE PREFERENCE ROUTE
3. ANTICIPATED YEAR OF CONSTRUCTION 2012
4. TRAFFIC CONTROL TO BE
5. DESIGN SPEEDS: IL 29 - 70 MPH
   EXISTING IL 29 - 35 MPH
   RAMP C - 50 MPH
   RAMP D - 50 MPH
6. IL 29 HAS PARTIAL ACCESS CONTROL
7. IL 29 IS A CLASS II TRUCK ROUTE
8. DESIGN VEHICLE: WB-65

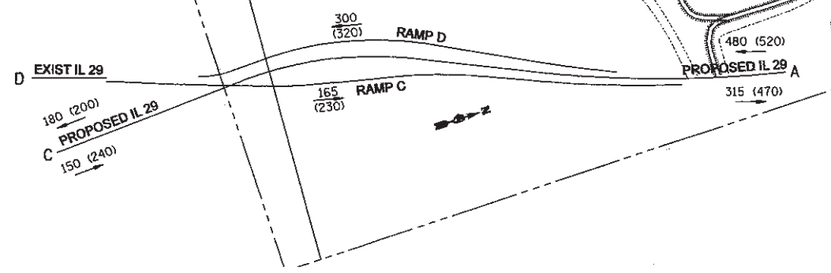
GENERAL NOTES

1. PROFILES ARE PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1 PERCENT
2. ALL DIMENSIONS ARE SHOWN E-E TO PAVEMENT UNLESS NOTED
3. IL 29 IS A RURAL FOUR-LANE EXPRESSWAY
4. RAMP EXIT AND ENTRANCE TERMINALS COMPLY WITH IDOT BDE MANUAL DESIGN CRITERIA AND STANDARDS, EXCEPT AS INDICATED IN THE EXCEPTIONS TO POLICY.
5. PAVEMENT MARKING TO BE THERMOPLASTIC, WHERE APPLICABLE, WITH RAISED REFLECTIVE PAVEMENT MARKERS TO DELINEATE LINES. INSTALLED AS PER THE MUTCD, AND IDOT POLICIES.
6. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS.
7. DESIGN EXCEPTIONS - NONE

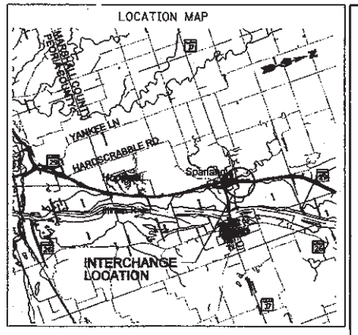


TRAFFIC DATA

MOVE-MENT	YEAR ____ 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR ____ 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB								-	-
AD								300	320
AC								180	200
BA								-	-
BC								-	-
BD								-	-
CD								-	-
CA								150	240
CB								-	-
DC								-	-
DB								-	-
DA								165	230
TOTAL A								795	990
TOTAL B								-	-
TOTAL C								330	440
TOTAL D								465	550



LOCATION MAP



INTERCHANGE DESIGN STUDY

FA ROUTE 318 (IL 29)
WITH
FA ROUTE 318 (EXISTING IL 29

SEC. NO. ____ PROJ. NO. HPD-0133 (012)
SCALE 1" = 200' COUNTY MARSHALL
SJN : P-94-009-01 REV. NO. ____

DESIGNED BY TIMOTHY C. QUIGG, HUTCHISON ENG. INC DATE 4/09

SATISFACTORY ____ DISTRICT GEOMETRICS ENGINEER DATE
SATISFACTORY ____ DISTRICT STUDIES & PLANS ENGINEER DATE
SATISFACTORY ____ DISTRICT OPERATIONS ENGINEER DATE
APPROVED ____ REGIONAL ENGINEER DATE

CADD FILE NAME : 8/7ILEABGREV8 I.D.S. SHEET 2 OF 19

BDE-9908

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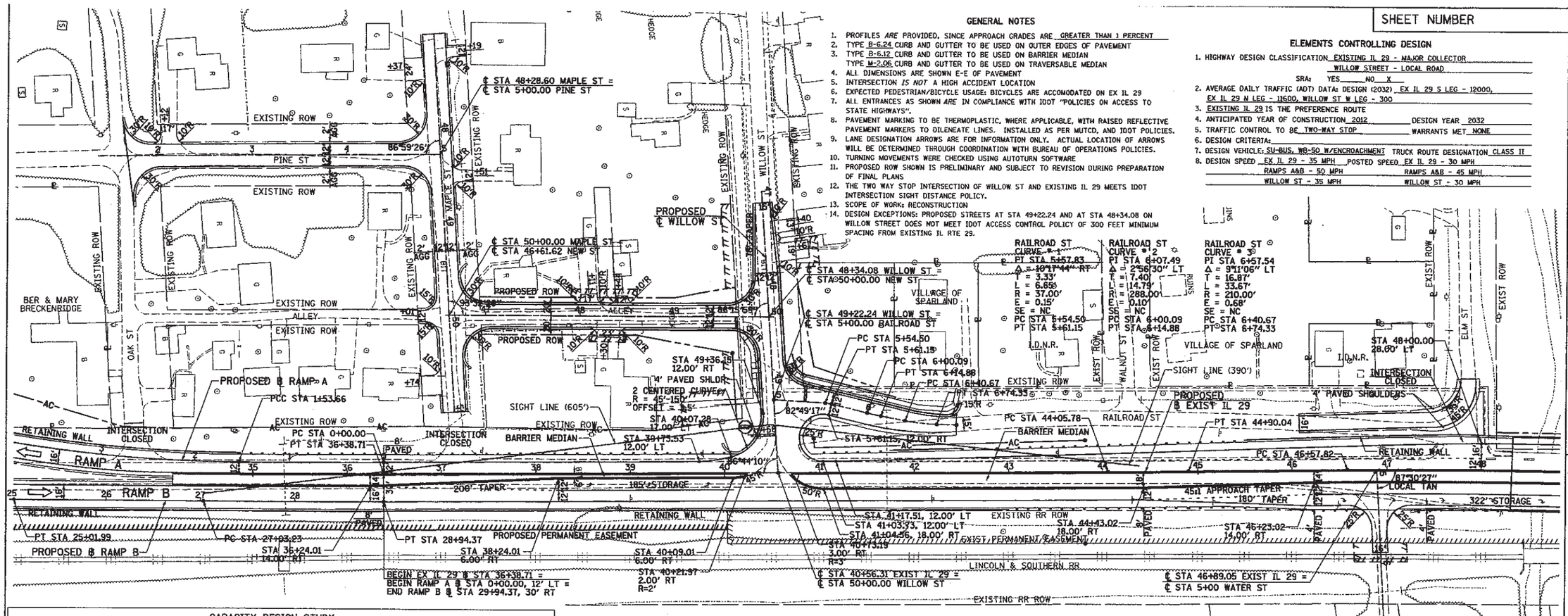
•DATE-TIME•
•REF-
•REF-
•REF-

PLOTTED BY
PLOT DATE

SHEET NUMBER



GENERAL NOTES

1. PROFILES *ARE* PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1 PERCENT
2. TYPE B-6.24 CURB AND GUTTER TO BE USED ON OUTER EDGES OF PAVEMENT
3. TYPE B-6.12 CURB AND GUTTER TO BE USED ON BARRIER MEDIAN
   TYPE M-2.06 CURB AND GUTTER TO BE USED ON TRAVERSABLE MEDIAN
4. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT
5. INTERSECTION *IS NOT* A HIGH ACCIDENT LOCATION
6. EXPECTED PEDESTRIAN/BICYCLE USAGE: BICYCLES ARE ACCOMODATED ON EX IL 29
7. ALL ENTRANCES AS SHOWN *ARE* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
8. PAVEMENT MARKING TO BE THERMOPLASTIC, WHERE APPLICABLE, WITH RAISED REFLECTIVE PAVEMENT MARKERS TO DILENEATE LINES. INSTALLED AS PER MUTCD, AND IDOT POLICIES.
9. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATION OF ARROWS WILL BE DETERMINED THROUGH COORDINATION WITH BUREAU OF OPERATIONS POLICIES.
10. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE
11. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS
12. THE TWO WAY STOP INTERSECTION OF WILLOW ST AND EXISTING IL 29 MEETS IDOT INTERSECTION SIGHT DISTANCE POLICY.
13. SCOPE OF WORK: RECONSTRUCTION
14. DESIGN EXCEPTIONS: PROPOSED STREETS AT STA 49+22.24 AND AT STA 48+34.08 ON WILLOW STREET DOES NOT MEET IDOT ACCESS CONTROL POLICY OF 300 FEET MINIMUM SPACING FROM EXISTING IL RTE 29.

ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION EXISTING IL 29 - MAJOR COLLECTOR
   WILLOW STREET - LOCAL ROAD
   SRA: YES ____ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN (2032) EX IL 29 S LEG - 12000,
   EX IL 29 N LEG - 11600, WILLOW ST W LEG - 300
3. EXISTING IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE TWO-WAY STOP WARRANTS MET NONE
6. DESIGN CRITERIA:
7. DESIGN VEHICLE: SU-BUS, WB-50 W/ENCROACHMENT TRUCK ROUTE DESIGNATION CLASS II
8. DESIGN SPEED EX IL 29 - 35 MPH POSTED SPEED EX IL 29 - 30 MPH
   RAMPS A&B - 50 MPH RAMPS A&B - 45 MPH
   WILLOW ST - 35 MPH WILLOW ST - 30 MPH

CAPACITY DESIGN STUDY

N/A PHASE
N/A SEC. CYCLE
SIGNAL TYPE 2-WAY STOP

AREA OTHER
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS 2000

PEAK HOUR FACTOR 0.90
A.M. - SEC. P.M. - SEC.
INTERSECTION LEVEL OF SERVICE A.M. - P.M. -

APPROACH		A SB					C NB			D EB		
BUS STOP CONDITION		N/A										
PARKING MANEUVER/HR.		N/A										
PEDESTRIANS		N/A										
ARRIVAL TYPE		N/A										
LANE UTILIZATION FACTOR		N/A										
BASE SATURATION FLOW			1700				1700	1700			1700	
D - DISTANCE			N/A				185'	N/A			N/A	
LANE GROUP			T,R				L	T			L,R	
LANE WIDTHS			12'				12'	12'			11'	
GREEN TIME (SECONDS)	A.M.	N/A										
	P.M.	N/A										
G/C RATIO	A.M.	N/A										
	P.M.	N/A										
LANE GROUP DELAY (SECONDS)	A.M.		-				8.9	-			13.6	
	P.M.		-				9.0	-			15.3	
V/C RATIO	A.M.		-				0.03	-			0.11	
	P.M.		-				0.03	-			0.13	
LEVEL OF SERVICE	A.M.		-				A	-			B	
	P.M.		-				A	-			C	
2032 30TH MAX. HOUR TRAFFIC	A.M.		585				25	390			50	
	P.M.		615				25	705			50	
8TH MAX. HOURLY TRAFFIC	A.M.		322					228			28	
	P.M.		338					402			28	

EXISTING IL 29 CURVE # 2
PI STA 44+47.91
Δ = 0°28'58" LT
T = 42.13'
L = 84.27'
R = 10000.00'
E = 0.09'
SE = NC
PC STA 44+05.78
PT STA 44+90.04

EXISTING IL 29 CURVE # 3
PI STA 47+74.78
Δ = 2°03'30" RT
T = 116.96'
L = 233.90'
R = 6511.00'
E = 1.05'
SE = NC
PC STA 46+57.82
PT STA 48+91.72

RAMP A CURVE # 1
PI STA 0+76.83
Δ = 0°35'19" RT
T = 76.83'
L = 153.66'
R = 14958.00'
E = 0.20'
SE = NC
PC STA 0+00.00
PCC STA 1+53.66

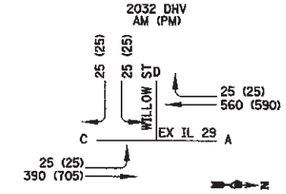
RAMP A CURVE # 2
PI STA 4+03.10
Δ = 18°53'00" RT
T = 249.44'
L = 494.37'
R = 1500.00'
E = 20.60'
SE = 0.062
SE RUN ATTAINED = 198'
SE RUN REMOVED = 234'
PCC STA 1+53.66
PT STA 6+48.03
SE ATTAINED:
STA 0+22 TO STA 2+20
SE REMOVED:
STA 5+70 TO STA 8+04

RAMP B CURVE # 4
PI STA 27+98.80
Δ = 0°43'48" LT
T = 95.57'
L = 191.14'
R = 15000.00'
E = 0.30'
SE = NC
PC STA 27+03.23
PT STA 28+94.37

TRAFFIC DATA

MOVEMENT	YEAR ____ 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR ____ 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB								-	-
AD								25	25
AC								560	590
BA								-	-
BC								-	-
BD								-	-
CD								25	25
CA								390	705
CB								-	-
DC								25	25
DB								-	-
DA								25	25
TOTAL A								1000	1345
TOTAL B								-	-
TOTAL C								1000	1345
TOTAL D								100	100

2032 DHV
AM (PM)



INTERCHANGE DESIGN STUDY

EXIST IL ROUTE 29 (RAILROAD ST)
WITH
ROUTE ____ (WILLOW ST)

SEC. NO. P-94-09-01 PROJ. NO. ____
SCALE 1" = 50' COUNTY MARSHALL
SJN : ____ REV. NO. ____

DESIGNED BY TIMOTHY C. QUIGG, HUTCHISON ENG, INC DATE 4/09

SATISFACTORY ____ DISTRICT GEOMETRICS ENGINEER DATE
SATISFACTORY ____ DISTRICT STUDIES & PLANS ENGINEER DATE
SATISFACTORY ____ DISTRICT OPERATIONS ENGINEER DATE
APPROVED ____ REGIONAL ENGINEER DATE

CADD FILE NAME : $FILEABBREV$ I.D.S. SHEET 3 OF 19

BDE-2908

•DGN-SPEC•
•DATE-TIME•
•REF-
•REF-
•REF-

BUSINESS
STATE
ROUTES

CAPACITY DESIGN STUDY

N/A PHASE	AREA OTHER	PEAK HOUR FACTOR 0.90	
N/A SEC. CYCLE	AVERAGE INTERSECTION DELAY	A.M. - SEC.	INTERSECTION LEVEL A.M. -
SIGNAL TYPE TWO-WAY STOP	PROGRAM USED HCS+, 5.21	P.M. - SEC.	OF SERVICE P.M. -

APPROACH									C NB		D EB	
BUS STOP CONDITION		N/A										
PARKING MANEUVER/HR.		N/A										
PEDESTRIANS		N/A										
ARRIVAL TYPE		N/A										
LANE UTILIZATION FACTOR		N/A										
BASE SATURATION FLOW									1700	1700	1700	
D - DISTANCE									190	N/A	N/A	
LANE GROUP									L	T	L,R	
LANE WIDTHS									12'	12'	12'	
GREEN TIME (SECONDS)	A.M.	N/A										
	P.M.	N/A										
G/C RATIO	A.M.	N/A										
	P.M.	N/A										
LANE GROUP DELAY (SECONDS)	A.M.										10.1	
	P.M.										10.7	
V/C RATIO	A.M.										0.02	
	P.M.										0.02	
LEVEL OF SERVICE	A.M.								A	A	B	
	P.M.								A	A	B	
2032 30TH MAX. HOUR TRAFFIC	A.M.								20	155	20	
	P.M.								20	220	20	
2032 8TH MAX. HOURLY TRAFFIC	A.M.									96	11	
	P.M.									132	11	

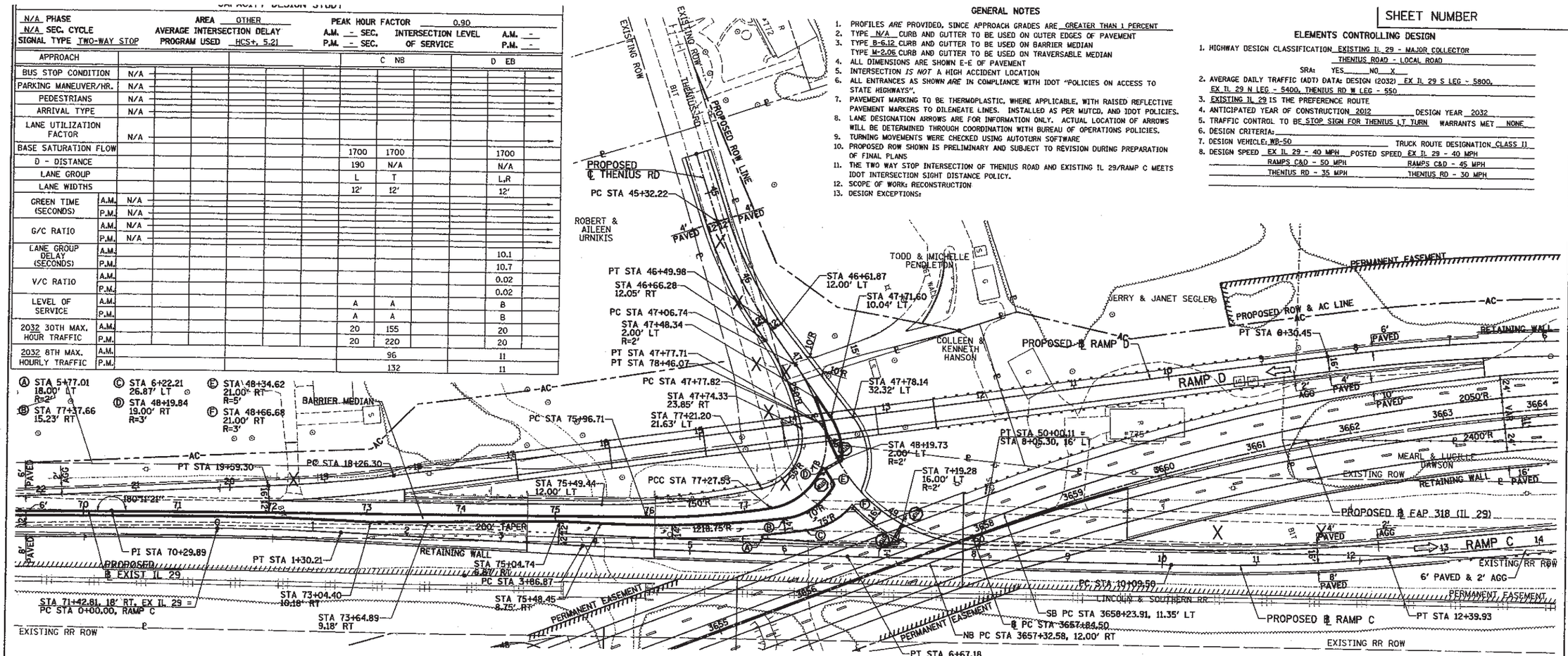
GENERAL NOTES

1. PROFILES *ARE* PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1 PERCENT
2. TYPE N/A CURB AND GUTTER TO BE USED ON OUTER EDGES OF PAVEMENT
3. TYPE B-6.12 CURB AND GUTTER TO BE USED ON BARRIER MEDIAN
   TYPE M-2.06 CURB AND GUTTER TO BE USED ON TRAVERSABLE MEDIAN
4. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT
5. INTERSECTION *IS NOT* A HIGH ACCIDENT LOCATION
6. ALL ENTRANCES AS SHOWN *ARE* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
7. PAVEMENT MARKING TO BE THERMOPLASTIC, WHERE APPLICABLE, WITH RAISED REFLECTIVE PAVEMENT MARKERS TO DILENEATE LINES. INSTALLED AS PER MUTCD, AND IDOT POLICIES.
8. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATION OF ARROWS WILL BE DETERMINED THROUGH COORDINATION WITH BUREAU OF OPERATIONS POLICIES.
9. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE
10. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS
11. THE TWO WAY STOP INTERSECTION OF THENIUS ROAD AND EXISTING IL 29/RAMP C MEETS IDOT INTERSECTION SIGHT DISTANCE POLICY.
12. SCOPE OF WORK: RECONSTRUCTION
13. DESIGN EXCEPTIONS:

SHEET NUMBER

ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION EXISTING IL 29 - MAJOR COLLECTOR
   THENIUS ROAD - LOCAL ROAD
   SRA: YES____ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN (2032) EX IL 29 S LEG - 5800, EX IL 29 N LEG - 5400, THENIUS RD W LEG - 550
3. EXISTING IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE STOP SIGN FOR THENIUS LT TURN. WARRANTS MET NONE
6. DESIGN CRITERIA:
7. DESIGN VEHICLE: WB-50 TRUCK ROUTE DESIGNATION CLASS II
8. DESIGN SPEED EX IL 29 - 40 MPH POSTED SPEED EX IL 29 - 40 MPH
   RAMPS C&D - 50 MPH RAMPS C&D - 45 MPH
   THENIUS RD - 35 MPH THENIUS RD - 30 MPH



THENIUS ROAD
CURVE # 1
PI STA 45+91.53
Δ = 16°52'05" LT
T = 59.31'
L = 117.76'
R = 400.00'
E = 4.37'
SE = 0.020 (RC)
TR RUN = 36'
SE RUN = 36'
PC STA 45+32.22
PT STA 46+49.98
SE ATTAINED:
STA 45+08 TO STA 45+44
SE REMOVED:
STA 46+38 TO STA 46+74

THENIUS ROAD
CURVE # 2
PI STA 47+42.54
Δ = 18°40'51" RT
T = 35.80'
L = 70.96'
R = 217.66'
E = 2.92'
SE = NC
PC STA 47+06.74
PT STA 47+77.71

THENIUS ROAD
CURVE # 3
PI STA 49+06.79
Δ = 72°46'47" LT
T = 128.97'
L = 222.29'
R = 175.00'
E = 42.39'
SE = NC
PC STA 47+77.82
PT STA 50+00.11

EXIST IL 29
CURVE # 11
PI STA 76+62.27
Δ = 9°22'10" LT
T = 65.56'
L = 130.82'
R = 800.00'
E = 2.68'
NB SE = 0.032
SB SE = 0.038
NB SE RUN = 125'
SB SE RUN = 50'
PC STA 75+96.71
PT STA 77+27.53
NB SE TRANSITION:
STA 76+07 TO STA 77+32
SB SE ATTAINED:
STA 76+07 TO 76+57
SE REMOVED:
TIE TO INTERSECTION DESIGN

EXIST IL 29
CURVE # 12
PI STA 78+06.69
Δ = 91°01'36" LT
T = 79.16'
L = 118.54'
R = 70.00'
E = 35.67'
SE = NC
PC STA 77+27.53
PT STA 78+46.07

RAMP C
CURVE # 1
PI STA 0+65.11
Δ = 2°29'12" RT
T = 65.11'
L = 130.21'
R = 3000.00'
E = 0.71'
SE = NC
PC STA 0+00.00
PT STA 1+30.21

RAMP C
CURVE # 2
PI STA 5+27.03
Δ = 1°36'22" LT
T = 140.16'
L = 280.31'
R = 10000.00'
E = 0.98'
SE = NC
PC STA 3+86.87
PT STA 6+67.18

RAMP C
CURVE # 3
PI STA 11+24.84
Δ = 6°36'06" LT
T = 115.35'
L = 230.44'
R = 2000.00'
E = 3.32'
SE = 0.051
TR RUN = 49'
SE RUN = 165'
PC STA 10+09.50
PT STA 12+39.93
SE ATTAINED:
STA 8+51 TO STA 10+65
SE REMOVED:
STA 11+85 TO STA 13+99

FAP 318 (IL 29)
CURVE # 4-38
PI STA 3663+25.86
Δ = 27°38'54" RT
T = 541.36'
L = 1061.62'
R = 2200.00'
E = 65.63'
NB SE = 0.059 (R=2400')
SB SE = 0.060 (R=2050')
NB SE RUN = 267'
SB SE RUN = 270'
TR RUN = 90'
PC STA 3657+84.50
PT STA 3668+46.12
NB SE ATTAINED:
STA 3656+45 TO STA 3658+22
SB SE ATTAINED:
STA 3655+54 TO STA 3659+14
NB SE REMOVED:
STA 3668+09 TO STA 3671+66
SB SE REMOVED:
STA 3667+17 TO STA 3670+77

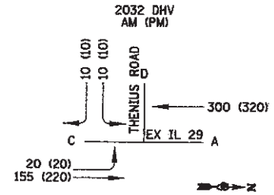
RAMP D
CURVE # 1
PI STA. 5+10.56
Δ = 17°21'35" LT
T = 324.87'
L = 644.76'
R = 2128.00'
E = 24.66'
SE = 0.0418
SE RUN = 86'
PC STA 1+85.69
PT STA 8+30.45
SE ATTAINED:
STA 0+00.00 TO 2+45.00
SE REMOVED:
STA 7+80.00 TO 8+58.00

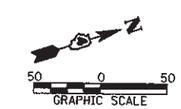
RAMP D
CURVE # 2
PI STA 18+92.84
Δ = 5°04'49" RT
T = 66.54'
L = 133.00'
R = 1500.00'
E = 1.48'
SE = 0.036
TR RUN = 49'
SE RUN = 164'
PC STA 18+26.30
PT STA 19+59.30
SE ATTAINED:
STA 16+64 TO STA 18+76
SE REMOVED:
STA 19+09 TO STA 21+22

TRAFFIC DATA

MOVEMENT	YEAR ____ 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR ____ 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB								--	--
AD								--	--
AC								300	320
BA								--	--
BC								--	--
BD								--	--
CD								20	20
CA								155	220
CB								--	--
DC								10	10
DB								--	--
DA								10	10
TOTAL A								465	550
TOTAL B								--	--
TOTAL C								475	560
TOTAL D								40	40

2032 DHV
AM (PM)





INTERSECTION DESIGN STUDY

EXIST IL ROUTE 29 (RAILROAD ST)
WITH
___ ROUTE ___ (THENIUS ROAD)

SEC. NO. P-94-009-01 PROJ. NO.
SCALE 1" = 50' COUNTY MARSHALL
SJN : REV. NO.
DESIGNED BY TIMOTHY C. QUIGG, HUTCHISON ENG, INC. DATE 4/09

SATISFACTORY ____ DISTRICT GEOMETRICS ENGINEER DATE
SATISFACTORY ____ DISTRICT STUDIES & PLANS ENGINEER DATE
SATISFACTORY ____ DISTRICT OPERATIONS ENGINEER DATE
APPROVED ____ REGIONAL ENGINEER DATE

CADD FILE NAME : C
I.D.S. SHEET 4 OF 19

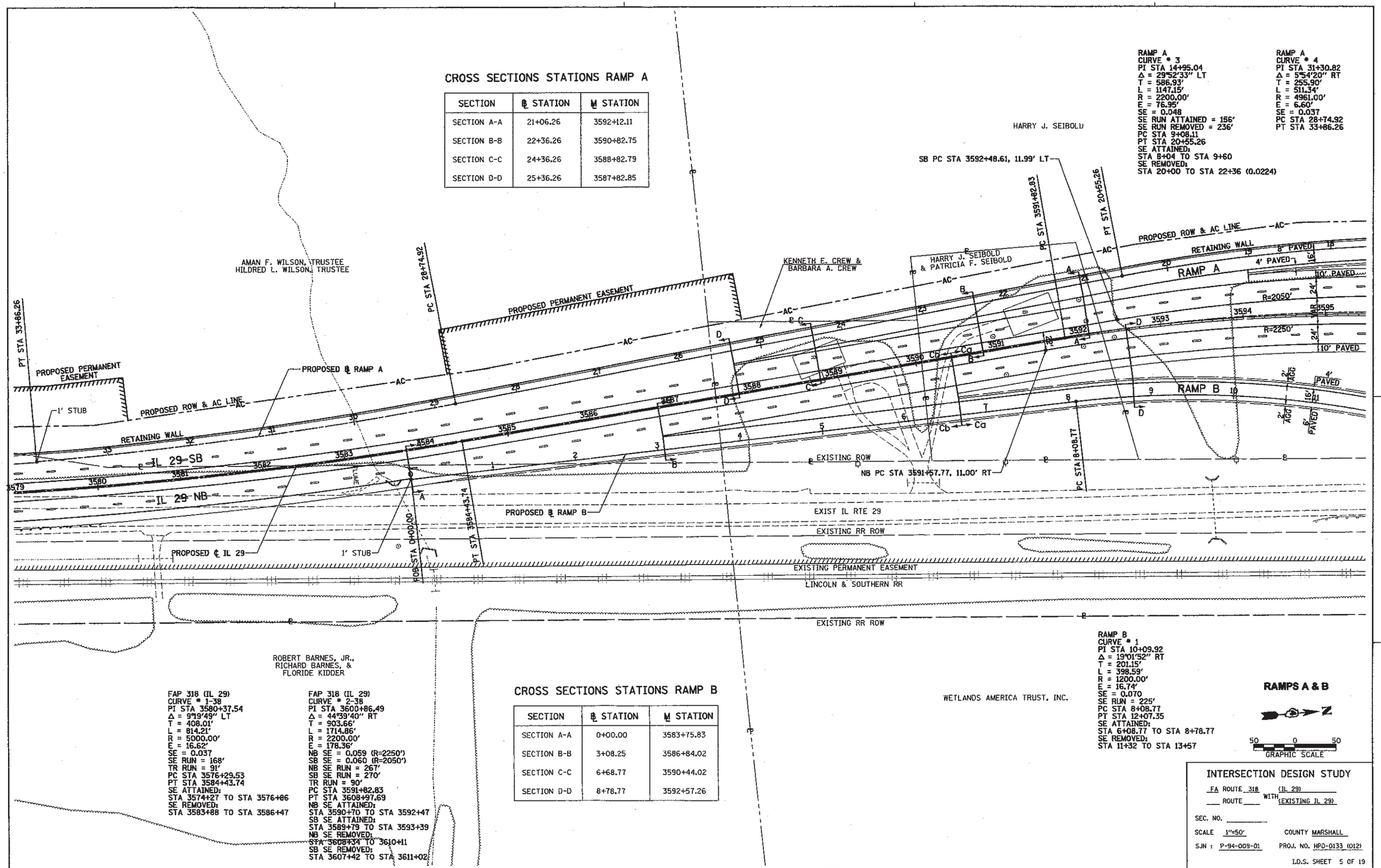
BDE-9908

CROSS SECTIONS STATIONS RAMP A

SECTION	℄ STATION	M STATION
SECTION A-A	21+06.26	3592+12.11
SECTION B-B	22+36.26	3590+82.75
SECTION C-C	24+36.26	3588+82.79
SECTION D-D	25+36.26	3587+82.85

RAMP A
CURVE # 3
PI STA 14+95.04
Δ = 29°52'33" LT
T = 586.93'
L = 1147.15'
R = 2200.00'
E = 76.95'
SE = 0.048
SE RUN ATTAINED = 156'
SE RUN REMOVED = 236'
PC STA 9+08.11
PT STA 20+55.26
SE ATTAINED:
STA 8+04 TO STA 9+60
SE REMOVED:
STA 20+00 TO STA 22+36 (0.0224)

RAMP A
CURVE # 4
PI STA 31+30.82
Δ = 5°54'20" RT
T = 255.90'
L = 511.34'
R = 4961.00'
E = 6.60'
SE = 0.037
PC STA 28+74.92
PT STA 33+86.26



ROBERT BARNES, JR.,
RICHARD BARNES, &
FLORIDE KIDDER

FAP 318 (IL 29)
CURVE # 1-3B
PI STA 3580+37.54
Δ = 9°19'49" LT
T = 408.01'
L = 814.21'
R = 5000.00'
E = 16.62'
SE = 0.037
SE RUN = 168'
TR RUN = 91'
PC STA 3576+29.53
PT STA 3584+43.74
SE ATTAINED:
STA 3574+27 TO STA 3576+86
SE REMOVED:
STA 3583+88 TO STA 3586+47

FAP 318 (IL 29)
CURVE # 2-3B
PI STA 3600+86.49
Δ = 44°39'40" RT
T = 903.66'
L = 1714.86'
R = 2200.00'
E = 178.36'
NB SE = 0.059 (R=2250')
SB SE = 0.060 (R=2050')
NB SE RUN = 267'
SB SE RUN = 270'
TR RUN = 90'
PC STA 3591+82.83
PT STA 3608+97.69
NB SE ATTAINED:
STA 3590+70 TO STA 3592+47
SB SE ATTAINED:
STA 3589+79 TO STA 3593+39
NB SE REMOVED:
STA 3608+34 TO 3610+11
SB SE REMOVED:
STA 3607+42 TO STA 3611+02

CROSS SECTIONS STATIONS RAMP B

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3583+75.83
SECTION B-B	3+08.25	3586+84.02
SECTION C-C	6+68.77	3590+44.02
SECTION D-D	8+78.77	3592+57.26

WETLANDS AMERICA TRUST, INC.

RAMP B
CURVE # 1
PI STA 10+09.92
Δ = 19°01'52" RT
T = 201.15'
L = 398.59'
R = 1200.00'
E = 16.74'
SE = 0.070
SE RUN = 225'
PC STA 8+08.77
PT STA 12+07.35
SE ATTAINED:
STA 6+08.77 TO STA 8+78.77
SE REMOVED:
STA 11+32 TO STA 13+57

RAMPS A & B

N

50 0 50
GRAPHIC SCALE

INTERSECTION DESIGN STUDY

FA ROUTE 318 (IL 29)
___ ROUTE ___ WITH (EXISTING IL 29)

SEC. NO. _____

SCALE 1"=50' COUNTY MARSHALL

SJN : P-94-009-01 PROJ. NO. HPO-0133 (012)

I.D.S. SHEET 5 OF 19

BDE-9906

RAMP D
CURVE # 1
PI STA. 5+10.56
Δ = 17°21'35" LT
T = 324.87'
L = 644.76'
R = 2128.00'
E = 24.66'
SE = 0.0418
TR RUN =
SE RUN =
PC STA 1+85.69
PT STA 8+30.45
SE ATTAINED:
STA 0+00.00 TO 2+45.00
SE REMOVED:
STA 7+80.00 TO 8+58.00

JERRY A. SEGLER, SR.
& JANET L. SEGLER

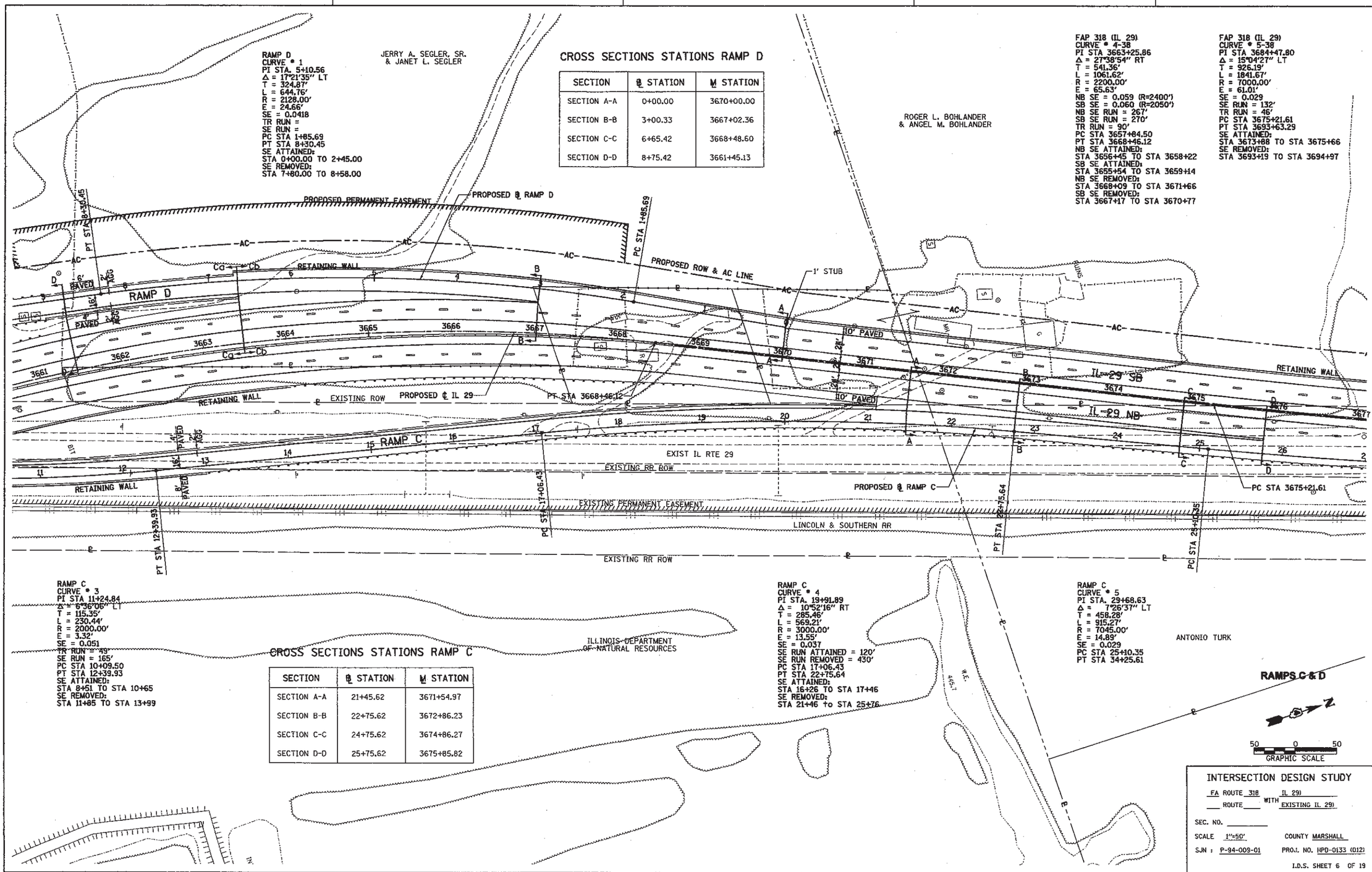
CROSS SECTIONS STATIONS RAMP D

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3670+00.00
SECTION B-B	3+00.33	3667+02.36
SECTION C-C	6+65.42	3668+48.60
SECTION D-D	8+75.42	3661+45.13

ROGER L. BOHLANDER
& ANGEL M. BOHLANDER

FAP 318 (IL 29)
CURVE # 4-38
PI STA 3663+25.86
Δ = 27°38'54" RT
T = 541.36'
L = 1061.62'
R = 2200.00'
E = 65.63'
NB SE = 0.059 (R=2400')
SB SE = 0.060 (R=2050')
NB SE RUN = 267'
SB SE RUN = 270'
TR RUN = 90'
PC STA 3657+84.50
PT STA 3668+46.12
NB SE ATTAINED:
STA 3656+45 TO STA 3658+22
SB SE ATTAINED:
STA 3655+54 TO STA 3659+14
NB SE REMOVED:
STA 3668+09 TO STA 3671+66
SB SE REMOVED:
STA 3667+17 TO STA 3670+77

FAP 318 (IL 29)
CURVE # 5-38
PI STA 3684+47.80
Δ = 15°04'27" LT
T = 926.19'
L = 1841.67'
R = 7000.00'
E = 61.01'
SE = 0.029
SE RUN = 132'
TR RUN = 46'
PC STA 3675+21.61
PT STA 3693+63.29
SE ATTAINED:
STA 3673+88 TO STA 3675+66
SE REMOVED:
STA 3693+19 TO STA 3694+97



RAMP C
CURVE # 3
PI STA 11+24.84
Δ = 6°36'06" LT
T = 115.35'
L = 230.44'
R = 2000.00'
E = 3.32'
SE = 0.051
TR RUN = 49'
SE RUN = 165'
PC STA 10+09.50
PT STA 12+39.93
SE ATTAINED:
STA 8+51 TO STA 10+65
SE REMOVED:
STA 11+85 TO STA 13+99

CROSS SECTIONS STATIONS RAMP C

SECTION	℄ STATION	M STATION
SECTION A-A	21+45.62	3671+54.97
SECTION B-B	22+75.62	3672+86.23
SECTION C-C	24+75.62	3674+86.27
SECTION D-D	25+75.62	3675+85.82

RAMP C
CURVE # 4
PI STA. 19+91.89
Δ = 10°52'16" RT
T = 285.46'
L = 569.21'
R = 3000.00'
E = 13.55'
SE = 0.037
SE RUN ATTAINED = 120'
SE RUN REMOVED = 430'
PC STA 17+06.43
PT STA 22+75.64
SE ATTAINED:
STA 16+26 TO STA 17+46
SE REMOVED:
STA 21+46 to STA 25+76

RAMP C
CURVE # 5
PI STA. 29+68.63
Δ = 7°26'37" LT
T = 458.28'
L = 915.27'
R = 7045.00'
E = 14.89'
SE = 0.029
PC STA 25+10.35
PT STA 34+25.61

INTERSECTION DESIGN STUDY

FA ROUTE 318 IL 29
WITH
ROUTE EXISTING IL 29

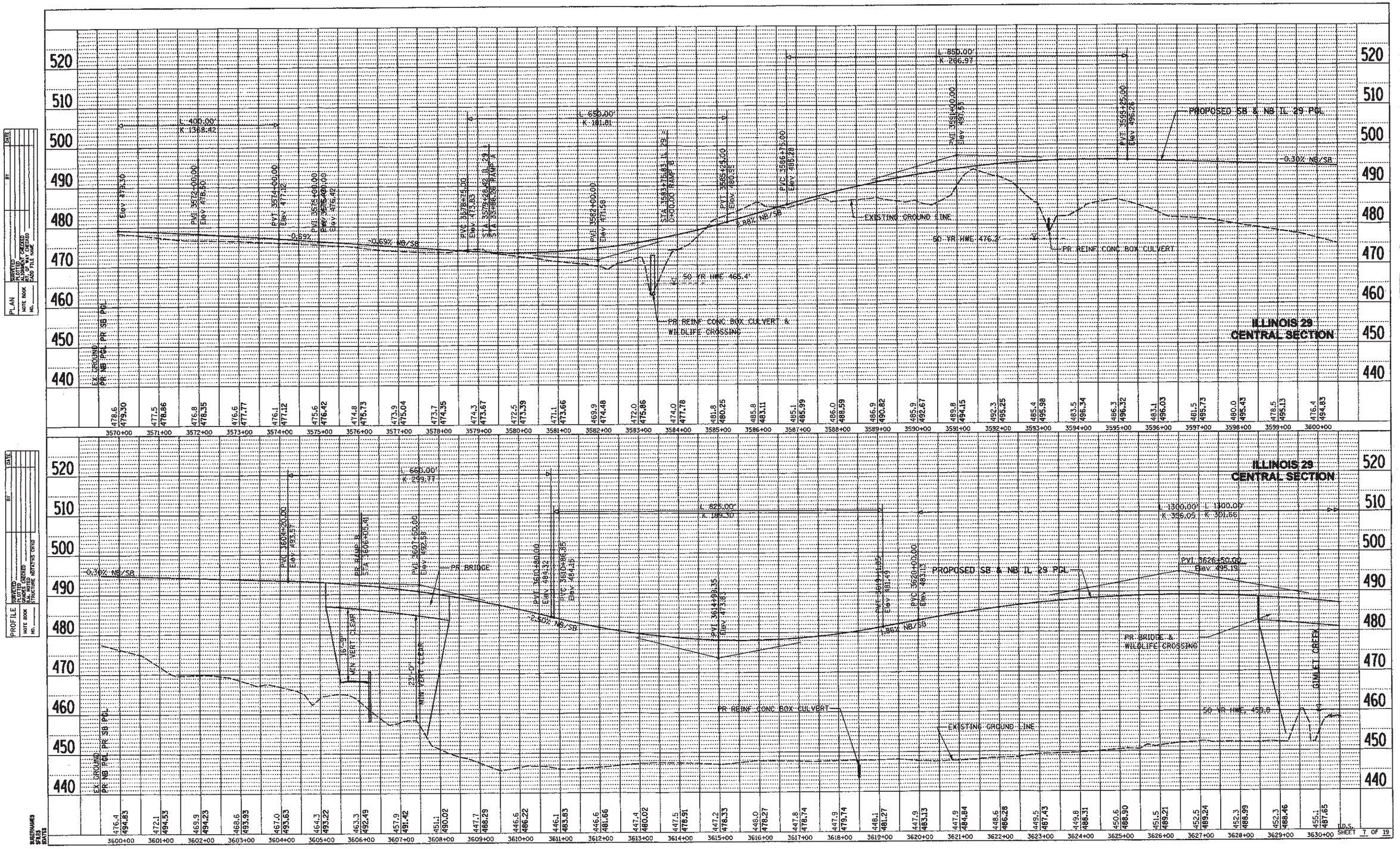
SEC. NO.

SCALE 1"=50' COUNTY MARSHALL

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 6 OF 19

BDE-5908


PLAN
PROFILE
ILLINOIS 29
CENTRAL SECTION
PROPOSED SB & NB IL 29 PGL
EXISTING GROUND LINE
50 YR HWE 476.2'
50 YR HWE 465.4'
50 YR HWE 459.6'
PR REINF CONC BOX CULVERT
PR REINF CONC BOX CULVERT & WILDLIFE CROSSING
PR BRIDGE
PR BRIDGE & WILDLIFE CROSSING
0.30% NB/SB
0.69% NB/SB
0.86% NB/SB
0.50% NB/SB
L 400.00'
K 1368.42
L 650.00'
K 181.81
L 850.00'
K 266.97
L 660.00'
K 299.77
L 825.00'
K 186.30
L 1300.00'
K 356.05
L 1300.00'
K 391.66
PVT 3572+00.00
Elev 479.30
PVC 3572+00.00
Elev 478.50
PVT 3574+00.00
Elev 477.42
PVC 3576+00.00
Elev 476.42
PVC 3578+00.00
Elev 475.42
PVC 3578+45.00
Elev 473.83
STA 3579+28.42 B. 29
STA 3586.26 RAMP A
PVC 3582+00.00
Elev 470.56
STA 3583+76.83 L. 29
0+00.00 RAMP B
PVT 3585+23.00
Elev 480.95
PVC 3586+75.00
Elev 486.28
PVT 3591+00.00
Elev 495.59
PVT 3594+25.00
Elev 495.24
PVC 3604+20.00
Elev 493.57
PR RAMP B
STA 3606+05.41
PVT 3607+05.00
Elev 492.58
PVC 3609+80.00
Elev 484.32
PVC 3610+86.95
Elev 484.15
PVT 3614+99.35
Elev 473.38
PVC 3619+11.85
Elev 481.49
PVC 3620+03.00
Elev 483.12
PVT 3626+50.00
Elev 495.19
MIN VERT 13.5'
16'-9"
23'-0"
MIN VERT CLEAR
GIMLET CREEK
EX GROUND
PR NB PGL
PR SB PGL
SUBNAMES
SP133
SP133
SP133
DATE
BY
PLOTTED
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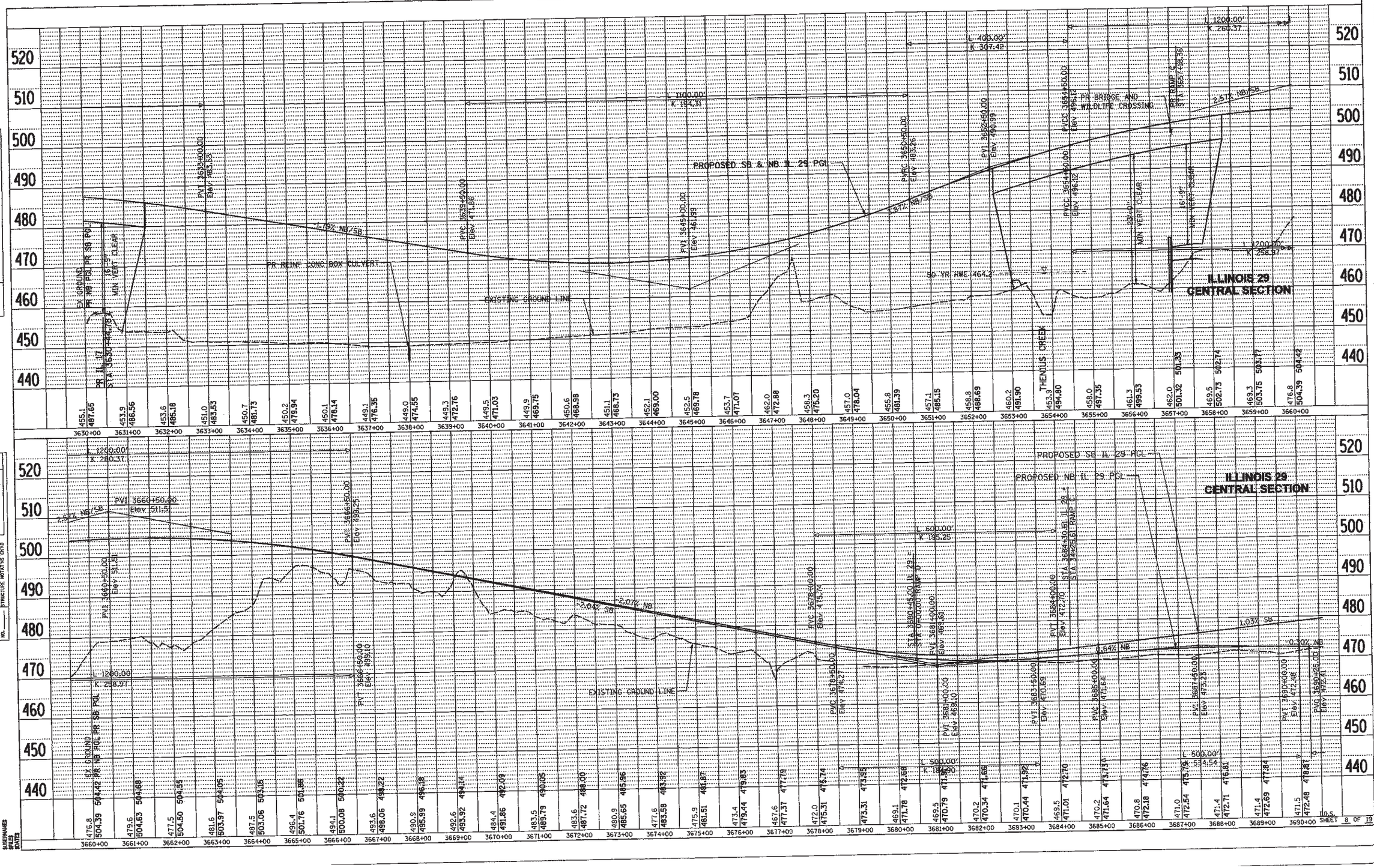
GRADES CHECKED
NOTE BOOK
NO.
STRUCTURE NOTATIONS CHKD
CADD FILE NAME
SHEET 7 OF 19



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NOTE BOOK NO.
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GRADES CHECKED
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STRUCTURE NOTATIONS CHKD
BY
DATE

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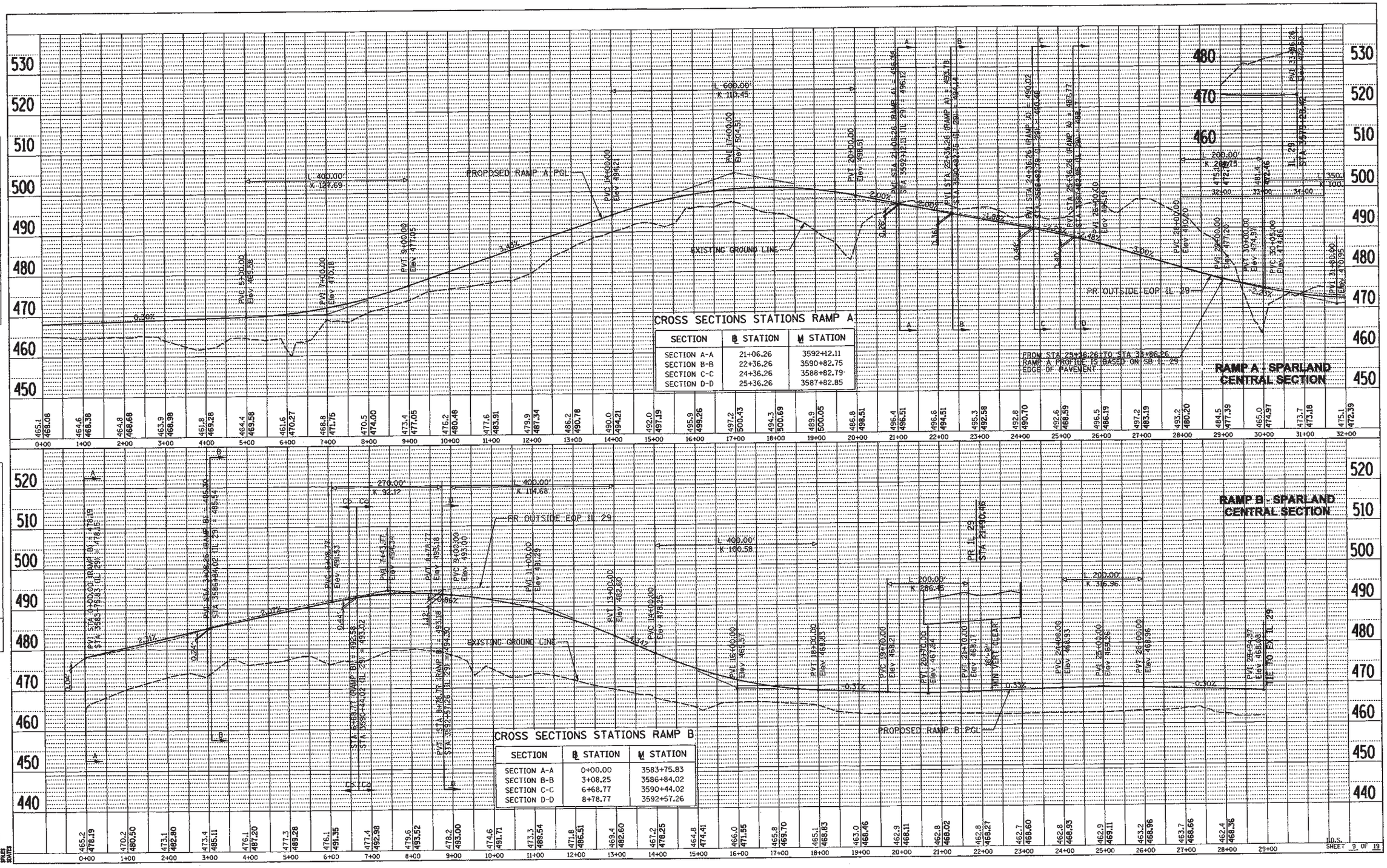
SHEET
DATED

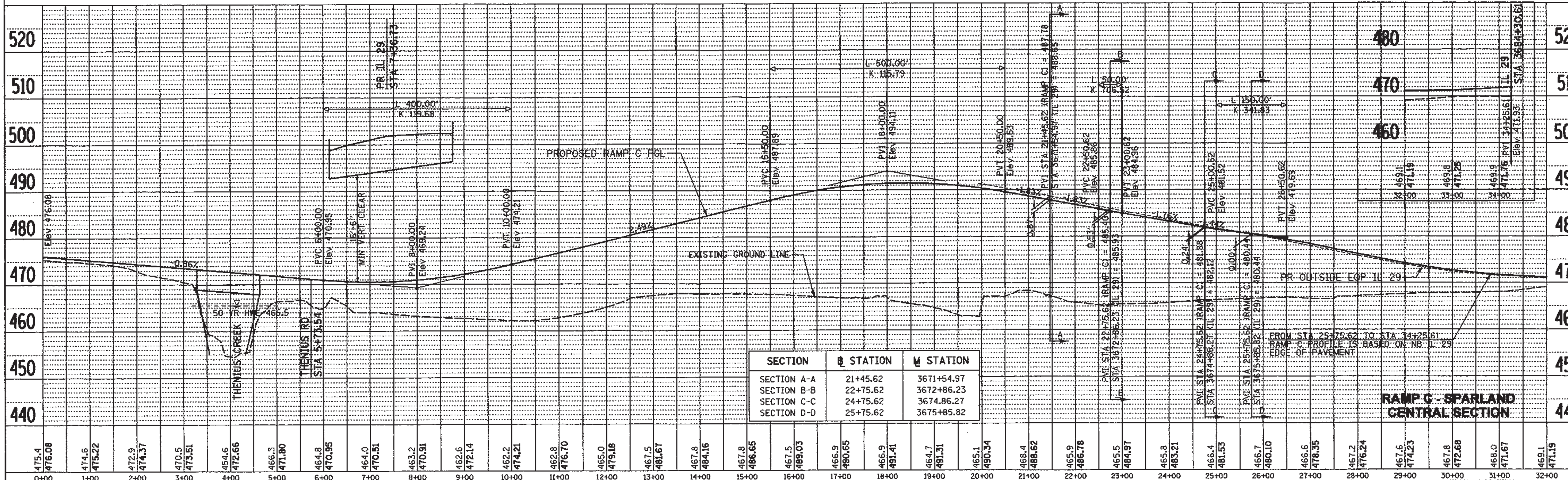


CROSS SECTIONS STATIONS RAMP A

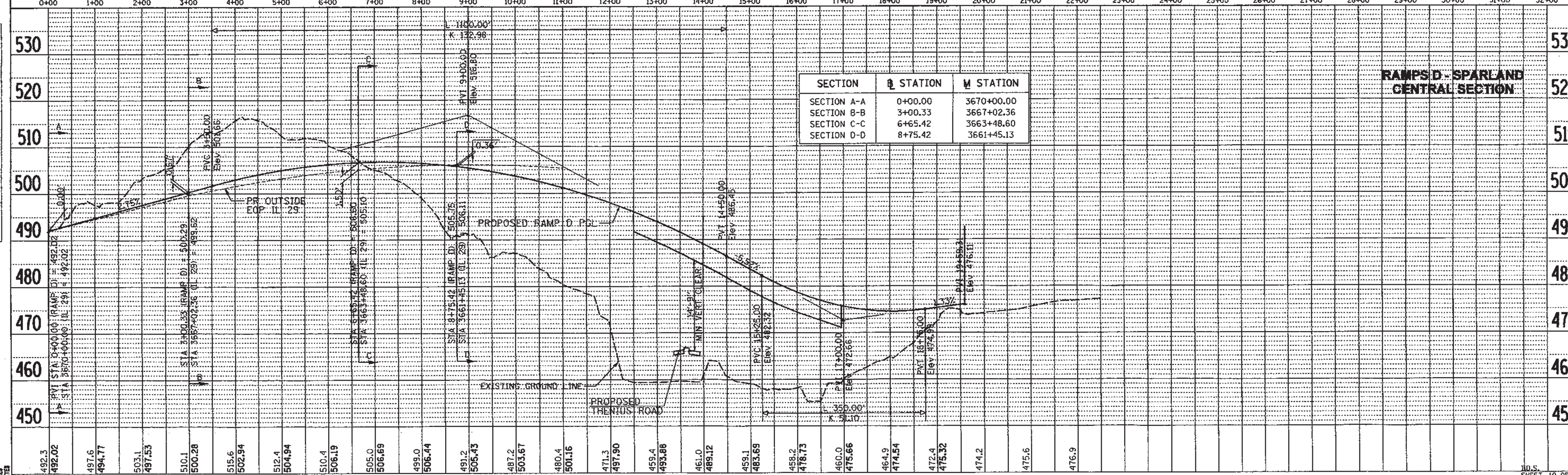
SECTION	℄ STATION	M STATION
SECTION A-A	21+06.26	3592+12.11
SECTION B-B	22+36.26	3590+82.75
SECTION C-C	24+36.26	3588+82.79
SECTION D-D	25+36.26	3587+82.85

CROSS SECTIONS STATIONS RAMP B

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3583+75.83
SECTION B-B	3+08.25	3586+84.02
SECTION C-C	6+68.77	3590+44.02
SECTION D-D	8+78.77	3592+57.26

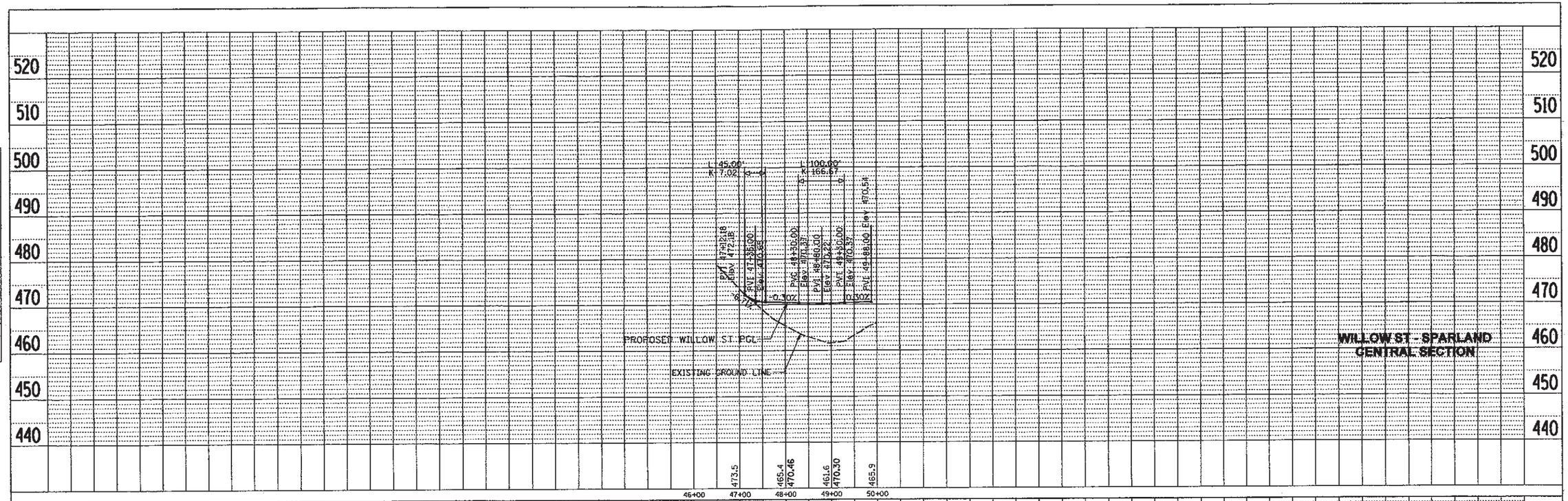


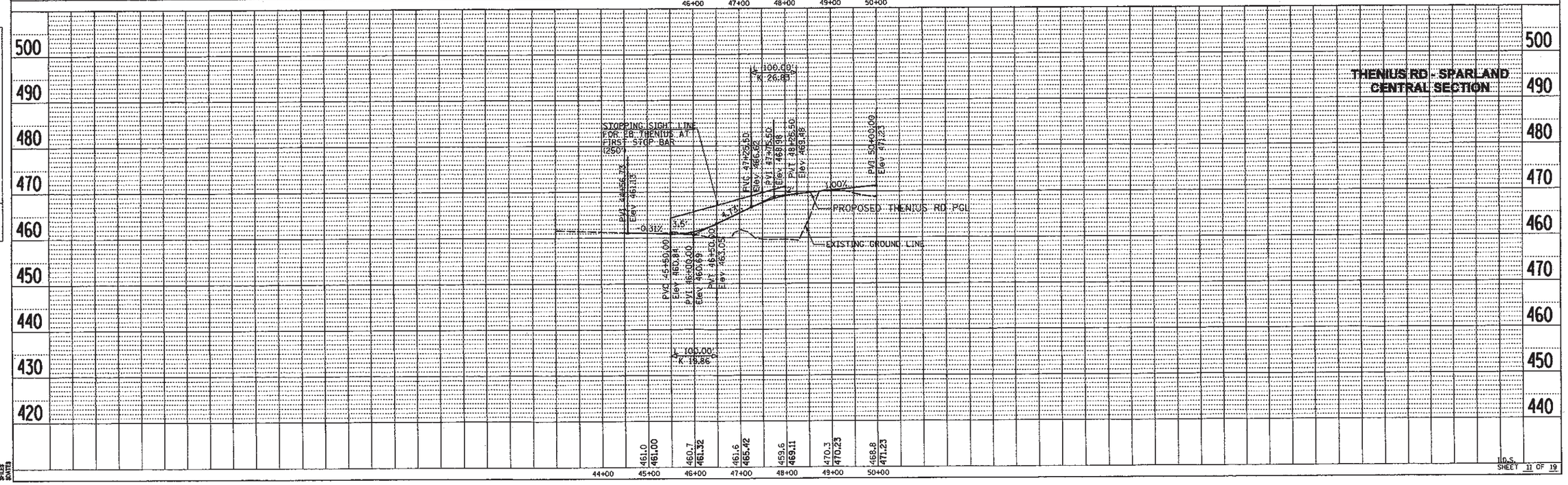
SECTION	℄ STATION	M STATION
SECTION A-A	21+45.62	3671+54.97
SECTION B-B	22+75.62	3672+86.23
SECTION C-C	24+75.62	3674.86.27
SECTION D-D	25+75.62	3675+85.82



SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3670+00.00
SECTION B-B	3+00.33	3667+02.36
SECTION C-C	6+65.42	3663+48.60
SECTION D-D	8+75.42	3661+45.13

PLAN
PROFILE





PLAN

NOTE BOOK NO.	SURVEYED	PLOTTED	ALIGNMENT CHECKED	DTL. & XS. CHECKED	PLAN & PROFILE CHECKED	BY	DATE

PROFILE

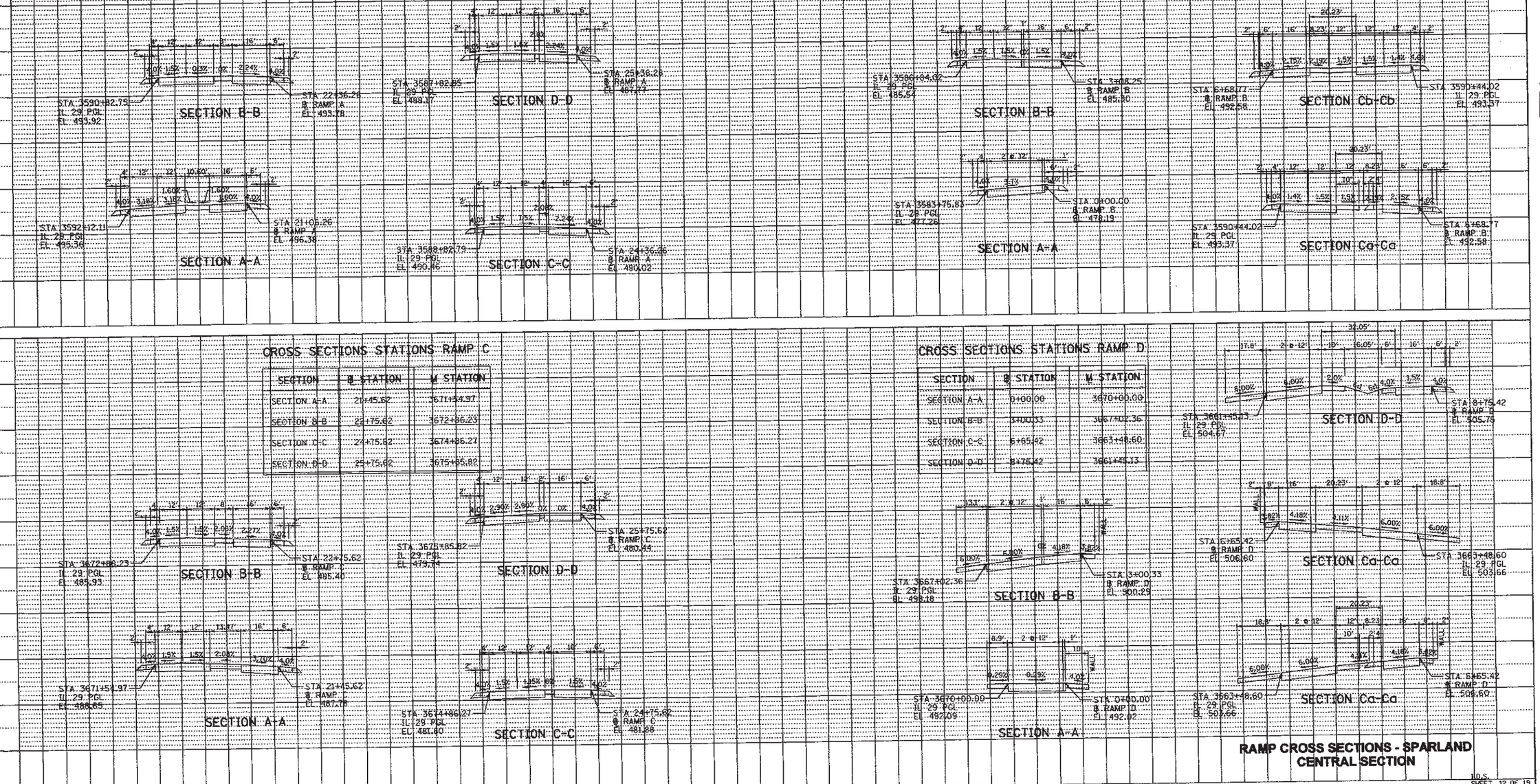
NOTE BOOK NO.	SURVEYED	PLOTTED	GRADES CHECKED	BAL. NOTED	PROFILE PROJ'N'S TYPED	BY	DATE

USERNAME
FILES
DATES

10.5.
SHEET 11 OF 19

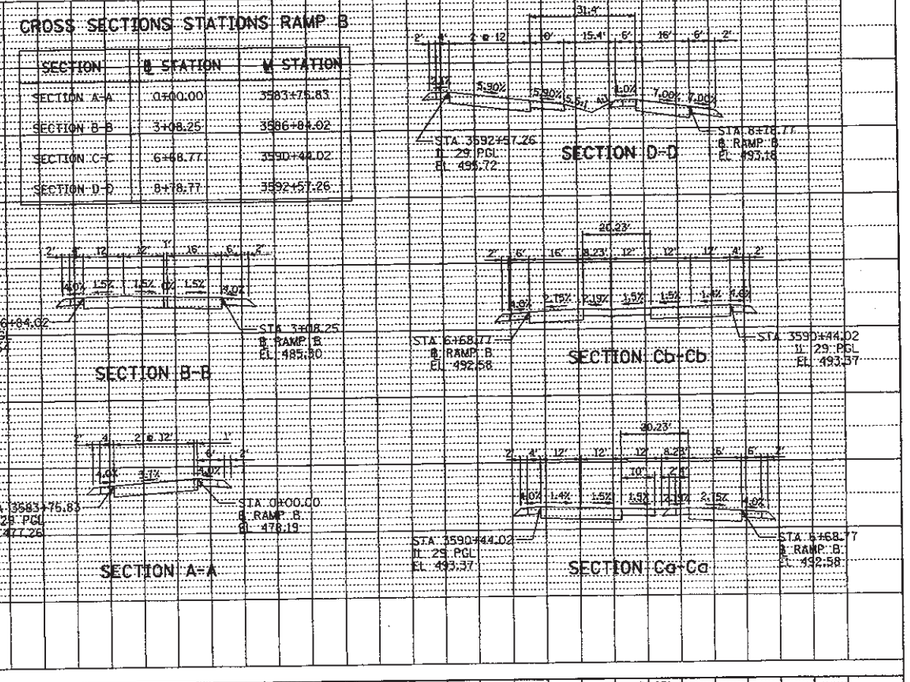
CROSS SECTIONS STATIONS RAMP A

SECTION	℄ STATION	M STATION
SECTION A-A	21+06.26	3592+12.11
SECTION B-B	22+36.26	3590+82.75
SECTION C-C	24+36.26	3588+82.79
SECTION D-D	25+36.26	3587+82.85



CROSS SECTIONS STATIONS RAMP B

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3583+75.83
SECTION B-B	3+08.25	3586+84.02
SECTION C-C	6+68.77	3590+44.02
SECTION D-D	8+18.77	3592+57.26



CROSS SECTIONS STATIONS RAMP C

SECTION	℄ STATION	M STATION
SECTION A-A	21+45.62	3671+54.97
SECTION B-B	22+75.62	3672+86.23
SECTION C-C	24+75.62	3674+86.27
SECTION D-D	25+75.62	3675+85.82

CROSS SECTIONS STATIONS RAMP D

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	3670+00.00
SECTION B-B	3+00.33	3667+02.36
SECTION C-C	6+65.42	3663+48.60
SECTION D-D	8+75.42	3661+45.13

RAMP CROSS SECTIONS - SPARLAND
CENTRAL SECTION

U.S.
SHEET 12 OF 19

PLAN
NOTE BOOK NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
PLAN OF MAP CHECKED
CADD FILE NAME
BY DATE

PROFILE
NOTE BOOK NO.
PLOTTED
GRADES CHECKED
ALL WORK
STRUCTURE NOTATIONS CHECKED
BY DATE

SUBDIVISIONS
SPLITS
JOINTS

CAPACITY DESIGN STUDY

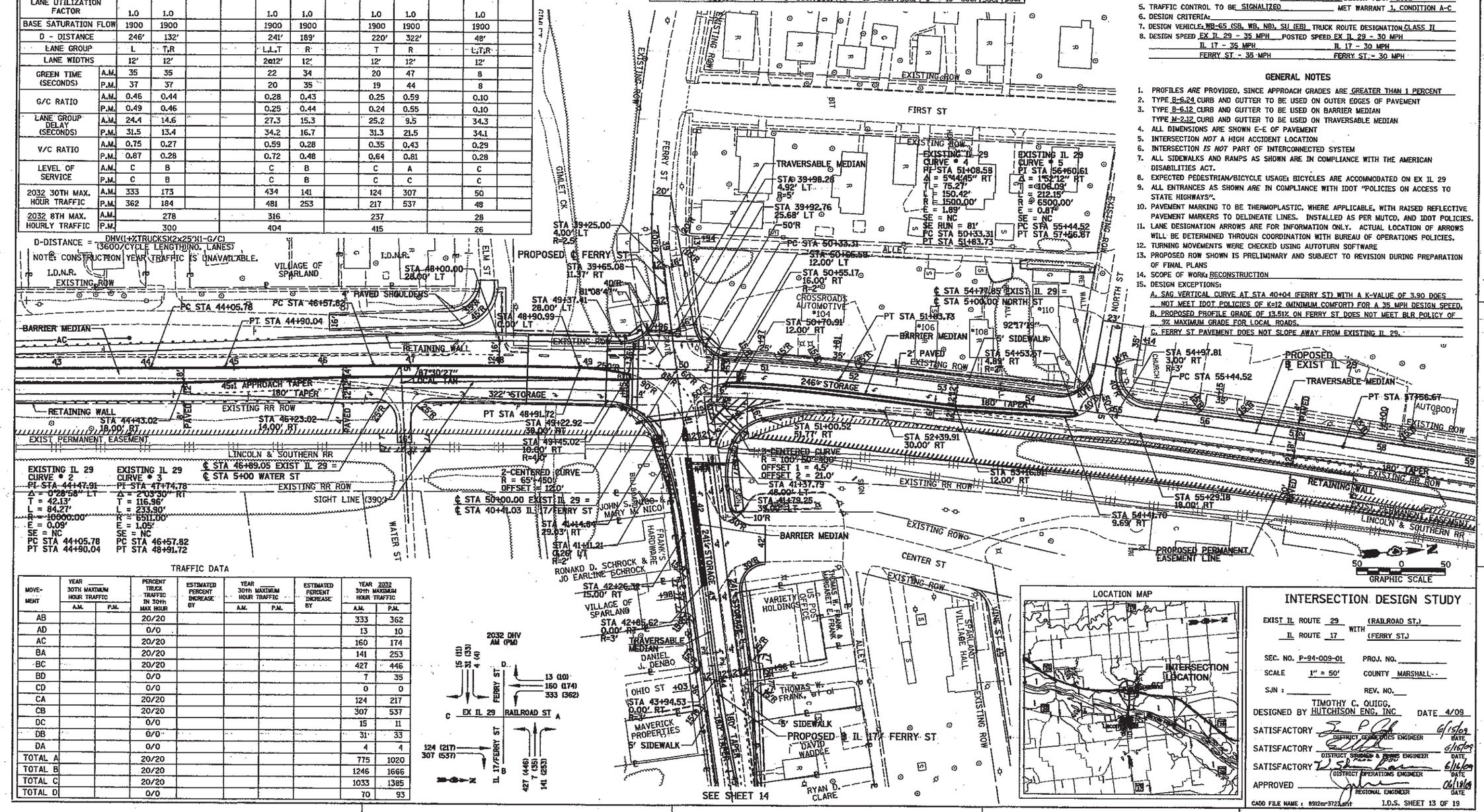
4 PHASE — AREA OTHER — PEAK HOUR FACTOR 0.90
80 SEC. CYCLE — AVERAGE INTERSECTION DELAY — A.M. 20.2 SEC. — INTERSECTION LEVEL OF SERVICE — A.M. C
SIGNAL TYPE ACTUATED — PROGRAM USED HCS+, 5.21 — P.M. 26.1 SEC. — P.M. C

APPROACH		A SB		B WB		C NB		D EB
BUS STOP CONDITION		N/A	N/A	N/A	N/A	N/A	N/A	N/A
PARKING MANEUVER/HR.		N/A	N/A	N/A	N/A	N/A	N/A	N/A
PEDESTRIANS		N/A	N/A	N/A	N/A	N/A	N/A	N/A
ARRIVAL TYPE		3	3	3	3	3	3	3
LANE UTILIZATION FACTOR		1.0	1.0	1.0	1.0	1.0	1.0	1.0
BASE SATURATION FLOW		1900	1900	1900	1900	1900	1900	1900
D - DISTANCE		246'	132'	241'	189'	220'	322'	48'
LANE GROUP		L	T,R	L,L,T	R	T	R	L,T,R
LANE WIDTHS		12'	12'	2@12'	12'	12'	12'	12'
GREEN TIME (SECONDS)	A.M.	35	35	22	34	20	47	8
	P.M.	37	37	20	35	19	44	8
G/C RATIO	A.M.	0.46	0.44	0.28	0.43	0.25	0.59	0.10
	P.M.	0.49	0.46	0.25	0.44	0.24	0.55	0.10
LANE GROUP DELAY (SECONDS)	A.M.	24.4	14.6	27.3	15.3	25.2	9.5	34.3
	P.M.	31.5	13.4	34.2	16.7	31.3	21.5	34.1
V/C RATIO	A.M.	0.75	0.27	0.59	0.28	0.35	0.43	0.29
	P.M.	0.87	0.28	0.72	0.48	0.64	0.81	0.28
LEVEL OF SERVICE	A.M.	C	B	C	B	C	A	C
	P.M.	C	B	C	B	C	C	C
2032 30TH MAX. HOUR TRAFFIC	A.M.	333	173	434	141	124	307	50
	P.M.	362	184	481	253	217	537	48
2032 8TH MAX. HOURLY TRAFFIC	A.M.	278		316		237		28
	P.M.	300		404		415		26

D-DISTANCE = DHV(1+%TRUCKS)(2x25)(1-G/C) / (3600/CYCLE LENGTH)(NO. LANES)

NOTE: CONSTRUCTION YEAR TRAFFIC IS UNAVAILABLE.

	PHASE 1			PHASE 2		PHASE 3		PHASE 4		
		AMBER	RED		AMBER		AMBER		AMBER	RED
AM	G/C= 0.29 G = 22 Sec.	4 Sec.	2 Sec.	G/C= 0.10 G = 8 Sec.	4 Sec.	G/C= 0.19 G = 12 Sec.	3 Sec.	G/C= 0.21 G = 20 Sec.	4 Sec.	1 Sec.
PM	G/C= 0.25 G = 20 Sec.	4 Sec.	2 Sec.	G/C= 0.10 G = 8 Sec.	4 Sec.	G/C= 0.19 G = 15 Sec.	3 Sec.	G/C= 0.24 G = 19 Sec.	4 Sec.	1 Sec.



TRAFFIC DATA

MOVEMENT	YEAR ___ 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB			20/20					333	362
AD			0/0					13	10
AC			20/20					160	174
BA			20/20					141	253
BC			20/20					427	446
BD			0/0					7	35
CD			0/0					0	0
CA			20/20					124	217
CB			20/20					307	537
DC			0/0					15	11
DB			0/0					31	33
DA			0/0					4	4
TOTAL A			20/20					775	1020
TOTAL B			20/20					1246	1666
TOTAL C			20/20					1033	1385
TOTAL D			0/0					70	93

SHEET NUMBER

ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION EXISTING IL 29 - MAJOR COLLECTOR
   IL 17 EAST LEG - PRINCIPAL ARTERIAL
   FERRY ST WEST LEG - LOCAL ROAD
   SRA: YES ___ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN (2032) EX IL 29 N LEG - 8400,
   EX IL 29 S LEG - 11,600, IL 17 E LEG - 13,800, FERRY ST W LEG - 900
3. EX IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE SIGNALIZED MET WARRANT 1, CONDITION A-C
6. DESIGN CRITERIA:
7. DESIGN VEHICLE: WB-65 (SB, WB, NB), SU (EB) TRUCK ROUTE DESIGNATION CLASS II
8. DESIGN SPEED EX IL 29 - 35 MPH POSTED SPEED EX IL 29 - 30 MPH
   IL 17 - 35 MPH IL 17 - 30 MPH
   FERRY ST - 35 MPH FERRY ST - 30 MPH

GENERAL NOTES

1. PROFILES *ARE* PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1 PERCENT
2. TYPE B-6.24 CURB AND GUTTER TO BE USED ON OUTER EDGES OF PAVEMENT
3. TYPE B-6.12 CURB AND GUTTER TO BE USED ON BARRIER MEDIAN
   TYPE M-2.12 CURB AND GUTTER TO BE USED ON TRAVERSABLE MEDIAN
4. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT
5. INTERSECTION *NOT* A HIGH ACCIDENT LOCATION
6. INTERSECTION *IS NOT* PART OF INTERCONNECTED SYSTEM
7. ALL SIDEWALKS AND RAMPS AS SHOWN ARE IN COMPLIANCE WITH THE AMERICAN DISABILITIES ACT.
8. EXPECTED PEDESTRIAN/BICYCLE USAGE: BICYCLES ARE ACCOMMODATED ON EX IL 29
9. ALL ENTRANCES AS SHOWN *ARE* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
10. PAVEMENT MARKING TO BE THERMOPLASTIC, WHERE APPLICABLE, WITH RAISED REFLECTIVE PAVEMENT MARKERS TO DELINEATE LINES. INSTALLED AS PER MUTCD, AND IDOT POLICIES.
11. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATION OF ARROWS WILL BE DETERMINED THROUGH COORDINATION WITH BUREAU OF OPERATIONS POLICIES.
12. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE
13. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS
14. SCOPE OF WORK: RECONSTRUCTION
15. DESIGN EXCEPTIONS:
    A. SAG VERTICAL CURVE AT STA 40+04 (FERRY ST) WITH A K-VALUE OF 3.90 DOES NOT MEET IDOT POLICIES OF K=12 (MINIMUM COMFORT) FOR A 35 MPH DESIGN SPEED.
    B. PROPOSED PROFILE GRADE OF 13.51% ON FERRY ST DOES NOT MEET BLR POLICY OF 9% MAXIMUM GRADE FOR LOCAL ROADS.
    C. FERRY ST PAVEMENT DOES NOT SLOPE AWAY FROM EXISTING IL 29.

LOCATION MAP

INTERSECTION DESIGN STUDY

EXIST IL ROUTE 29 (RAILROAD ST.) WITH IL ROUTE 17 (FERRY ST.)

SEC. NO. P-94-009-01 PROJ. NO. ___
SCALE 1" = 50' COUNTY MARSHALL
SJN: ___ REV. NO. ___

DESIGNED BY TIMOTHY C. QUIGG, HUTCHISON ENG. INC DATE 4/09

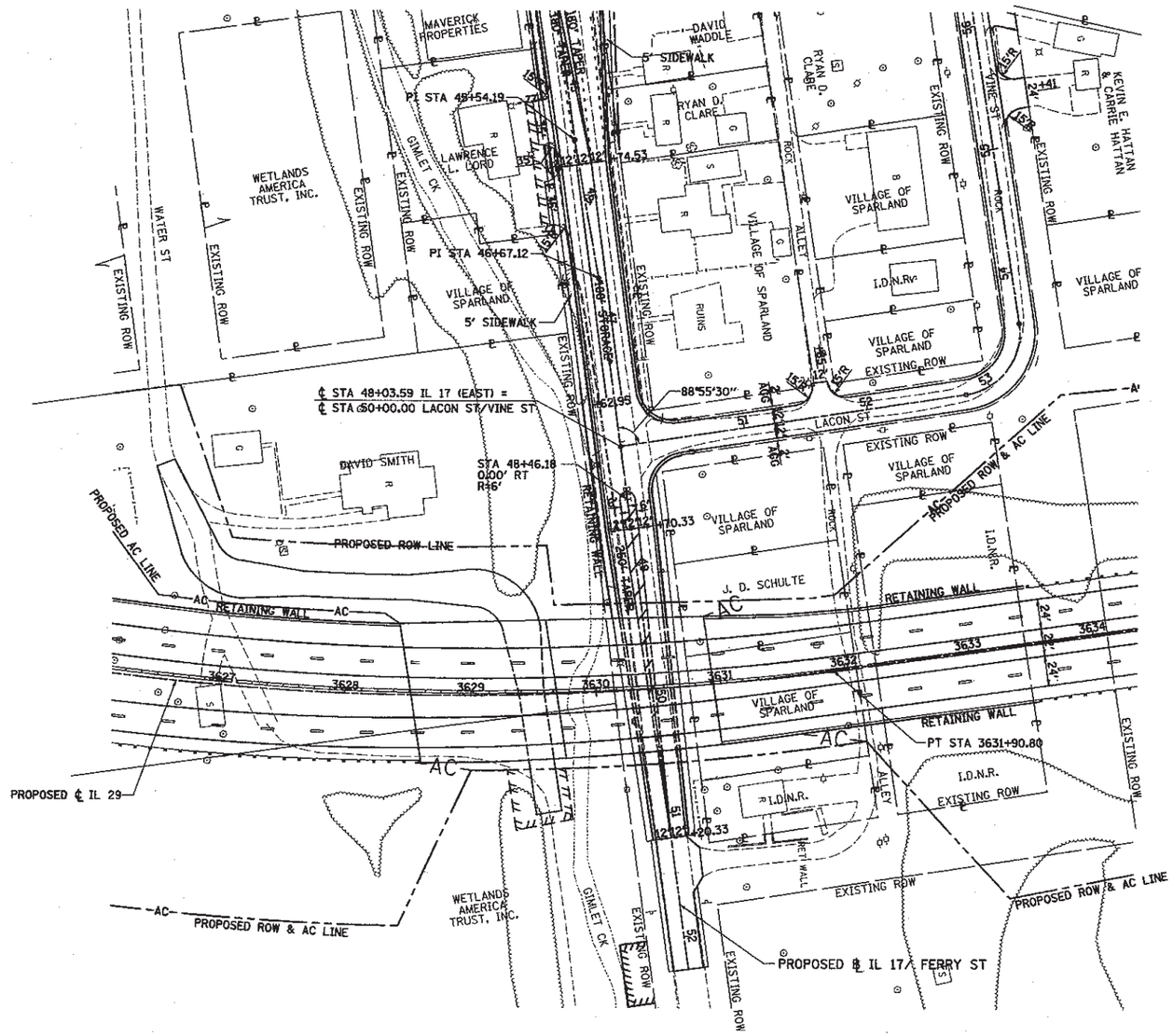
SATISFACTORY — DISTRICT GEOTECHNICAL ENGINEER — DATE 6/15/09
SATISFACTORY — DISTRICT STRUCTURE & TUNNEL ENGINEER — DATE 6/15/09
SATISFACTORY — DISTRICT OPERATIONS ENGINEER — DATE 6/16/09
APPROVED — REGIONAL ENGINEER — DATE 06/18/09

CADD FILE NAME: 8912cr3723.dgn

I.D.S. SHEET 13 OF 19

BDE-9909

SEE SHEET 13



INTERSECTION DESIGN STUDY

EXIST IL ROUTE 29 (RAILROAD ST.)
WITH
IL ROUTE 17 (FERRY ST.)

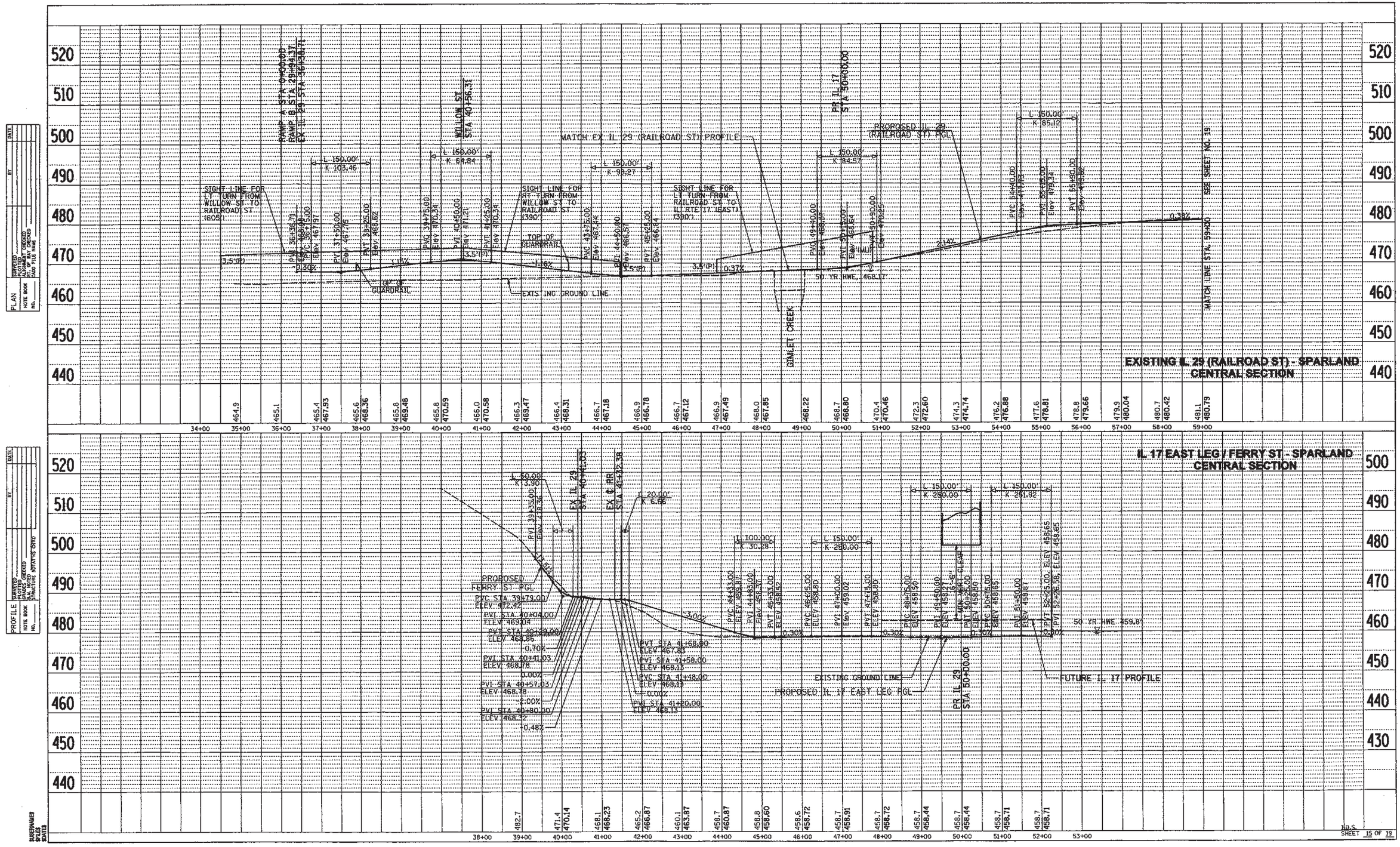
SEC. NO. P-94-009-01

SCALE 1" = 50' COUNTY MARSHALL

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 14 OF 19

BDE-9908



PLAN
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PLOTTED ALGUIRRE
GRADES CHECKED
NOTE BOOK
NO.
STR. NUMBER
PROJECT NUMBER

PROFILE
SURVEYED 01/17/03
PLOTTED
GRADES CHECKED
NOTE BOOK
NO.
STR. NUMBER
PROJECT NUMBER

SUBDRAINAGE
SPLES
SPATS

CAPACITY DESIGN STUDY

INSCRIBED DIAMETER, DI 130 FT
CENTRAL ISLAND DIAMETER, Dc 94 FT
PROGRAM USED SIDRA INTERSECTION 3.2

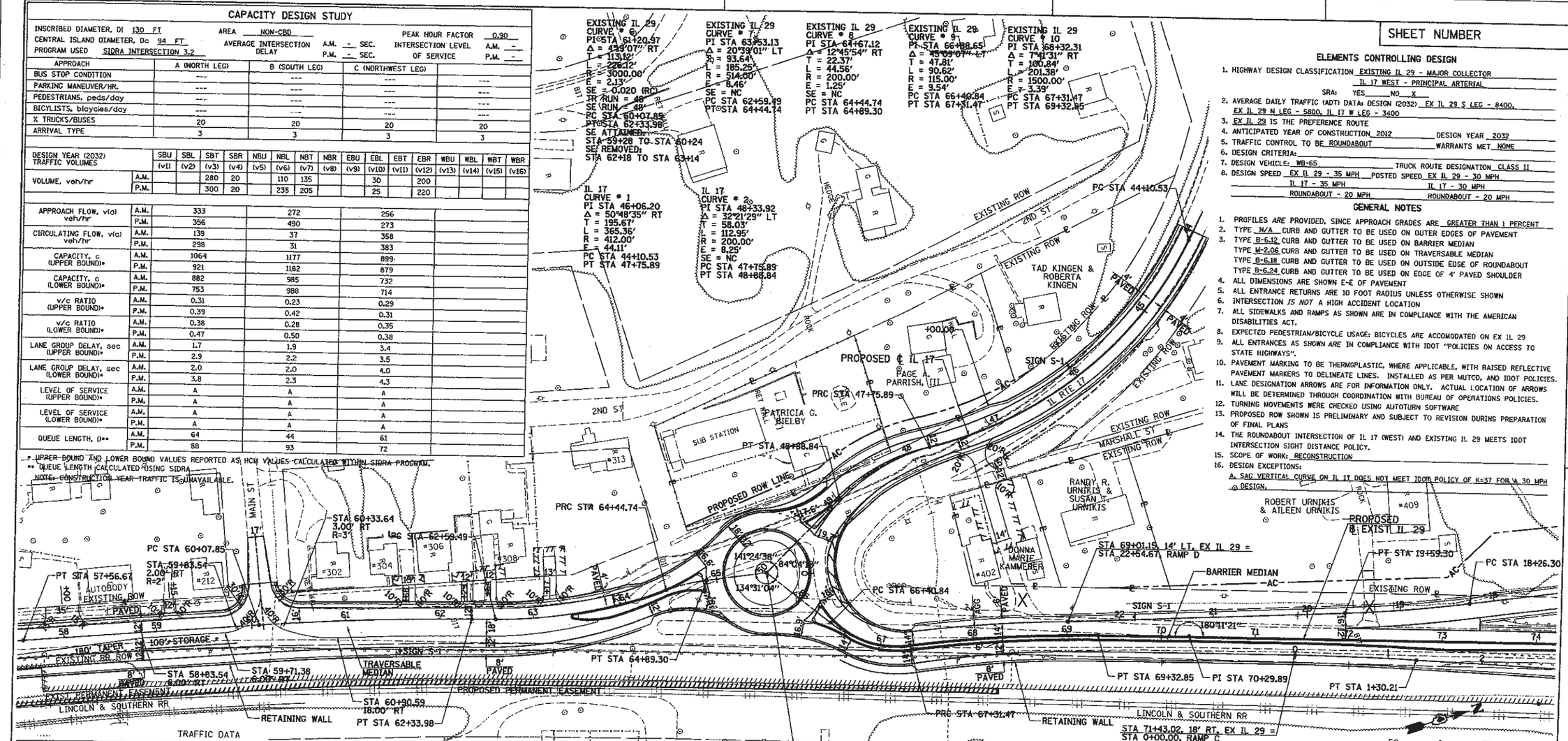
AREA NON-CBD
AVERAGE INTERSECTION DELAY A.M. - SEC. P.M. - SEC.
PEAK HOUR FACTOR 0.90
INTERSECTION LEVEL OF SERVICE A.M. - P.M. -

APPROACH	A (NORTH LEG)	B (SOUTH LEG)	C (NORTHWEST LEG)	
BUS STOP CONDITION	---	---	---	---
PARKING MANEUVER/HR.	---	---	---	---
PEDESTRIANS, peds/day	---	---	---	---
BICYLISTS, bicycles/day	---	---	---	---
% TRUCKS/BUSES	20	20	20	20
ARRIVAL TYPE	3	3	3	3

DESIGN YEAR (2032) TRAFFIC VOLUMES		SBU (v1)	SBL (v2)	SBT (v3)	SBR (v4)	NBU (v5)	NBL (v6)	NBT (v7)	NBR (v8)	EBU (v9)	EBL (v10)	EBT (v11)	EBR (v12)	WBU (v13)	WBL (v14)	WBT (v15)	WBR (v16)
VOLUME, veh/hr	A.M.			280	20		110	135			30		200				
	P.M.			300	20		235	205			25		220				

APPROACH FLOW, v(a) veh/hr	A.M.	333	272	256	
	P.M.	356	490	273	
CIRCULATING FLOW, v(c) veh/hr	A.M.	139	37	358	
	P.M.	298	31	383	
CAPACITY, c (UPPER BOUND)*	A.M.	1064	1177	899	
	P.M.	921	1182	879	
CAPACITY, c (LOWER BOUND)*	A.M.	882	985	732	
	P.M.	753	988	714	
v/c RATIO (UPPER BOUND)*	A.M.	0.31	0.23	0.29	
	P.M.	0.39	0.42	0.31	
v/c RATIO (LOWER BOUND)*	A.M.	0.38	0.28	0.35	
	P.M.	0.47	0.50	0.38	
LANE GROUP DELAY, sec (UPPER BOUND)*	A.M.	1.7	1.9	3.4	
	P.M.	2.9	2.2	3.5	
LANE GROUP DELAY, sec (LOWER BOUND)*	A.M.	2.0	2.0	4.0	
	P.M.	3.8	2.3	4.3	
LEVEL OF SERVICE (UPPER BOUND)*	A.M.	A	A	A	
	P.M.	A	A	A	
LEVEL OF SERVICE (LOWER BOUND)*	A.M.	A	A	A	
	P.M.	A	A	A	
QUEUE LENGTH, Q**	A.M.	64	44	61	
	P.M.	88	93	72	

* UPPER BOUND AND LOWER BOUND VALUES REPORTED AS HCM VALUES CALCULATED WITHIN SIDRA PROGRAM.
** QUEUE LENGTH CALCULATED USING SIDRA
NOTE: CONSTRUCTION YEAR TRAFFIC IS UNAVAILABLE.



TRAFFIC DATA

MOVEMENT	YEAR 2001 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB	-	-						-	-
AD	14	10	20/20				40/100	20	20
AC	151	144	20/20				85/108	280	300
BA	-	-						-	-
BC	-	-						-	-
BD	-	-						-	-
CD	78	82	20/20				40/185	110	235
CA	108	143	20/20				25/45	135	205
CB	-	-						-	-
DC	85	75	20/20				135/193	200	220
DB	-	-						-	-
DA	16	10	20/20				85/150	30	25
TOTAL A	289	307	20/20				61/79	465	550
TOTAL B	-	-						-	-
TOTAL C	422	444	20/20				72/116	725	960
TOTAL D	193	177	20/20				87/182	360	500

SHEET NUMBER

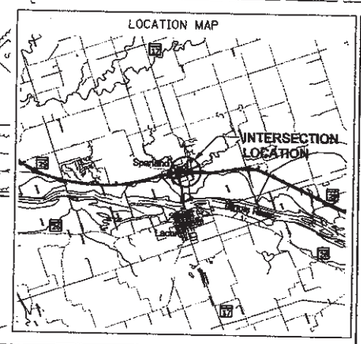
ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION EXISTING IL 29 - MAJOR COLLECTOR
   IL 17 WEST - PRINCIPAL ARTERIAL
   SRA: YES ____ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN (2032) EX IL 29 S LEG - 8400, EX IL 29 N LEG - 5800, IL 17 W LEG - 3400
3. EX IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE ROUNDABOUT WARRANTS MET NONE
6. DESIGN CRITERIA: ____
7. DESIGN VEHICLE: WB-65 TRUCK ROUTE DESIGNATION CLASS II
8. DESIGN SPEED EX IL 29 - 35 MPH POSTED SPEED EX IL 29 - 30 MPH
   IL 17 - 35 MPH IL 17 - 30 MPH
   ROUNDABOUT - 20 MPH ROUNDABOUT - 20 MPH

GENERAL NOTES

1. PROFILES ARE PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1 PERCENT
2. TYPE N/A CURB AND GUTTER TO BE USED ON OUTER EDGES OF PAVEMENT
3. TYPE B-6.12 CURB AND GUTTER TO BE USED ON BARRIER MEDIAN
   TYPE M-2.06 CURB AND GUTTER TO BE USED ON TRAVERSABLE MEDIAN
   TYPE B-6.18 CURB AND GUTTER TO BE USED ON OUTSIDE EDGE OF ROUNDABOUT
   TYPE B-6.24 CURB AND GUTTER TO BE USED ON EDGE OF 4' PAVED SHOULDER
4. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT
5. ALL ENTRANCE RETURNS ARE 10 FOOT RADIUS UNLESS OTHERWISE SHOWN
6. INTERSECTION IS NOT A HIGH ACCIDENT LOCATION
7. ALL SIDEWALKS AND RAMPS AS SHOWN ARE IN COMPLIANCE WITH THE AMERICAN DISABILITIES ACT.
8. EXPECTED PEDESTRIAN/BICYCLE USAGE: BICYCLES ARE ACCOMODATED ON EX IL 29
9. ALL ENTRANCES AS SHOWN ARE IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
10. PAVEMENT MARKING TO BE THERMOPLASTIC, WHERE APPLICABLE, WITH RAISED REFLECTIVE PAVEMENT MARKERS TO DELINEATE LINES. INSTALLED AS PER MUTCD, AND IDOT POLICIES.
11. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATION OF ARROWS WILL BE DETERMINED THROUGH COORDINATION WITH BUREAU OF OPERATIONS POLICIES.
12. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE
13. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS
14. THE ROUNDABOUT INTERSECTION OF IL 17 (WEST) AND EXISTING IL 29 MEETS IDOT INTERSECTION SIGHT DISTANCE POLICY.
15. SCOPE OF WORK: RECONSTRUCTION
16. DESIGN EXCEPTIONS:
    A. SAG VERTICAL CURVE ON IL 17 DOES NOT MEET IDOT POLICY OF K=37 FOR VA 30 MPH DESIGN.

LOCATION MAP



INTERSECTION DESIGN STUDY

EXIST IL ROUTE 29 (RAILROAD ST)
IL ROUTE 17 WITH ( )
SEC. NO. P-94-009-01 PROJ. NO. ____
SCALE 1" = 50' COUNTY MARSHALL
SJN : ____ REV. NO. ____
DESIGNED BY TIMOTHY C. QUIGG, HUTCHISON ENG, INC DATE 4/09
SATISFACTORY ____ DISTRICT GEOMETRICS ENGINEER DATE
SATISFACTORY ____ DISTRICT STUDIES & PLANS ENGINEER DATE
SATISFACTORY ____ DISTRICT OPERATIONS ENGINEER DATE 5/28/09
APPROVED ____ REGIONAL ENGINEER DATE

CADD FILE NAME : #FILEABBREV4 I.D.S. SHEET 16 OF 19

BDE-9906

DGN-SPEC
DATE-TIME
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*REF-

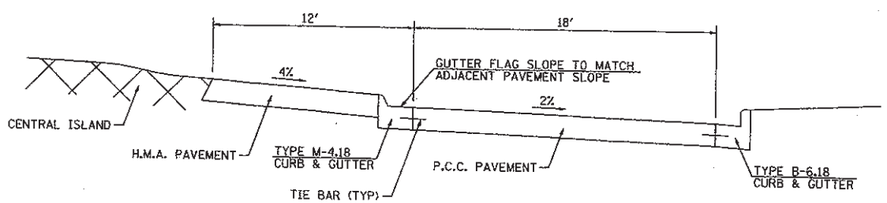
SUBERNAMES
USERS
SATES

4/27/2009 2:22:09 PM
T:\DESIGN\MARSHALL\

SHEET NUMBER

2ND ST
SUB STATION
PATRICIA G. BIELBY
PROPOSED ℄ IL 17
STA 47+83.56 12.24' RT
STA 48+89.17 16.75' RT
MARSHALL ST
RETAINING WALL
STA 49+52.86 44.76' RT
STA 65+12.91 50.29' LT
+10.38
PROPOSED ROW LINE
STA 47+44.44 12.00' LT
EXISTING ROW
STA 48+26.84 18.75' LT
RANDY R. URNIKIS & SUSAN T. URNIKIS
DONNA MARIE KAMMERER
STA 49+03.83 0.17' LT R=3'
STA 49+02.90 23.47' LT
STA 49+24.86 6.29' LT
PT STA 64+89.30
PRC STA 64+44.74
STA 64+16.76 0.00' LT
STA 63+87.86 12.00' LT
STA 62+59.49 12.00' LT
PC STA 62+59.49
EXISTING ROW
TY B-6.24 C&G
TY B-6.18 C&G
141°24'38"
84°04'18"
134°31'04"
PC STA 66+40.84
PROPOSED ℄ EXIST IL 29
STA 67+02.63 0.00' LT
STA 67+35.46 14.00' LT
EXISTING RR ROW
RETAINING WALL
STA 63+43.26 3.00' RT R=3'
STA 63+88.52 11.50' RT
STA 64+23.43 20.66' RT
STA 64+40.85 6.39' RT
STA 65+11.14 48.80' RT
STA 65+95.73 49.91' RT
℄ STA 65+54.09 EXIST IL 29 = ℄ STA 50+00.00 IL 17
STA 66+64.58 4.30' RT
+67.20
STA 66+67.74 18.60' RT
STA 67+02.63 20.00' RT
STA 67+02.63 6.00' RT
PRC STA 67+31.47
STA 67+31.47 20.00' RT
BARRIER MEDIAN
STA 68+31.61 18.00' RT
PT STA 62+33.98
TRAVERSABLE MEDIAN
EXISTING EASEMENT
PROPOSED PERMANENT EASEMENT
LINCOLN & SOUTHERN RR

Ⓐ STA 64+90.76 14.64' LT
Ⓑ STA 64+82.34 5.93' LT R=3'
Ⓒ STA 64+86.72 10.01' RT R=1'
Ⓓ STA 64+90.46 13.27' RT
Ⓔ STA 66+17.21 15.52' RT
Ⓕ STA 66+25.86 7.51' RT R=3'
Ⓖ STA 66+21.96 7.15' LT R=1'
Ⓗ STA 66+18.19 10.80' LT
Ⓘ STA 49+35.55 8.46' LT
Ⓙ STA 49+28.43 1.23' LT R=3'
Ⓚ STA 49+32.18 6.85' RT R=1'
Ⓛ STA 49+35.86 10.54' RT



SECTION A-A

20 0 20
GRAPHIC SCALE

INTERSECTION DESIGN STUDY

EXIST IL ROUTE 29 (RAILROAD ST)
IL ROUTE 17 WITH

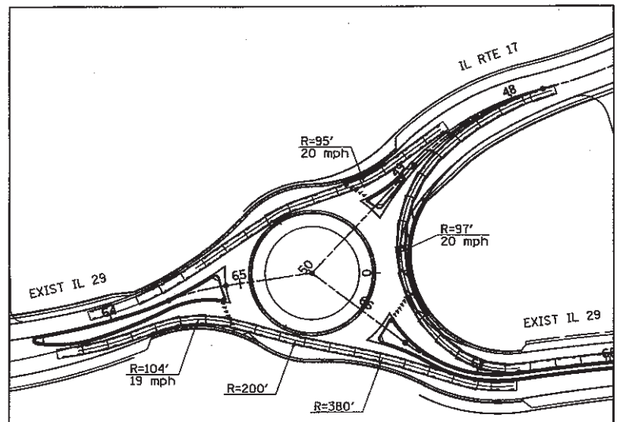
SEC. NO. P-94-009-01

SCALE 1" = 20' COUNTY MARSHALL

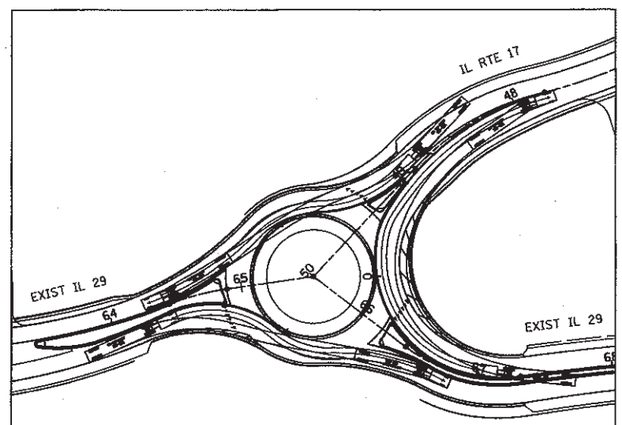
SJN : PROJ. NO.

I.D.S. SHEET 17 OF 19

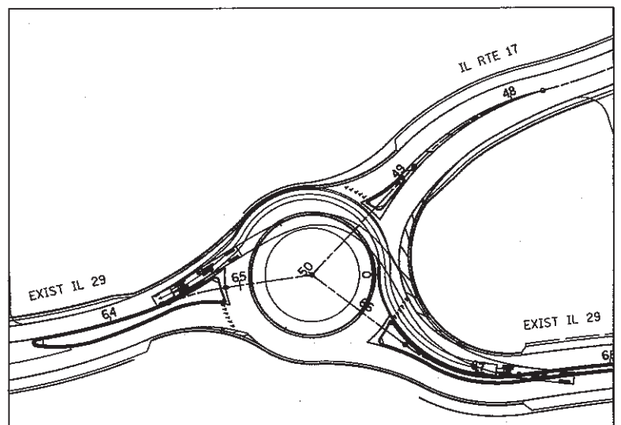
BDE-9908



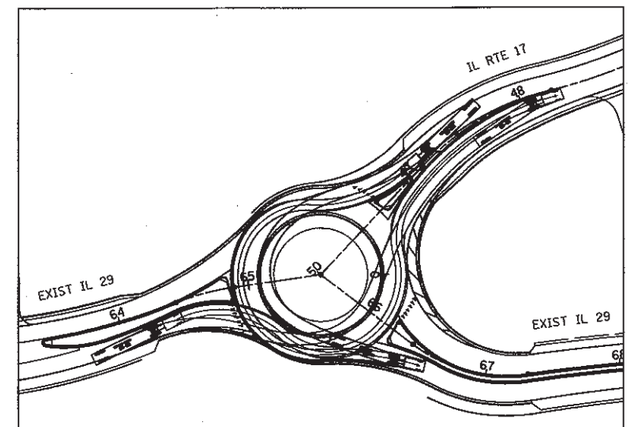
P-CAR
TURNING VEHICLE
ANALYSIS



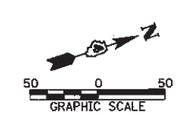
WB-65 W/ENCROACHMENT
TURNING VEHICLE
ANALYSIS



WB-65 W/ENCROACHMENT
TURNING VEHICLE
ANALYSIS



WB-65 W/ENCROACHMENT
TURNING VEHICLE
ANALYSIS



INTERSECTION DESIGN STUDY

EXIST IL ROUTE 29 (RAILROAD ST)
IL ROUTE 17 WITH

SEC. NO. P-94-009-01

SCALE 1" = 50' COUNTY MARSHALL

SJN : PROJ. NO.

I.D.S. SHEET 18 OF 19

BDE-9908

DGN-SPEC
DATE-TIME
*REF-
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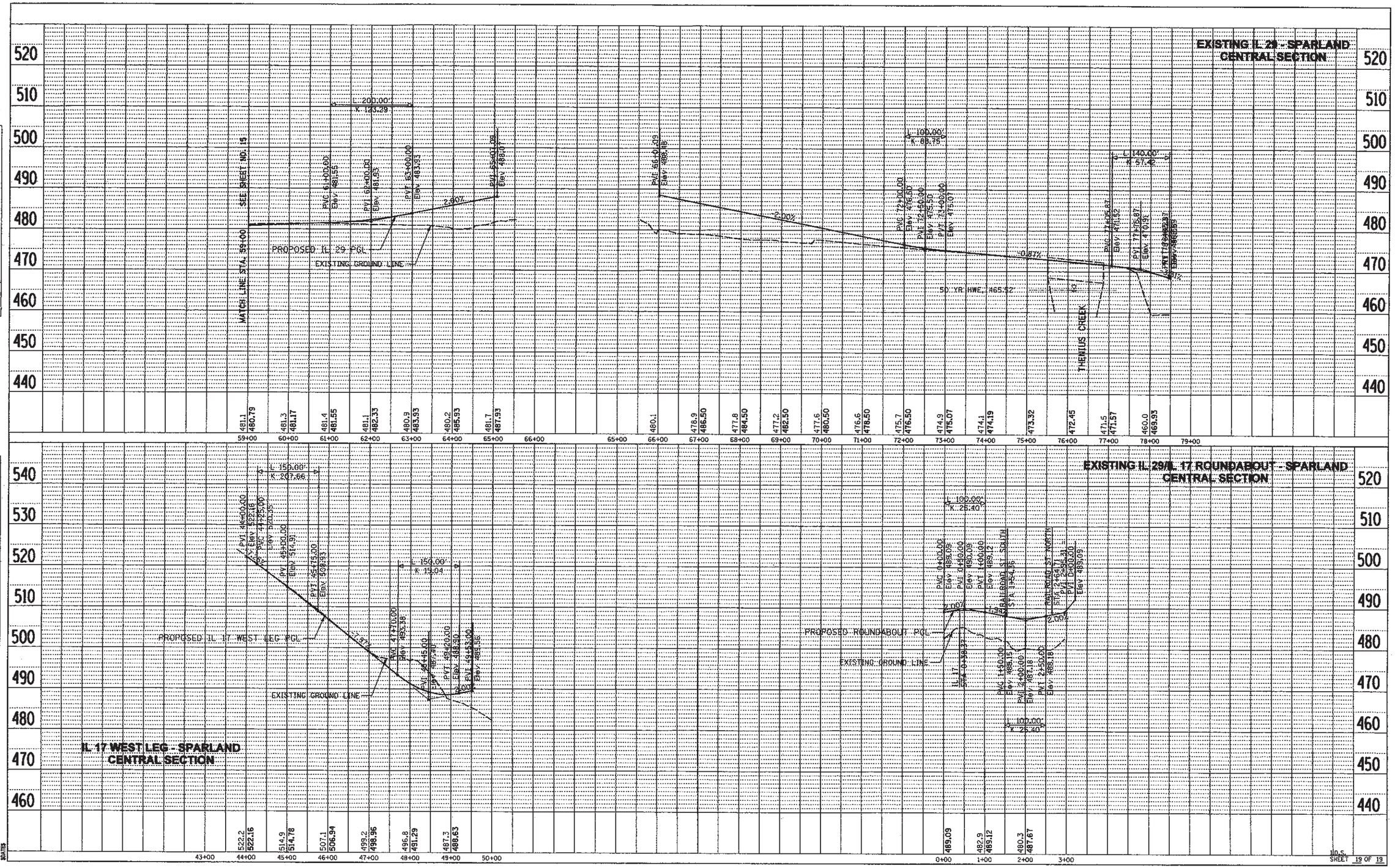
EXISTING IL 29 - SPARLAND
CENTRAL SECTION
MATCH LINE STA. 59+00 SEE SHEET NO. 15
PROPOSED IL 29 PGL
EXISTING GROUND LINE
50 YR HWE 465.52
THEMIUS CREEK
EXISTING IL 29/IL 17 ROUNDABOUT - SPARLAND
CENTRAL SECTION
PROPOSED ROUNDABOUT PGL
EXISTING GROUND LINE
IL 17 WEST LEG - SPARLAND
CENTRAL SECTION
PROPOSED IL 17 WEST LEG PGL
EXISTING GROUND LINE
PLAN
PROFILE
SURVEYED
PLOTTED
ALIGNMENT CHECKED
DGN FILE NAME
CADD FILE NAME
NOTE BOOK
NO.
STRUCTURE DATA/HES DATA
BY
DATE
SURFNAMES
SFILES
SDATES
SHEET 19 OF 19

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERSECTION DESIGN STUDY
IL 29 /1100E CONNECTOR INTERSECTION

PREPARED BY : CH2MHILL

AUGUST 2007

Illinois Department of Transportation

CH2MHILL

June 2010
Catalog No. 032469-00P

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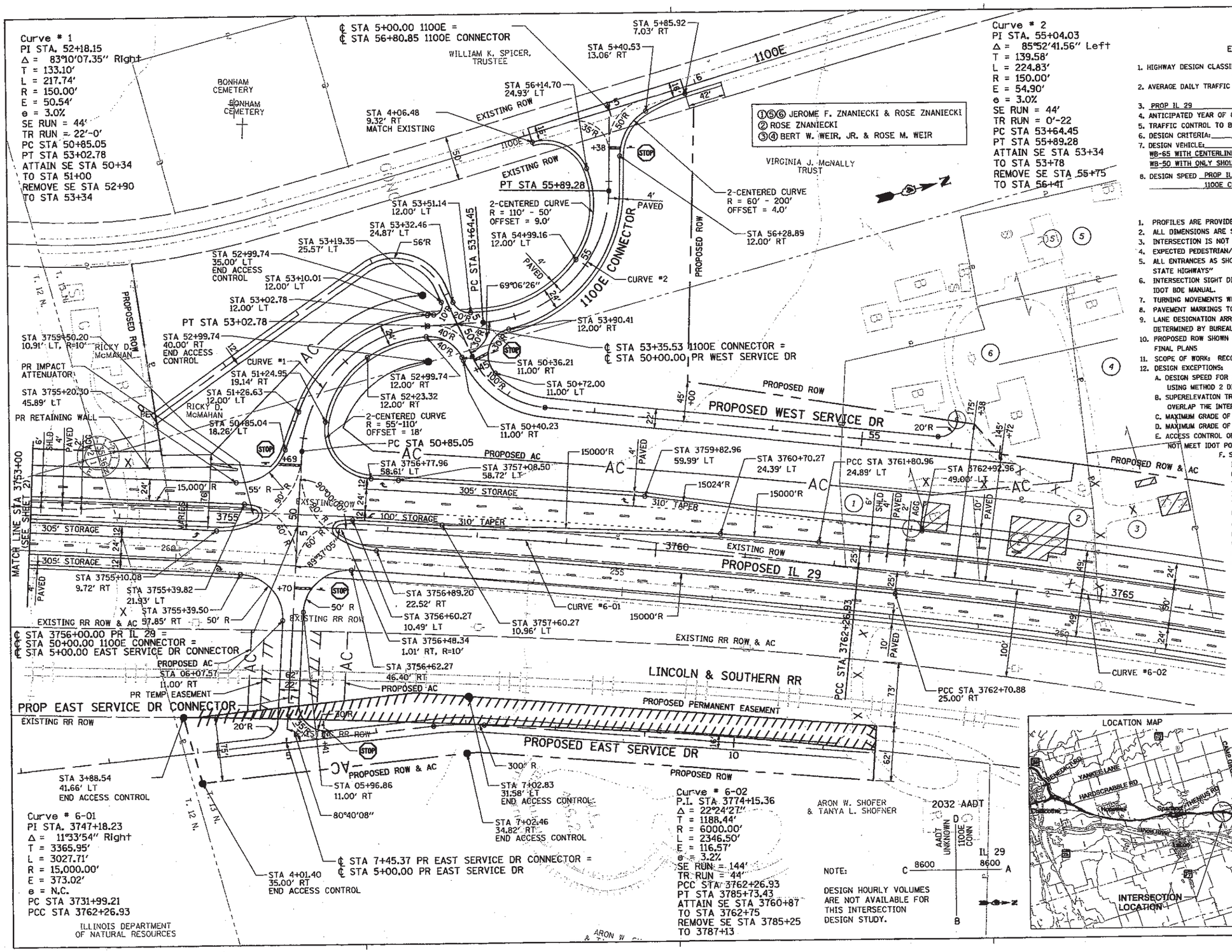
17-MAR-2009

SHEET NUMBER

Curve # 1
PI STA. 52+18.15
Δ = 83°10'07.35" Right
T = 133.10'
L = 217.74'
R = 150.00'
E = 50.54'
e = 3.0%
SE RUN = 44'
TR RUN = 22'-0'
PC STA 50+85.05
PT STA 53+02.78
ATTAIN SE STA 50+34
TO STA 51+00
REMOVE SE STA 52+90
TO STA 53+34

Curve # 2
PI STA. 55+04.03
Δ = 85°52'41.56" Left
T = 139.58'
L = 224.83'
R = 150.00'
E = 54.90'
e = 3.0%
SE RUN = 44'
TR RUN = 0'-22
PC STA 53+64.45
PT STA 55+89.28
ATTAIN SE STA 53+34
TO STA 53+78
REMOVE SE STA 55+75
TO STA 56+41



Curve # 6-02
P.I. STA 3774+15.36
Δ = 22°24'27"
T = 1188.44'
R = 6000.00'
L = 2346.50'
E = 116.57'
e = 3.2%
SE RUN = 144'
TR RUN = 44'
PCC STA 3762+26.93
PT STA 3785+73.43
ATTAIN SE STA 3760+87
TO STA 3762+75
REMOVE SE STA 3785+25
TO 3787+13

ARON W. SHOFER & TANYA L. SHOFNER

2032 AADT
AADT UNKNOWN
1100E CONN
IL 29
8600
8600

NOTE:
DESIGN HOURLY VOLUMES ARE NOT AVAILABLE FOR THIS INTERSECTION DESIGN STUDY.

Curve # 6-01
PI STA. 3747+18.23
Δ = 11°33'54" Right
T = 3365.95'
L = 3027.71'
R = 15,000.00'
E = 373.02'
e = N.C.
PC STA 3731+99.21
PCC STA 3762+26.93

ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION FAP 318 (IL 29) - PRINCIPAL ARTERIAL; 1100E CONNECTOR - LOCAL ROAD
   SRA: YES ___ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN PROP IL 29 - 8600 (2032); DESIGN 1100E CONNECTOR - (UNKNOWN)
3. PROP IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE ONE-WAY STOP WARRANTS MET ___
6. DESIGN CRITERIA: ___
7. DESIGN VEHICLE: WB-65 WITH CENTERLINE ENCROACHMENT; WB-50 WITH ONLY SHOULDER ENCROACHMENT; TRUCK ROUTE DESIGNATION CLASS II
8. DESIGN SPEED PROP IL 29 - 70 MPH; 1100E CONNECTOR - 25 MPH; POSTED SPEED PR IL 29 - 65 MPH; 1100E CONNECTOR - 20 MPH

GENERAL NOTES

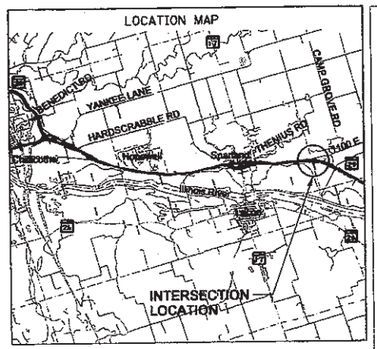
1. PROFILES ARE PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT
3. INTERSECTION IS NOT A HIGH ACCIDENT LOCATION
4. EXPECTED PEDESTRIAN/BICYCLE USAGE NONE
5. ALL ENTRANCES AS SHOWN ARE IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS"
6. INTERSECTION SIGHT DISTANCE COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE IDOT BDE MANUAL.
7. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE.
8. PAVEMENT MARKINGS TO BE INSTALLED PER THE MUTCD, AND IDOT POLICIES.
9. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY BUREAU OF OPERATIONS POLICIES.
10. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS
11. SCOPE OF WORK: RECONSTRUCTION
12. DESIGN EXCEPTIONS:
    A. DESIGN SPEED FOR 1100E CONNECTOR IS 25 MPH WITH 3.0% MAXIMUM SUPERELEVATION USING METHOD 2 DISTRIBUTION OF SUPERELEVATION.
    B. SUPERELEVATION TRANSITIONS AT THE NORTH AND SOUTH ENDS OF 1100E CONNECTOR OVERLAP THE INTERSECTION CURVE RETURNS. MAXIMUM SUPERELEVATION IS ONLY 3.0%.
    C. MAXIMUM GRADE OF 1100E CONNECTOR IS 9.0%.
    D. MAXIMUM GRADE OF EAST SERVICE DR CONNECTOR IS 10%.
    E. ACCESS CONTROL OFFSET FROM IL 29 TO PROP WEST SERVICE DRIVE OF 185' DOES NOT MEET IDOT POLICY OF 300'.
    F. SB LEFT TURN LANE HAS 100' STORAGE LENGTH, WHICH DOES NOT MEET IDOT POLICY OF 305'. PROPOSED DESIGN WAS PROVIDED DUE TO VERY LOW TURNING VOLUMES AND BECAUSE PREDOMINANT USERS OF THE TURN LANES WILL BE FAMILIAR WITH THE AREA. THE TURN LANE IMPROVES SAFETY BY REDUCING CONFLICTS WITH HIGH-SPEED THRU TRAFFIC. DESIGN WAS APPROVED AT THE DECEMBER 20, 2006 BI-MONTHLY MEETING.

(DESIGN EXCEPTIONS A, B AND C ARE NECESSITATED BY THE LARGE ELEVATION DIFFERENCE BETWEEN PROP IL 29 AND 1100E, AND THE RESULTING NEED TO MAXIMIZE THE LENGTH OF 1100E CONNECTOR. DESIGN EXCEPTION D IS NECESSITATED BY THE LARGE ELEVATION DIFFERENCE BETWEEN PR IL 29 AND THE RAILROAD.)

P-12

GRAPHIC SCALE 50 0 50

LOCATION MAP



INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29) WITH ROUTE (1100E CONNECTOR)
SEC. NO. ___ PROJ. NO. HPD-0133(012)
SCALE 1" = 50' COUNTY MARSHALL
SJN : P-94-009-01 REV. NO. 1
DESIGNED BY J. MOLLER DATE 8/07
SATISFACTORY — DISTRICT GEOMETRIC ENGINEER — DATE
SATISFACTORY — DISTRICT PROGRAM DEVELOPMENT ENGINEER — DATE
SATISFACTORY — DISTRICT OPERATIONS ENGINEER — DATE
APPROVED — DISTRICT ENGINEER — DATE

CADD FILE NAME : ...38H12or3807.dgn I.D.S. SHEET 1 OF 3

«DGN-SPEC» «DATE-TIME» «SPEC» «REF» «REF»

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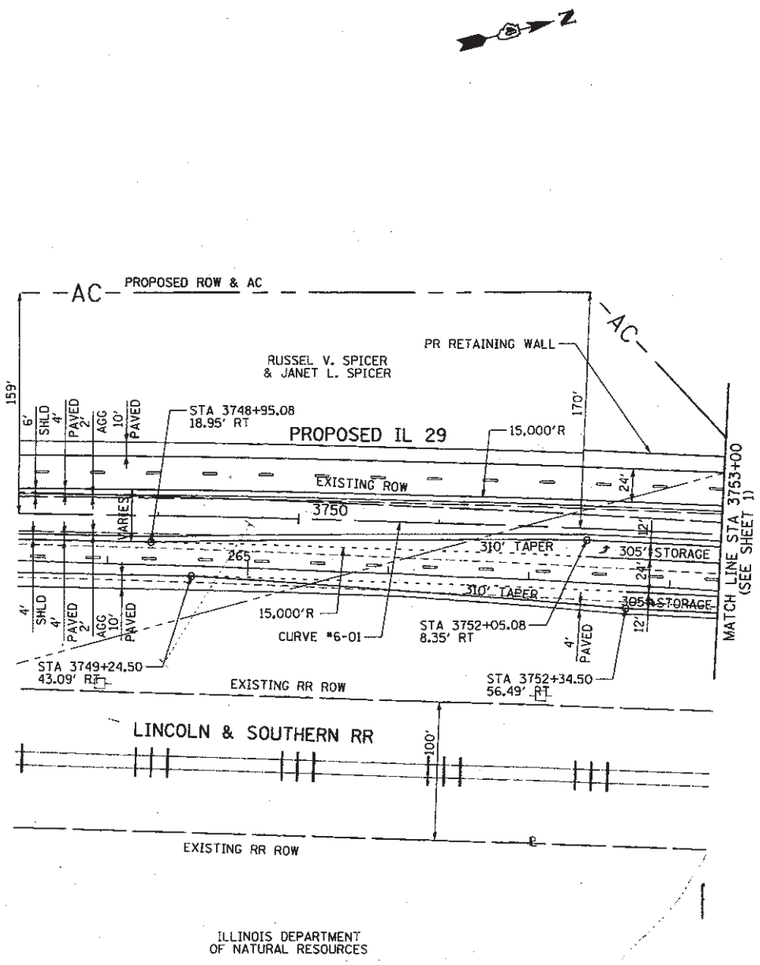
11-MAR-2009



Curve # 6-01
PI STA. 3747+18.23
Δ = 11°33'54" Right
T = 3365.95'
L = 3027.71'
R = 15,000.00'
E = 373.02'
e = N.C.
PC STA 3731+99.21
PCC STA 3762+26.93

50 0 50
GRAPHIC SCALE 12.5-24

INTERSECTION DESIGN STUDY

FA ROUTE 318 (IL 29)
ROUTE ____ WITH (1100E CONNECTOR)

SEC. NO. ____

SCALE 1"=50' COUNTY MARSHALL

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 2 OF 3

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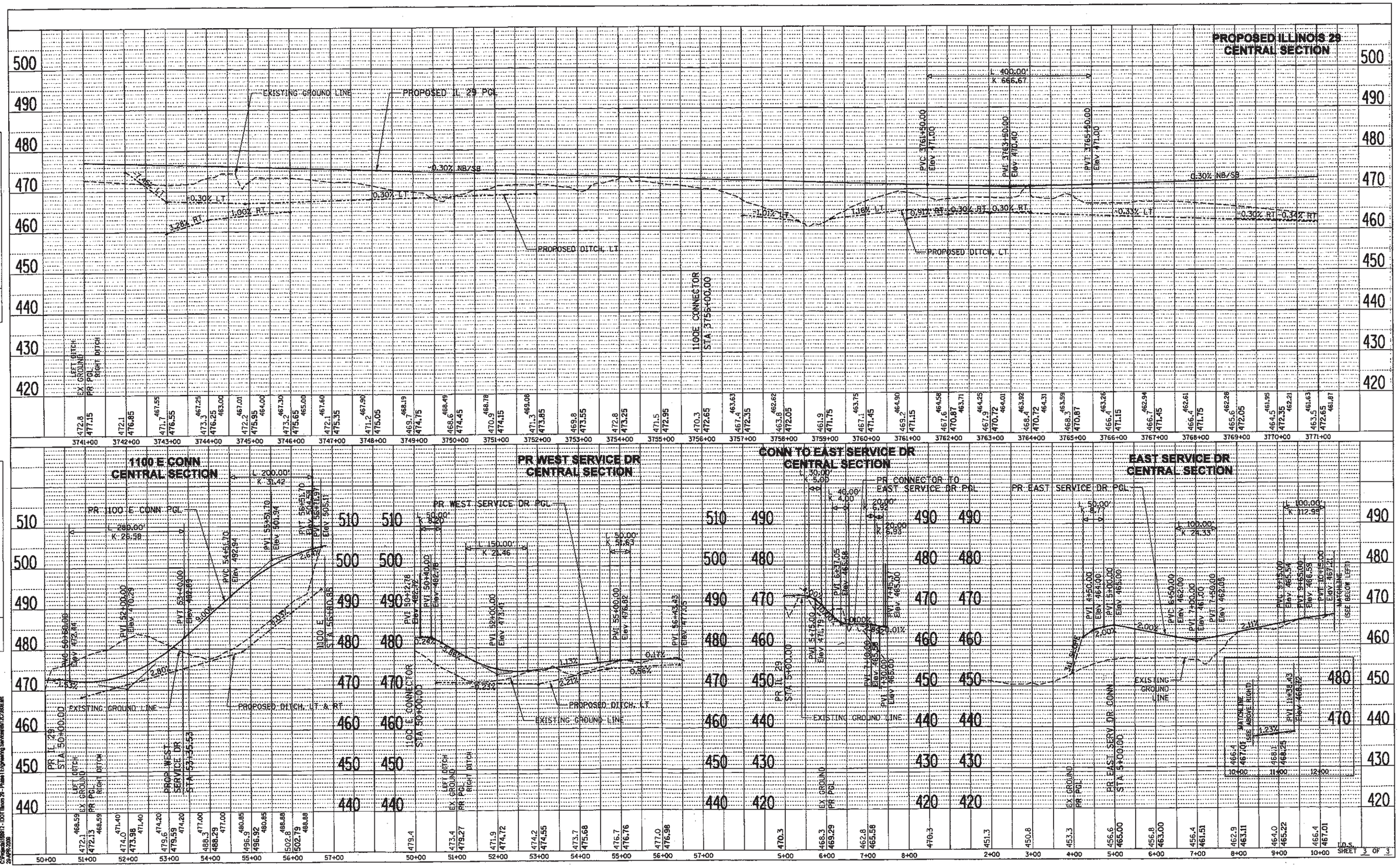
02-AUG-2007



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ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADE NOTED
STRUCTURE NOTAT'NS CHKD
NOTE BOOK
NO.
BY
DATE

Lightning
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29-APR-2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERSECTION DESIGN STUDY
IL 29 /CAMP GROVE ROAD (CH 8) INTERSECTION

PREPARED BY : CH2MHILL

JUNE 2007

June 2010
Catalog No. 032469-00P

Illinois Department of Transportation
CH2MHILL

mfdx
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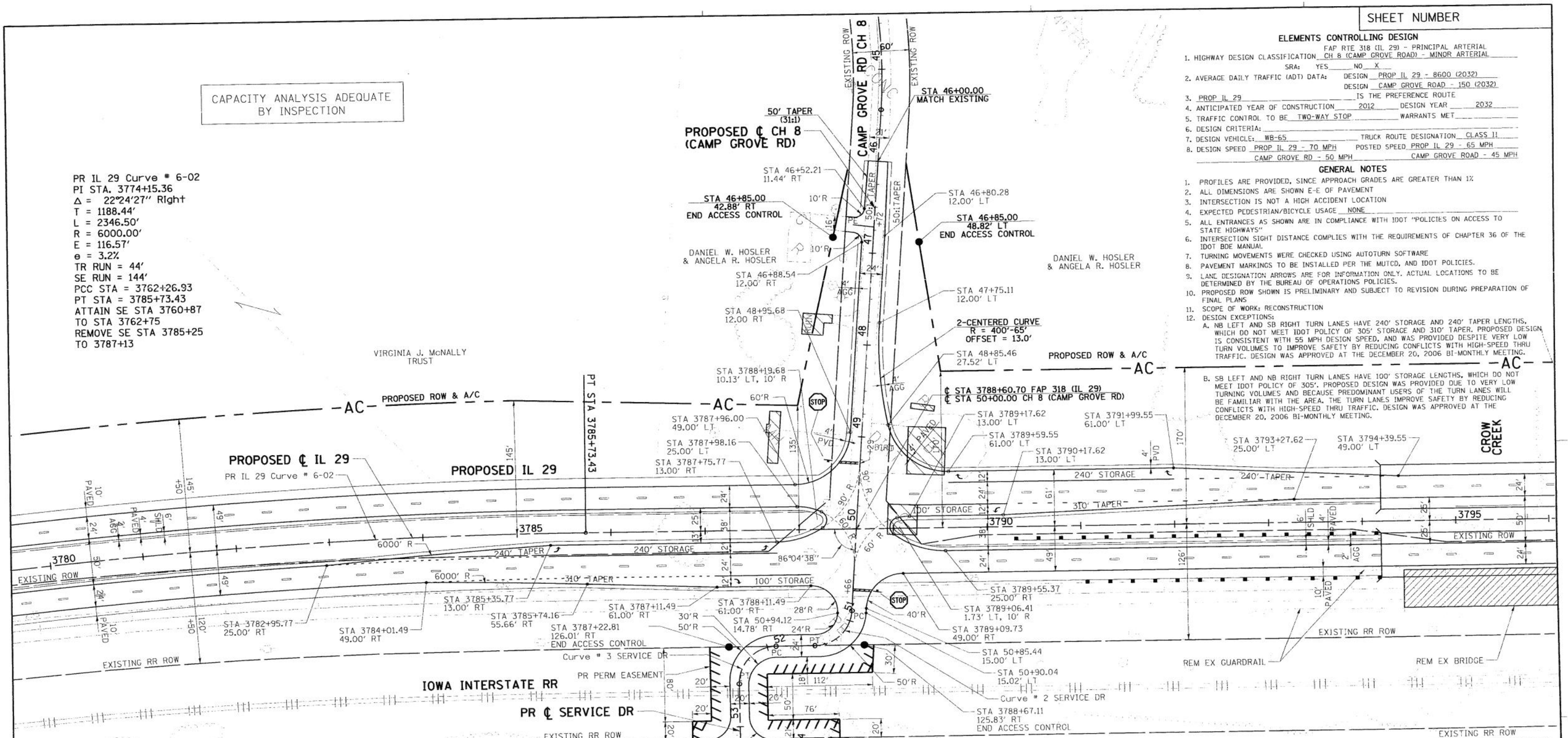
17-MAR-2009

SHEET NUMBER

CAPACITY ANALYSIS ADEQUATE BY INSPECTION

PR IL 29 Curve # 6-02
PI STA. 3774+15.36
Δ = 22°24'27" Right
T = 1188.44'
L = 2346.50'
R = 6000.00'
E = 116.57'
e = 3.2%
TR RUN = 44'
SE RUN = 144'
PCC STA = 3762+26.93
PT STA = 3785+73.43
ATTAIN SE STA 3760+87
TO STA 3762+75
REMOVE SE STA 3785+25
TO 3787+13



Curve # 2 SERVICE DR
PI STA. 50+94.66
Δ = 66°40'34.72" Right
T = 32.89'
L = 58.19'
R = 50.00'
E = 9.85'
PC STA = 50+61.77
PT STA = 51+19.96
SE = NC

Curve # 3 SERVICE DR
PI STA. 52+15.72
Δ = 70°57'24.75" Left
T = 28.51'
L = 49.54'
R = 40.00'
E = 9.12'
PC STA = 51+87.21
PC STA = 52+36.74
SE = NC

TRAFFIC DATA

MOVEMENT	YEAR 2001 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR 2012 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB	0	0	0(0)	0(0)	0	0	0(0)	0	0
AD	1	6	10(10)	100(0)	2	6	300(-17)	4	5
AC	139	149	19(19)	82(62)	253	241	231(174)	460	408
BA	0	0	0(0)	0(0)	0	0	0(0)	0	0
BC	0	0	0(0)	0(0)	0	0	0(0)	0	0
BD	0	0	0(0)	0(0)	0	0	0(0)	0	0
CD	1	2	10(10)	100(100)	2	4	200(250)	3	7
CA	116	158	19(19)	59(103)	184	320	165(288)	307	613
CB	0	0	0(0)	0(0)	0	0	0(0)	0	0
DC	1	4	10(10)	100(0)	2	4	300(25)	4	5
DB	0	0	0(0)	0(0)	0	0	0(0)	0	0
DA	2	3	10(10)	50(33)	3	4	100(67)	4	5
TOTAL A	258	316	19(19)	71(81)	442	571	200(226)	775	1031
TOTAL B	0	0	0(0)	0(0)	0	0	0(0)	0	0
TOTAL C	257	313	19(19)	72(82)	441	569	201(230)	774	1033
TOTAL D	5	15	10(10)	80(20)	9	18	200(47)	15	22

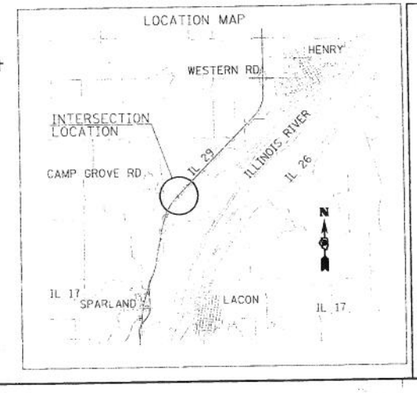
ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION FAP RTE 318 (IL 29) - PRINCIPAL ARTERIAL
   CH 8 (CAMP GROVE ROAD) - MINOR ARTERIAL
   SRA: YES ____ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN PROP IL 29 - 8600 (2032)
   DESIGN CAMP GROVE ROAD - 150 (2032)
3. PROP IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE TWO-WAY STOP WARRANTS MET
6. DESIGN CRITERIA:
7. DESIGN VEHICLE: WB-65 TRUCK ROUTE DESIGNATION CLASS II
8. DESIGN SPEED PROP IL 29 - 70 MPH POSTED SPEED PROP IL 29 - 65 MPH
   CAMP GROVE RD - 50 MPH CAMP GROVE ROAD - 45 MPH

GENERAL NOTES

1. PROFILES ARE PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT
3. INTERSECTION IS NOT A HIGH ACCIDENT LOCATION
4. EXPECTED PEDESTRIAN/BICYCLE USAGE NONE
5. ALL ENTRANCES AS SHOWN ARE IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS"
6. INTERSECTION SIGHT DISTANCE COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE IDOT BDE MANUAL
7. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE
8. PAVEMENT MARKINGS TO BE INSTALLED PER THE MUTCD, AND IDOT POLICIES.
9. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY THE BUREAU OF OPERATIONS POLICIES.
10. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS
11. SCOPE OF WORK: RECONSTRUCTION
12. DESIGN EXCEPTIONS:
    A. NB LEFT AND SB RIGHT TURN LANES HAVE 240' STORAGE AND 240' TAPER LENGTHS, WHICH DO NOT MEET IDOT POLICY OF 305' STORAGE AND 310' TAPER. PROPOSED DESIGN IS CONSISTENT WITH 55 MPH DESIGN SPEED, AND WAS PROVIDED DESPITE VERY LOW TURN VOLUMES TO IMPROVE SAFETY BY REDUCING CONFLICTS WITH HIGH-SPEED THRU TRAFFIC. DESIGN WAS APPROVED AT THE DECEMBER 20, 2006 BI-MONTHLY MEETING.
    B. SB LEFT AND NB RIGHT TURN LANES HAVE 100' STORAGE LENGTHS, WHICH DO NOT MEET IDOT POLICY OF 305'. PROPOSED DESIGN WAS PROVIDED DUE TO VERY LOW TURNING VOLUMES AND BECAUSE PREDOMINANT USERS OF THE TURN LANES WILL BE FAMILIAR WITH THE AREA. THE TURN LANES IMPROVE SAFETY BY REDUCING CONFLICTS WITH HIGH-SPEED THRU TRAFFIC. DESIGN WAS APPROVED AT THE DECEMBER 20, 2006 BI-MONTHLY MEETING.

LOCATION MAP



INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29) WITH
CH ROUTE 8 (CAMP GROVE ROAD)

SEC. NO. ____ PROJ. NO. HPD-0133(012)
SCALE 1" = 50' COUNTY MARSHALL
SJN : P-94-009-01 REV. NO. ____

DESIGNED BY J. MOLLER DATE 06/07
SATISFACTORY [signature] DISTRICT GEOMETRICS ENGINEER DATE 6-27-07
SATISFACTORY [signature] DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE 6-27-07
SATISFACTORY [signature] DISTRICT OPERATIONS ENGINEER DATE 7/10/07
APPROVED [signature] DISTRICT ENGINEER DATE 7/10/07

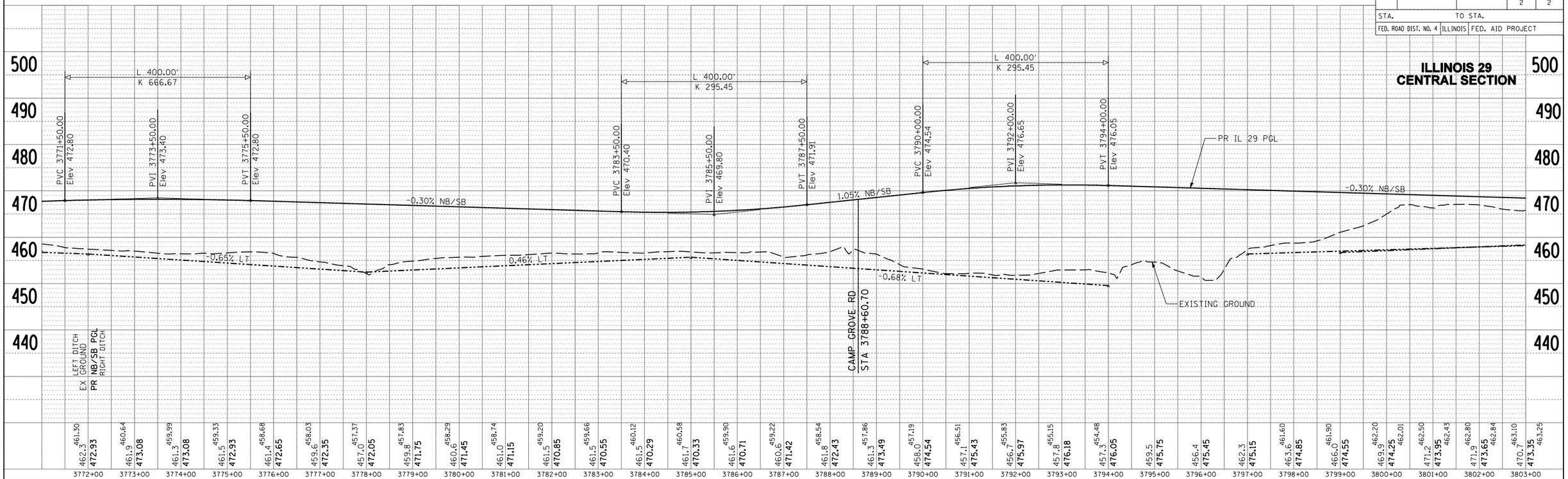
CADD FILE NAME : ...88912cr3809.dgn I.D.S. SHEET 1 OF 2

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			2	2

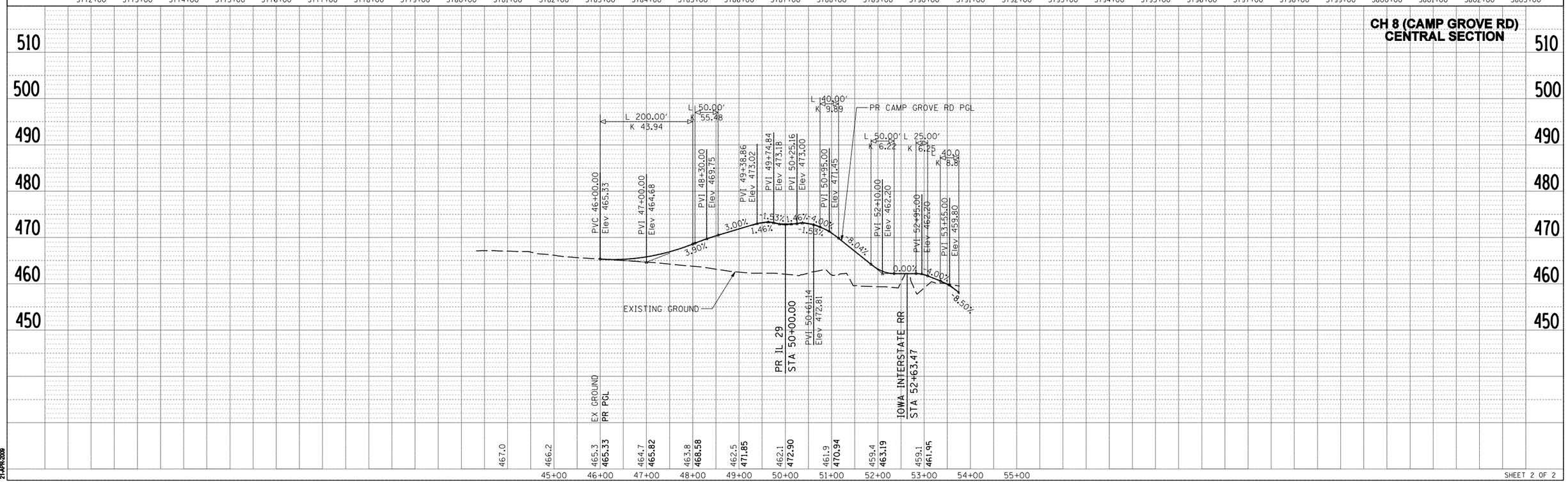
STA. TO STA.

FED. ROAD DIST. NO. 4 | ILLINOIS | FED. AID PROJECT

ILLINOIS 29 CENTRAL SECTION



CH 8 (CAMP GROVE RD) CENTRAL SECTION



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PROFILE: SURVEYED / PLOTTED / GRADES CHECKED / B.M. NOTED / STRUCTURE NOTAT'NS CH'KD — NOTE BOOK NO. — BY — DATE

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21-APR-2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERSECTION DESIGN STUDY
IL 29 /SBI 29 INTERSECTION

PREPARED BY : CH2MHILL

DECEMBER 2008

Illinois Department of Transportation
CH2MHILL

June 2010
Catalog No. 032469-00P

mfox
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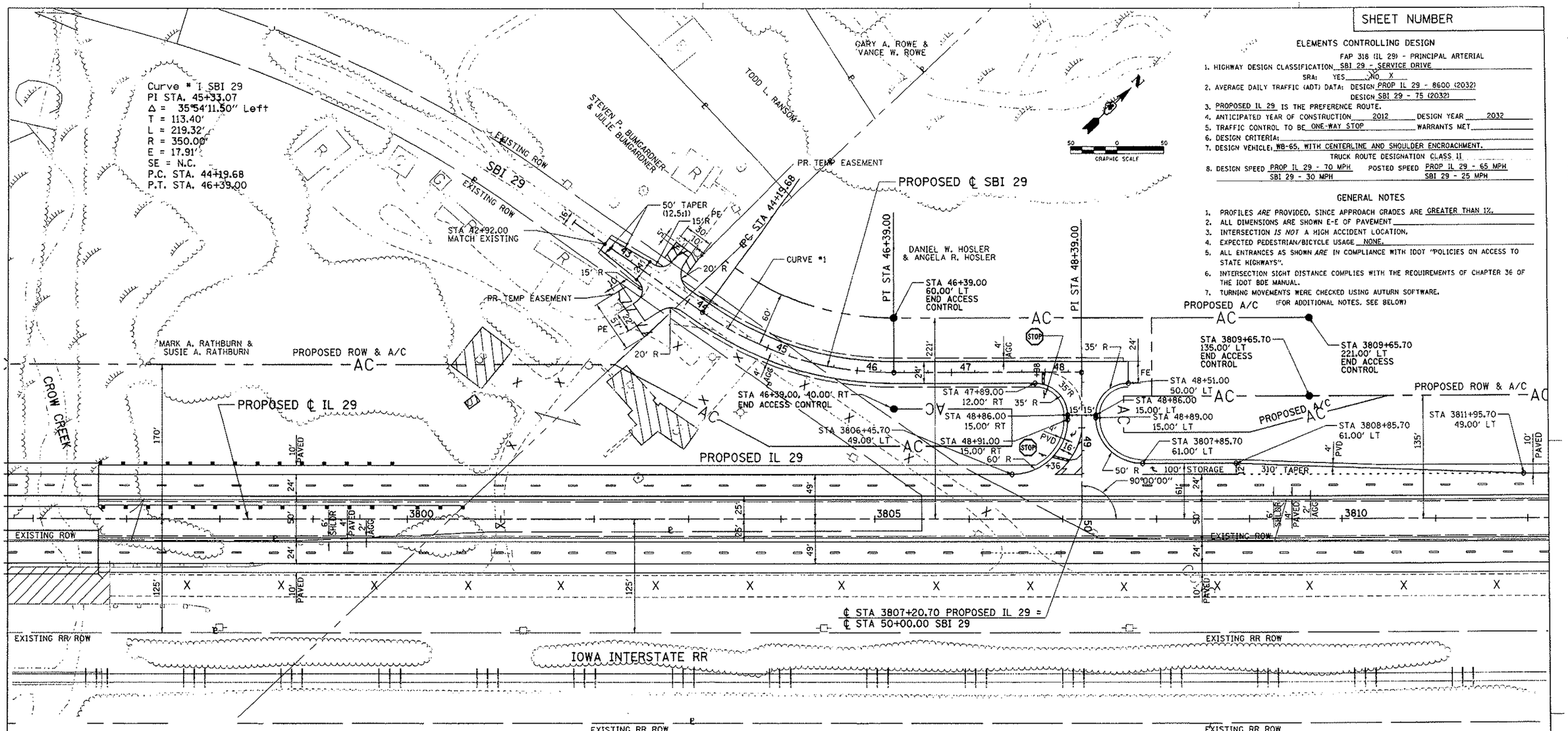
17-MAR-2009

SHEET NUMBER



ELEMENTS CONTROLLING DESIGN

FAP 318 (IL 29) - PRINCIPAL ARTERIAL

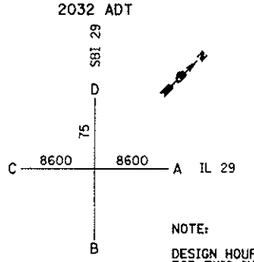
1. HIGHWAY DESIGN CLASSIFICATION SBI 29 - SERVICE DRIVE
   SRA: YES ____ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN PROP IL 29 - 8600 (2032)
   DESIGN SBI 29 - 75 (2032)
3. PROPOSED IL 29 IS THE PREFERENCE ROUTE.
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE ONE-WAY STOP WARRANTS MET ____
6. DESIGN CRITERIA: ____
7. DESIGN VEHICLE: WB-65, WITH CENTERLINE AND SHOULDER ENCROACHMENT.
   TRUCK ROUTE DESIGNATION CLASS II
8. DESIGN SPEED PROP IL 29 - 70 MPH POSTED SPEED PROP IL 29 - 65 MPH
   SBI 29 - 30 MPH SBI 29 - 25 MPH

GENERAL NOTES

1. PROFILES *ARE* PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%.
2. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT
3. INTERSECTION *IS NOT* A HIGH ACCIDENT LOCATION.
4. EXPECTED PEDESTRIAN/BICYCLE USAGE NONE.
5. ALL ENTRANCES AS SHOWN *ARE* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
6. INTERSECTION SIGHT DISTANCE COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE IDOT BDE MANUAL.
7. TURNING MOVEMENTS WERE CHECKED USING AUTURN SOFTWARE.

(FOR ADDITIONAL NOTES, SEE BELOW)

2032 ADT



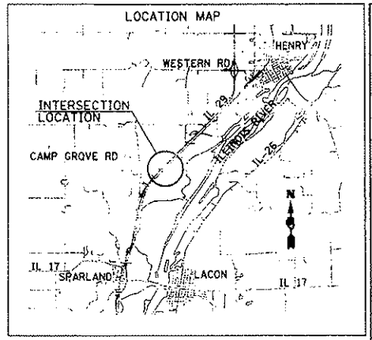
NOTE:

DESIGN HOURLY VOLUMES ARE NOT AVAILABLE FOR THIS INTERSECTION DESIGN STUDY.

DANIEL W. HOSLER
& ANGELA R. HOSLER

8. PAVEMENT MARKINGS TO BE INSTALLED PER THE MUTCD, AND IDOT POLICIES.
9. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY BUREAU OF OPERATIONS POLICIES.
10. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS.
11. SCOPE OF WORK: RECONSTRUCTION
12. DESIGN EXCEPTIONS:
    A. A MEDIAN OPENING IS NOT PROVIDED FOR THE SBI 29 SERVICE DRIVE BECAUSE PROPOSED MEDIAN OPENINGS ARE LOCATED 1850 FT. TO THE SOUTH AND 1600 FT. TO THE NORTH, WHILE IDOT POLICY CALLS FOR MINIMUM ONE-HALF MILE SPACING.
    B. SB RIGHT TURN LANE HAS 100' STORAGE LENGTH, WHICH DOES NOT MEET IDOT POLICY OF 305'. PROPOSED DESIGN WAS PROVIDED DUE TO VERY LOW TURNING VOLUMES AND BECAUSE PREDOMINANT USERS OF THE TURN LANES WILL BE FAMILIAR WITH THE AREA. ALTHOUGH TURN LANE IS NOT REQUIRED, IT WAS PROVIDED TO IMPROVE SAFETY BY REDUCING CONFLICTS WITH HIGH-SPEED THRU TRAFFIC. DESIGN WAS APPROVED AT THE DECEMBER 20, 2006 BI-MONTHLY MEETING.

LOCATION MAP



INTERSECTION DESIGN STUDY

123-29 P-12

FAP ROUTE 318 (IL 29)
SBI ROUTE 29 WITH (

SEC. NO. ____ PROJ. NO. HPD-0133(012)
SCALE 1" = 50' COUNTY MARSHALL
SJN : P-94-009-01 REV. NO. ____

DESIGNED BY B. GANNIS CHURCHILL DATE 12/08
SATISFACTORY ____ DISTRICT GEOMETRICS ENGINEER DATE 1/09/09
SATISFACTORY ____ DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE 1/12/09
SATISFACTORY ____ DISTRICT OPERATIONS ENGINEER DATE 1/14/09
APPROVED ____ DISTRICT ENGINEER DATE 01/14/09

CADD FILE NAME : $FILEABBREV$ I.D.S. SHEET 1 OF 2

•DGN-SPEC•
•DATE-TIME•
•REF-
•REF-
•REF-

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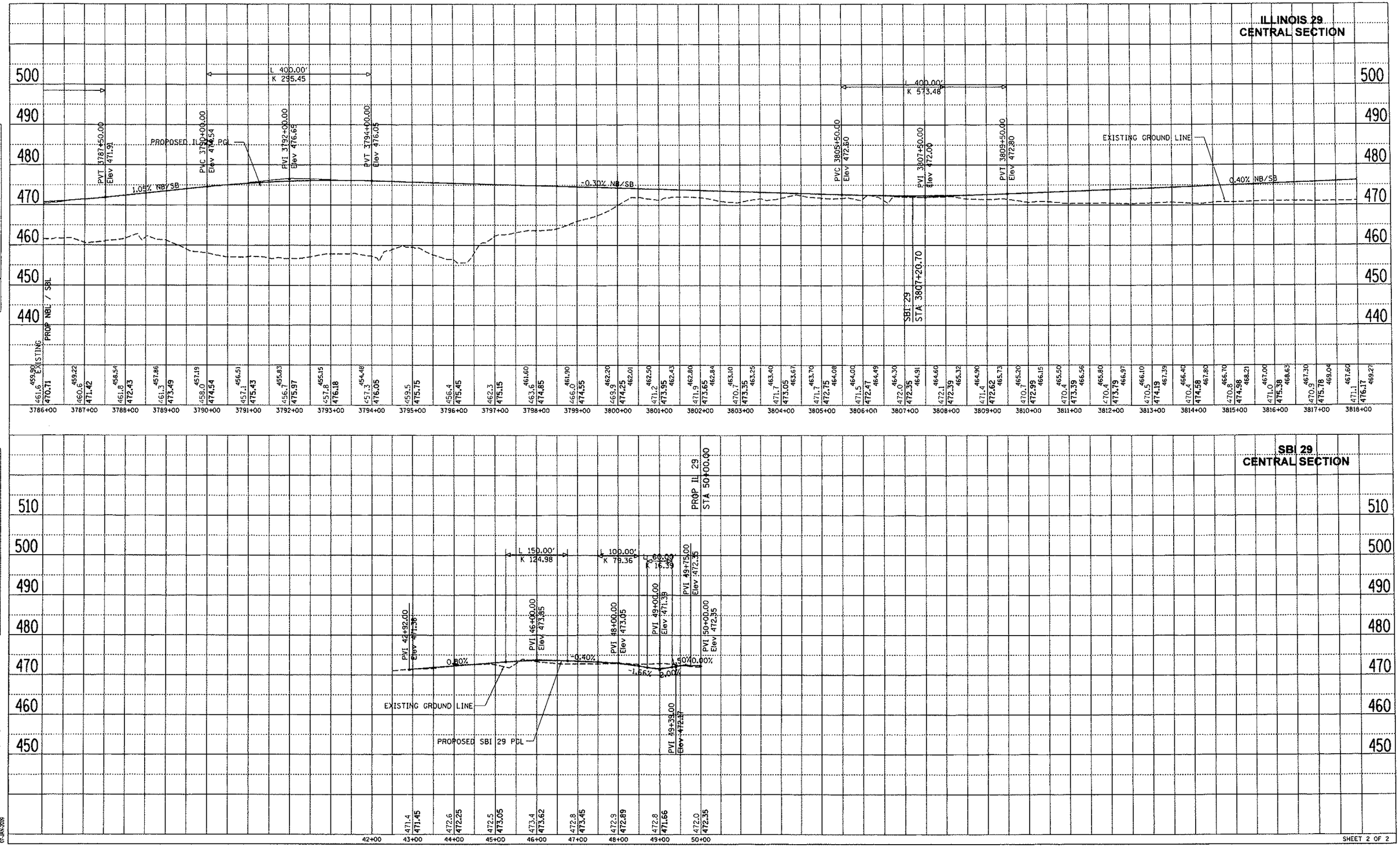
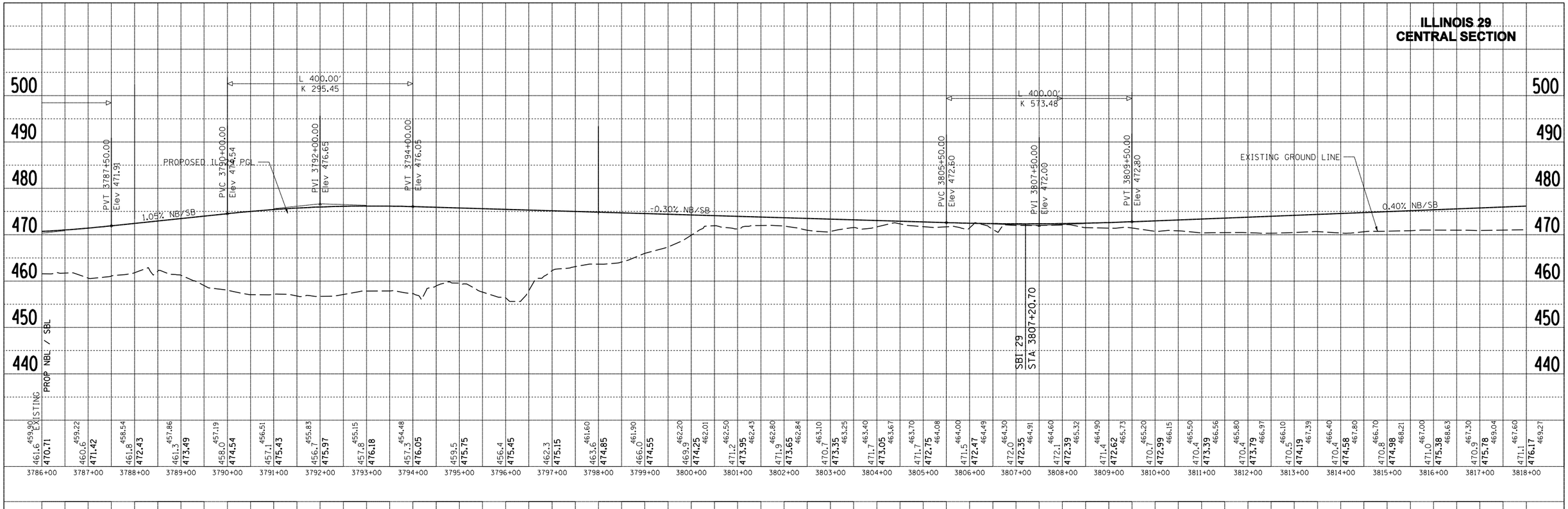
01-JAN-2009

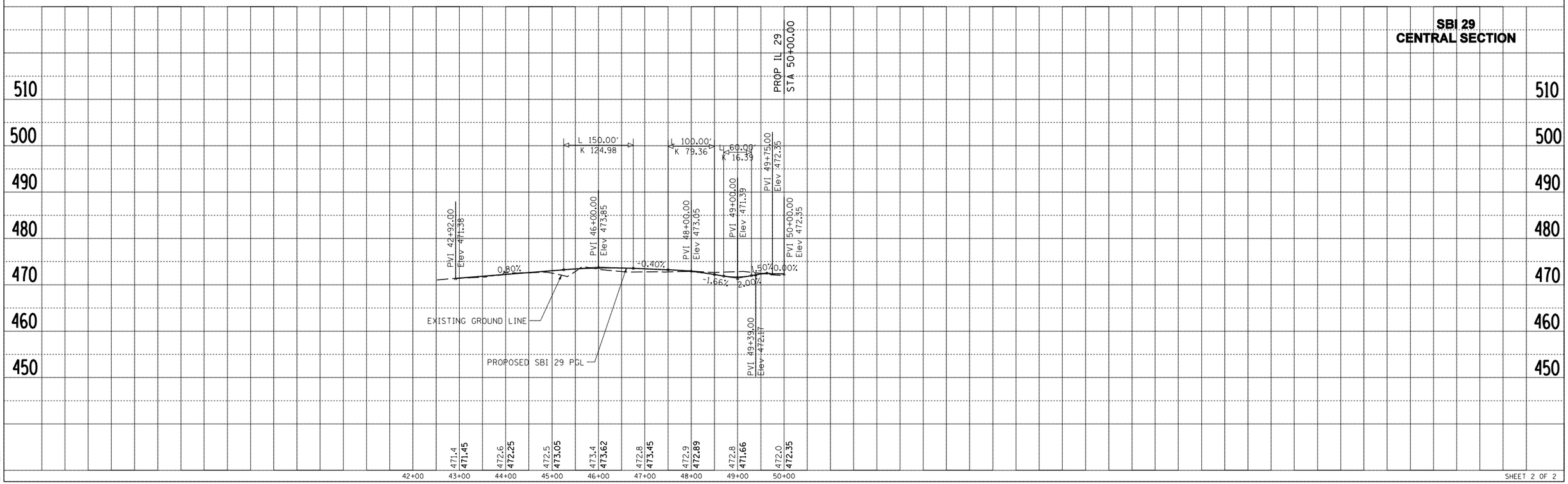

ILLINOIS 29
CENTRAL SECTION
L 400.00'
K 295.45
L 400.00'
K 573.48
PVT 3787+50.00
Elev 471.91
PROPOSED IL 29 P.G.
PVC 3790+00.00
Elev 474.54
PVI 3792+00.00
Elev 476.65
PVT 3794+00.00
Elev 476.05
PVC 3805+50.00
Elev 472.60
PVI 3807+50.00
Elev 472.00
PVT 3809+50.00
Elev 472.80
EXISTING GROUND LINE
1.05% NB/SB
-0.30% NB/SB
0.40% NB/SB
SBI 29
STA 3807+20.70
PROP NBL / SBL
EXISTING
SBI 29
CENTRAL SECTION
PROP IL 29
STA 50+00.00
L 150.00'
K 124.98
L 100.00'
K 79.36
PVI 42+92.00
Elev 471.38
PVI 46+00.00
Elev 473.85
PVI 48+00.00
Elev 473.05
PVI 49+00.00
Elev 471.39
PVI 49+75.00
Elev 472.35
PVI 50+00.00
Elev 472.35
PVI 49+39.00
Elev 472.17
0.80%
-0.40%
-1.56%
0.00%
EXISTING GROUND LINE
PROPOSED SBI 29 PGL
SHEET 2 OF 2

ILLINOIS 29
CENTRAL SECTION



PROFILE
SURVEYED
PLANS
AERIAL
GRADES CHECKED
BLM. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

SBI 29
CENTRAL SECTION



PROFILE
SURVEYED
PLANS
AERIAL
GRADES CHECKED
BLM. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

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21-APR-2020

VOLUME III
APPENDIX E3 – INTERCHANGE /INTERSECTION DESIGN STUDIES

INDEX OF SHEETS

NORTH SECTION – SOUTH OF HENRY, IL TO I–180

16. INTERSECTION DESIGN STUDY – IL 29 /TR 31 (OLD ROUTE 29 – 1150 N) INTERSECTION (2 SHEETS)
17. INTERSECTION DESIGN STUDY – IL 29 /TR 60 (1300E) INTERSECTION (3 SHEETS)
18. INTERCHANGE DESIGN STUDY – IL 29 /WESTERN AVENUE INTERCHANGE (13 SHEETS)
19. INTERSECTION DESIGN STUDY – IL 29 /WHITEFIELD ROAD INTERSECTION (3 SHEETS)
20. INTERSECTION DESIGN STUDY – IL 29 /MARSHALL /PUTNAM COUNTY LINE ROAD INTERSECTION (2 SHEETS)
21. INTERSECTION DESIGN STUDY – IL 29 /PROPOSED CONNECTION TO OLD IL 29 (NORTH OF HENRY) INTERSECTION (2 SHEETS)
22. INTERSECTION DESIGN STUDY – IL 29 /PUTNAM AREA INTERSECTIONS (11 SHEETS)
23. INTERSECTION DESIGN STUDY – IL 29 /SENACHWINE VALLEY ROAD INTERSECTION (2 SHEETS)
24. INTERSECTION DESIGN STUDY – IL 29 /CABIN HILL ROAD INTERSECTION (3 SHEETS)
25. INTERSECTION DESIGN STUDY – IL 29 /KENTVILLE ROAD INTERSECTION (5 SHEETS)

June 2010
Catalog No. 032469-00P

Illinois Department of Transportation

CH2MHILL

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16-APR-2010

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERSECTION DESIGN STUDY
IL 29 / TR31 (OLD ROUTE 29 – 1150 N) INTERSECTION

PREPARED BY : CH2MHILL

AUGUST 2007

Illinois Department of Transportation

CH2MHILL

June 2010
Catalog No. 032469-00P

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17-MAR-2009

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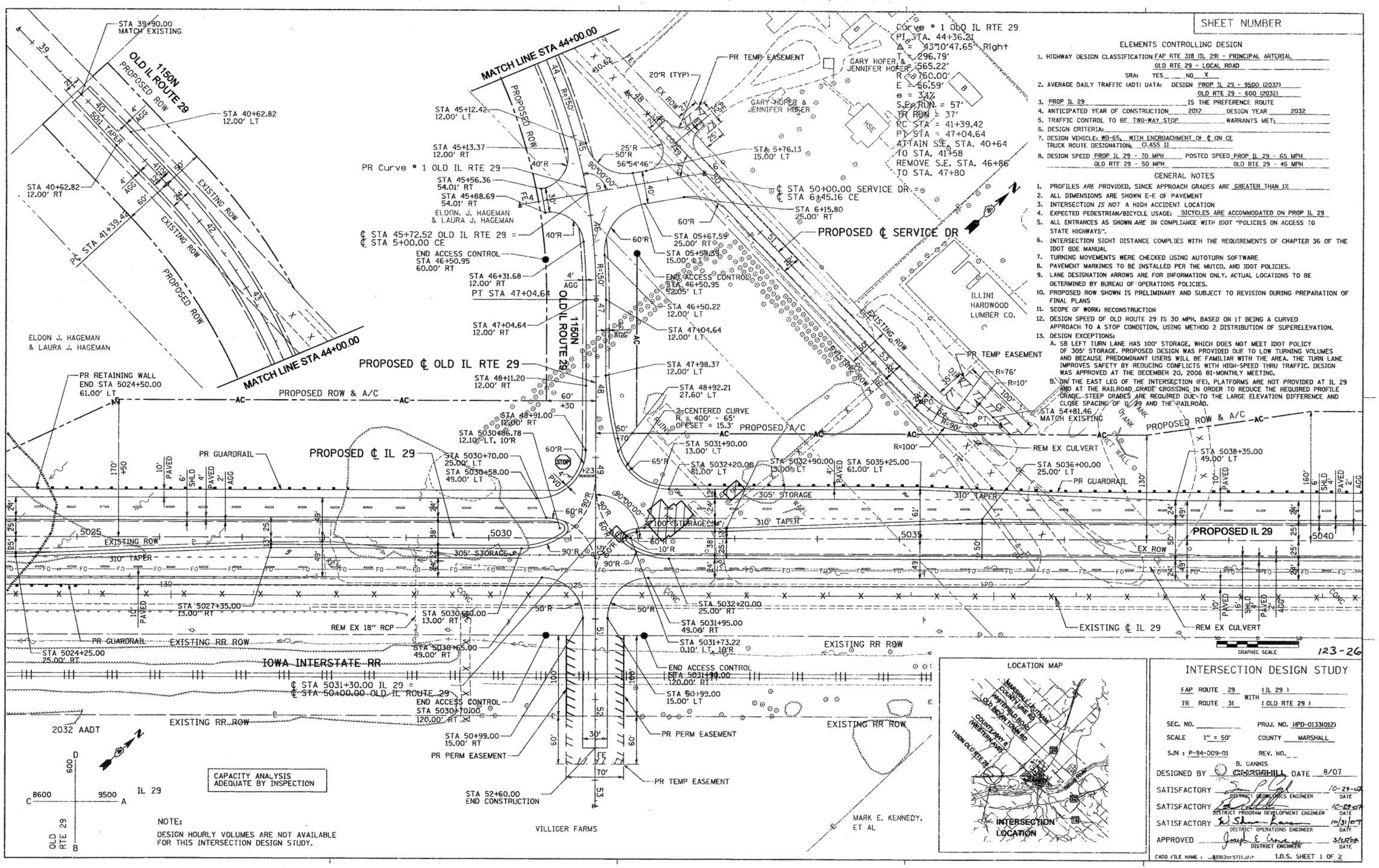

Curve # 1 OLD IL RTE 29
PI STA. 44+36.21
Δ = 43°10'47.65" Right
T = 296.79'
L = 565.22'
R = 750.00'
E = 56.59'
e = 3.1%
S.E. RUN = 57'
TR RUN = 37'
RC STA = 41+39.42
PT STA = 47+04.64
ATTAIN S.E. STA. 40+64
TO STA. 41+58
REMOVE S.E. STA. 46+86
TO STA. 47+80

ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION FAP RTE 318 (IL 29) - PRINCIPAL ARTERIAL
   OLD RTE 29 - LOCAL ROAD
   SRA: YES ___ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN PROP IL 29 - 9500 (2032)
   OLD RTE 29 - 600 (2032)
3. PROP IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE TWO-WAY STOP WARRANTS MET:
6. DESIGN CRITERIA:
7. DESIGN VEHICLE: WB-65, WITH ENCROACHMENT OF ℄ ON CE
   TRUCK ROUTE DESIGNATION: CLASS II
8. DESIGN SPEED PROP IL 29 - 70 MPH POSTED SPEED PROP IL 29 - 65 MPH
   OLD RTE 29 - 50 MPH OLD RTE 29 - 45 MPH

GENERAL NOTES

1. PROFILES *ARE* PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT
3. INTERSECTION *IS NOT* A HIGH ACCIDENT LOCATION
4. EXPECTED PEDESTRIAN/BICYCLE USAGE: BICYCLES ARE ACCOMMODATED ON PROP IL 29
5. ALL ENTRANCES AS SHOWN *ARE* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
6. INTERSECTION SIGHT DISTANCE COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE IDOT BDE MANUAL
7. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE
8. PAVEMENT MARKINGS TO BE INSTALLED PER THE MUTCD, AND IDOT POLICIES.
9. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY BUREAU OF OPERATIONS POLICIES.
10. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS
11. SCOPE OF WORK: RECONSTRUCTION
12. DESIGN SPEED OF OLD ROUTE 29 IS 30 MPH, BASED ON IT BEING A CURVED APPROACH TO A STOP CONDITION, USING METHOD 2 DISTRIBUTION OF SUPERELEVATION.
13. DESIGN EXCEPTIONS:
    A. SB LEFT TURN LANE HAS 100' STORAGE, WHICH DOES NOT MEET IDOT POLICY OF 305' STORAGE. PROPOSED DESIGN WAS PROVIDED DUE TO LOW TURNING VOLUMES AND BECAUSE PREDOMINANT USERS WILL BE FAMILIAR WITH THE AREA. THE TURN LANE IMPROVES SAFETY BY REDUCING CONFLICTS WITH HIGH-SPEED THRU TRAFFIC. DESIGN WAS APPROVED AT THE DECEMBER 20, 2006 BI-MONTHLY MEETING.
    B. ON THE EAST LEG OF THE INTERSECTION (FE), PLATFORMS ARE NOT PROVIDED AT IL 29 AND AT THE RAILROAD GRADE CROSSING IN ORDER TO REDUCE THE REQUIRED PROFILE GRADE. STEEP GRADES ARE REQUIRED DUE TO THE LARGE ELEVATION DIFFERENCE AND CLOSE SPACING OF IL 29 AND THE RAILROAD.

LOCATION MAP

INTERSECTION DESIGN STUDY

FAP ROUTE 29 (IL 29) WITH
TR ROUTE 31 (OLD RTE 29)

SEC. NO. ___ PROJ. NO. HPD-0133(012)
SCALE 1" = 50' COUNTY MARSHALL
SJN : P-94-009-01 REV. NO. ___

DESIGNED BY B. CANNIS / CH2MHILL DATE 8/07
SATISFACTORY DISTRICT GEOMETRICS ENGINEER DATE 10-29-07
SATISFACTORY DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE 10-29-07
SATISFACTORY DISTRICT OPERATIONS ENGINEER DATE 10/31/07
APPROVED DISTRICT ENGINEER DATE 3/28/08

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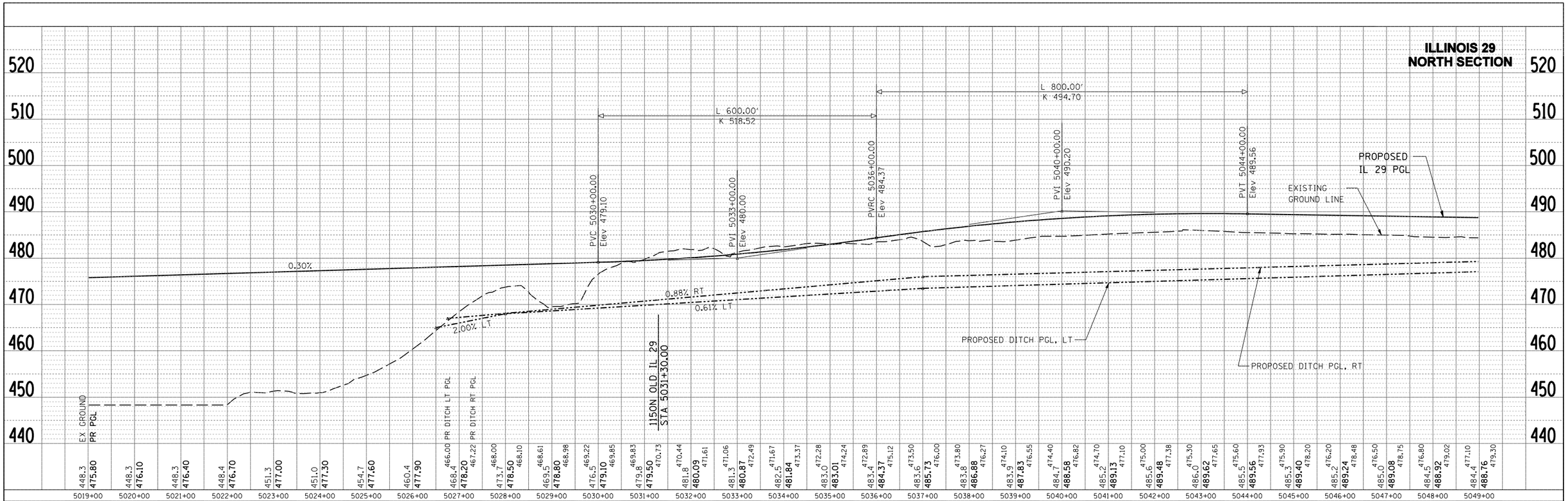

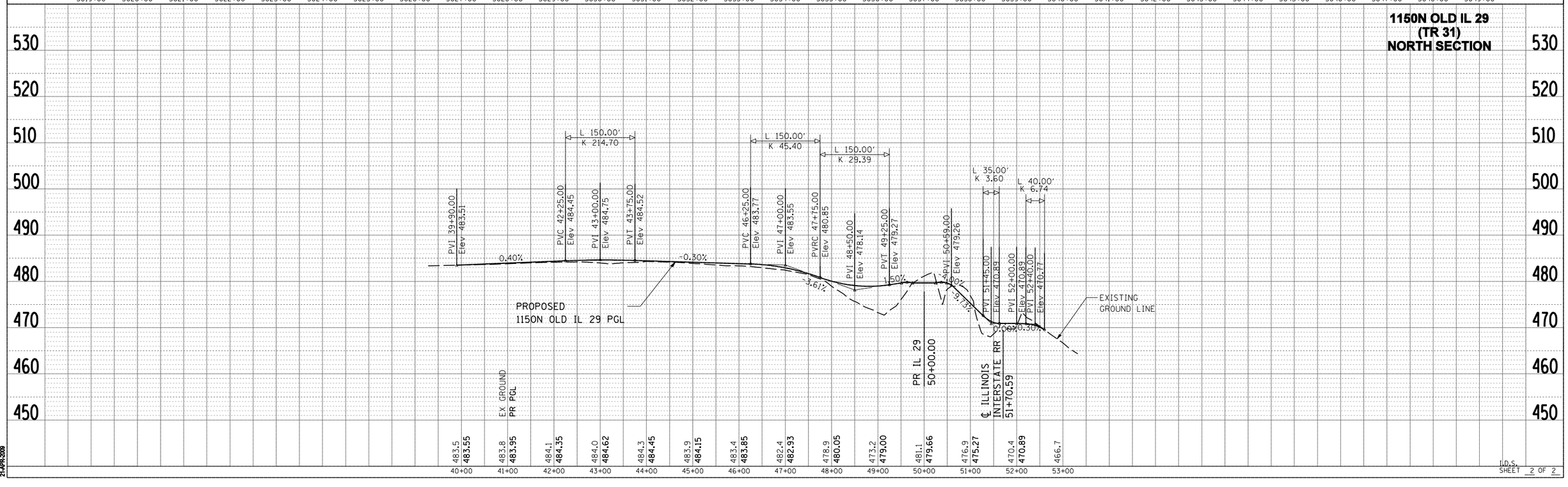

PLAN

		BY	DATE
SURVEYED			
PLOTTED			
ALIGNMENT CHECKED			
RT. OF WAY CHECKED			
NOTE BOOK			
NO.			
CADD FILE NAME			

PROFILE

		BY	DATE
SURVEYED			
PLOTTED			
GRADES CHECKED			
B.M. NOTED			
STRUCTURE NOTATNS CH'KD			
NOTE BOOK			
NO.			

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21-APR-2009

I.D.S.
SHEET 2 OF 2

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERSECTION DESIGN STUDY
IL 29 / TR 60 (1300 E) INTERSECTION

PREPARED BY : CH2MHILL

DECEMBER 2008

June 2010
Catalog No. 032469-00P

Illinois Department of Transportation
CH2MHILL

mfox
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17-MAR-2009

SHEET NUMBER

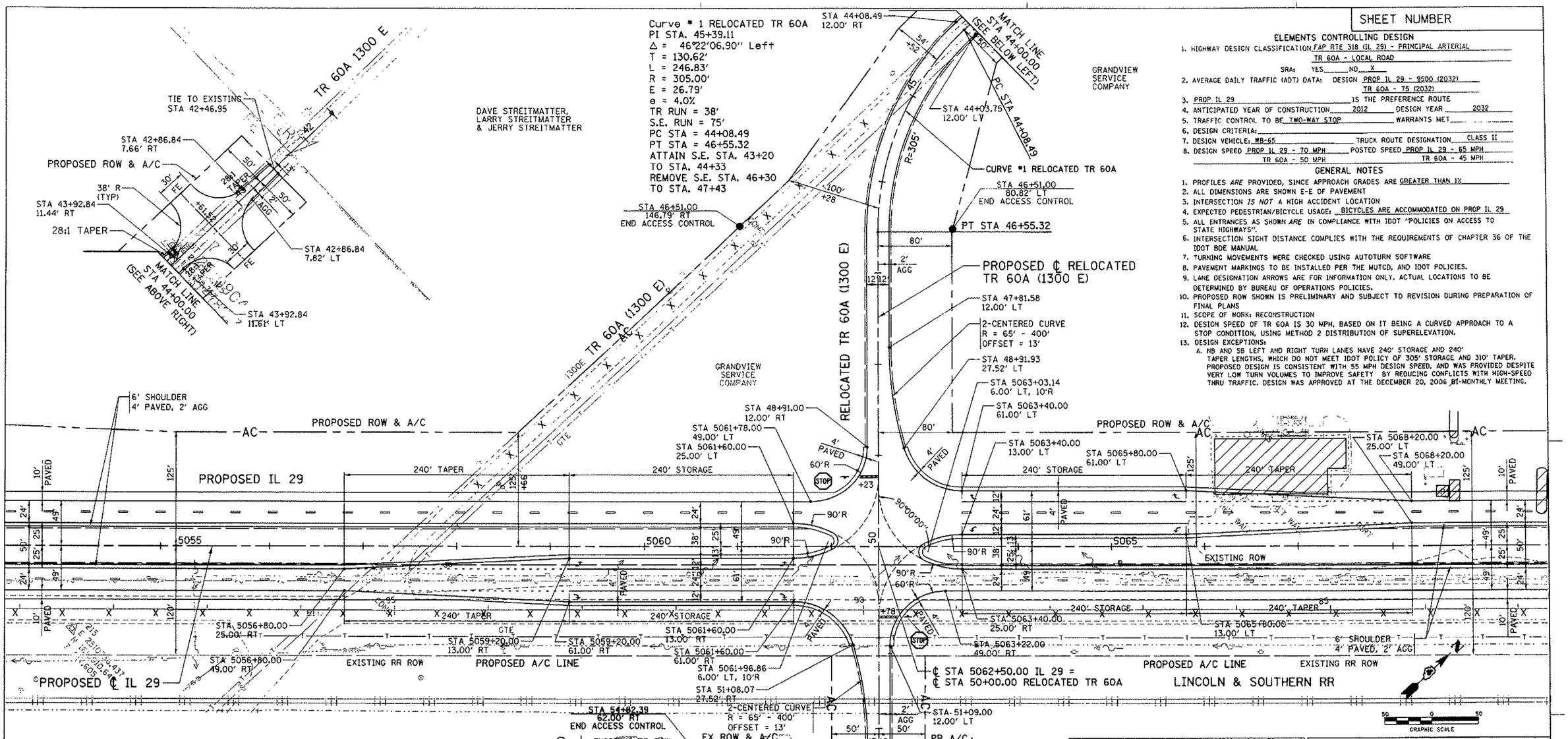
Curve * 1 RELOCATED TR 60A
PI STA. 45+39.11
Δ = 46°22'06.90" Left
T = 130.62'
L = 246.83'
R = 305.00'
E = 26.79'
e = 4.0%
TR RUN = 38'
S.E. RUN = 75'
PC STA = 44+08.49
PT STA = 46+55.32
ATTAIN S.E. STA. 43+20
TO STA. 44+33
REMOVE S.E. STA. 46+30
TO STA. 47+43

ELEMENTS CONTROLLING DESIGN

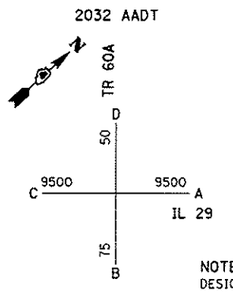
1. HIGHWAY DESIGN CLASSIFICATION FAP RTE 318 (IL 29) - PRINCIPAL ARTERIAL
   TR 60A - LOCAL ROAD
   SRA: YES ____ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN PROP IL 29 - 9500 (2032)
   TR 60A - 75 (2032)
3. PROP IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE TWO-WAY STOP WARRANTS MET ____
6. DESIGN CRITERIA: ____
7. DESIGN VEHICLE: WB-65 TRUCK ROUTE DESIGNATION CLASS II
8. DESIGN SPEED PROP IL 29 - 70 MPH POSTED SPEED PROP IL 29 - 65 MPH
   TR 60A - 50 MPH TR 60A - 45 MPH

GENERAL NOTES

1. PROFILES *ARE* PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT
3. INTERSECTION *IS NOT* A HIGH ACCIDENT LOCATION
4. EXPECTED PEDESTRIAN/BICYCLE USAGE: BICYCLES ARE ACCOMMODATED ON PROP IL 29
5. ALL ENTRANCES AS SHOWN *ARE* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
6. INTERSECTION SIGHT DISTANCE COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE IDOT BDE MANUAL
7. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE
8. PAVEMENT MARKINGS TO BE INSTALLED PER THE MUTCD, AND IDOT POLICIES.
9. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY BUREAU OF OPERATIONS POLICIES.
10. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS
11. SCOPE OF WORK: RECONSTRUCTION
12. DESIGN SPEED OF TR 60A IS 30 MPH, BASED ON IT BEING A CURVED APPROACH TO A STOP CONDITION, USING METHOD 2 DISTRIBUTION OF SUPERELEVATION.
13. DESIGN EXCEPTIONS:
    A. NB AND SB LEFT AND RIGHT TURN LANES HAVE 240' STORAGE AND 240' TAPER LENGTHS, WHICH DO NOT MEET IDOT POLICY OF 305' STORAGE AND 310' TAPER. PROPOSED DESIGN IS CONSISTENT WITH 55 MPH DESIGN SPEED, AND WAS PROVIDED DESPITE VERY LOW TURN VOLUMES TO IMPROVE SAFETY BY REDUCING CONFLICTS WITH HIGH-SPEED THRU TRAFFIC. DESIGN WAS APPROVED AT THE DECEMBER 20, 2006 BI-MONTHLY MEETING.

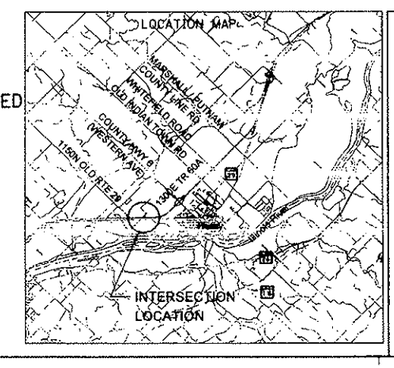


2032 AADT



CAPACITY ANALYSIS ADEQUATE BY INSPECTION

NOTE:
DESIGN HOURLY VOLUMES ARE NOT AVAILABLE FOR THIS INTERSECTION DESIGN STUDY.



INTERSECTION DESIGN STUDY

123 - 30 P-12

FAP ROUTE 318 (IL 29) WITH
TR ROUTE 60A (1300 E)

SEC. NO. ____ PROJ. NO. HPD-0133 (012)
SCALE 1" = 50' COUNTY MARSHALL
SJN : P-94-009-01 REV. NO. ____

DESIGNED BY B. GANNIS DATE 12/08
SATISFACTORY DISTRICT GEOMETRICS ENGINEER DATE 1/09/09
SATISFACTORY DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE 1/12/09
SATISFACTORY DISTRICT OPERATIONS ENGINEER DATE 1/9/09
APPROVED DISTRICT ENGINEER DATE 01/16/09

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DGN=SPEC
DATE-TIME
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*REF-
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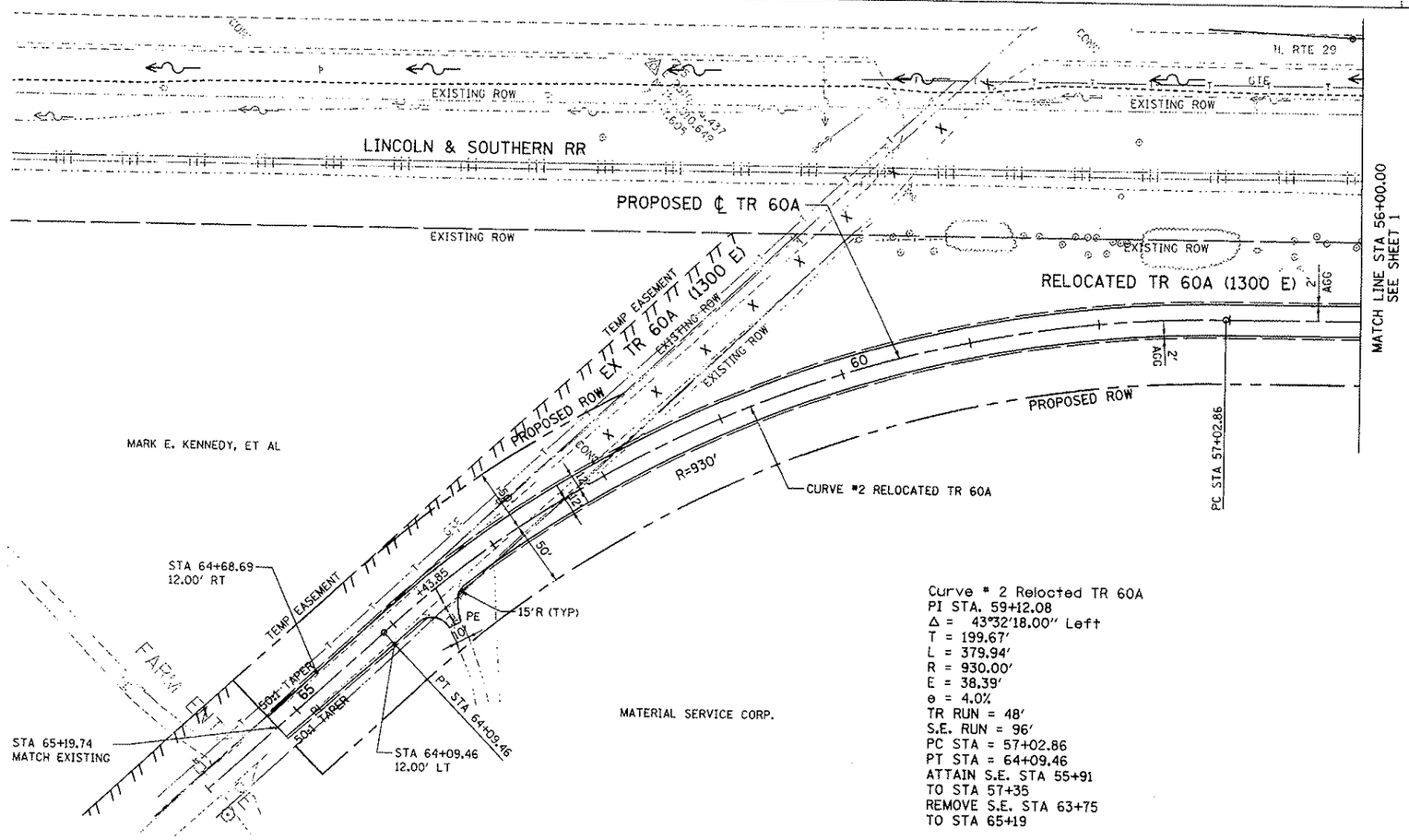
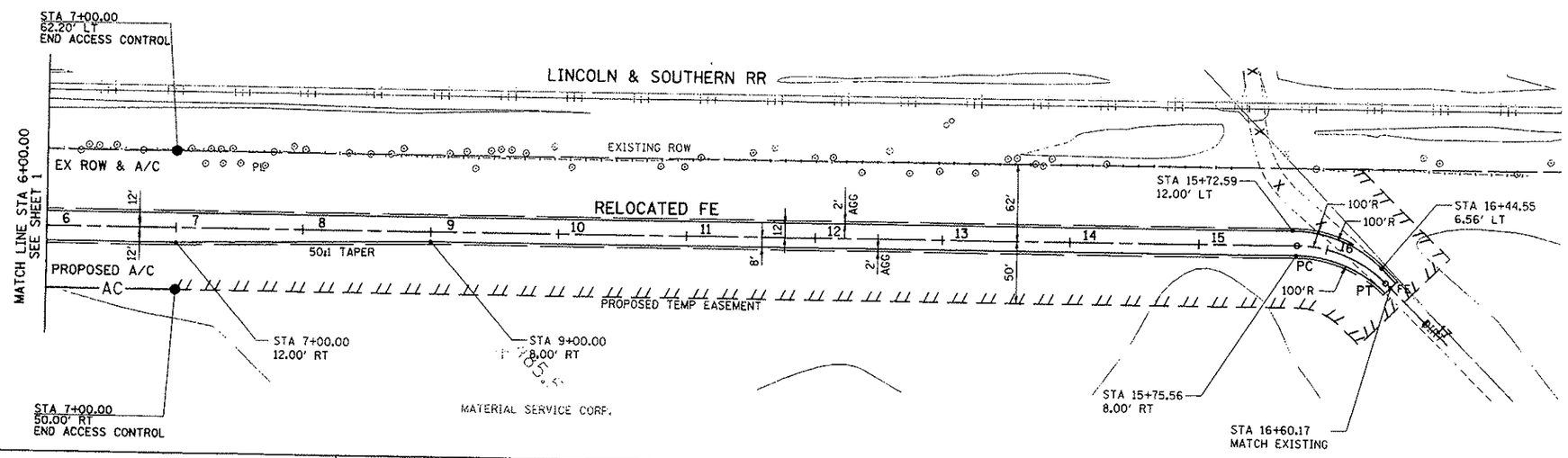
07-JAN-2009



Curve # 2 Relocted TR 60A
PI STA. 59+12.08
Δ = 43°32'18.00" Left
T = 199.67'
L = 379.94'
R = 930.00'
E = 38.39'
e = 4.0%
TR RUN = 48'
S.E. RUN = 96'
PC STA = 57+02.86
PT STA = 64+09.46
ATTAIN S.E. STA 55+91
TO STA 57+35
REMOVE S.E. STA 63+75
TO STA 65+19



INTERSECTION DESIGN STUDY

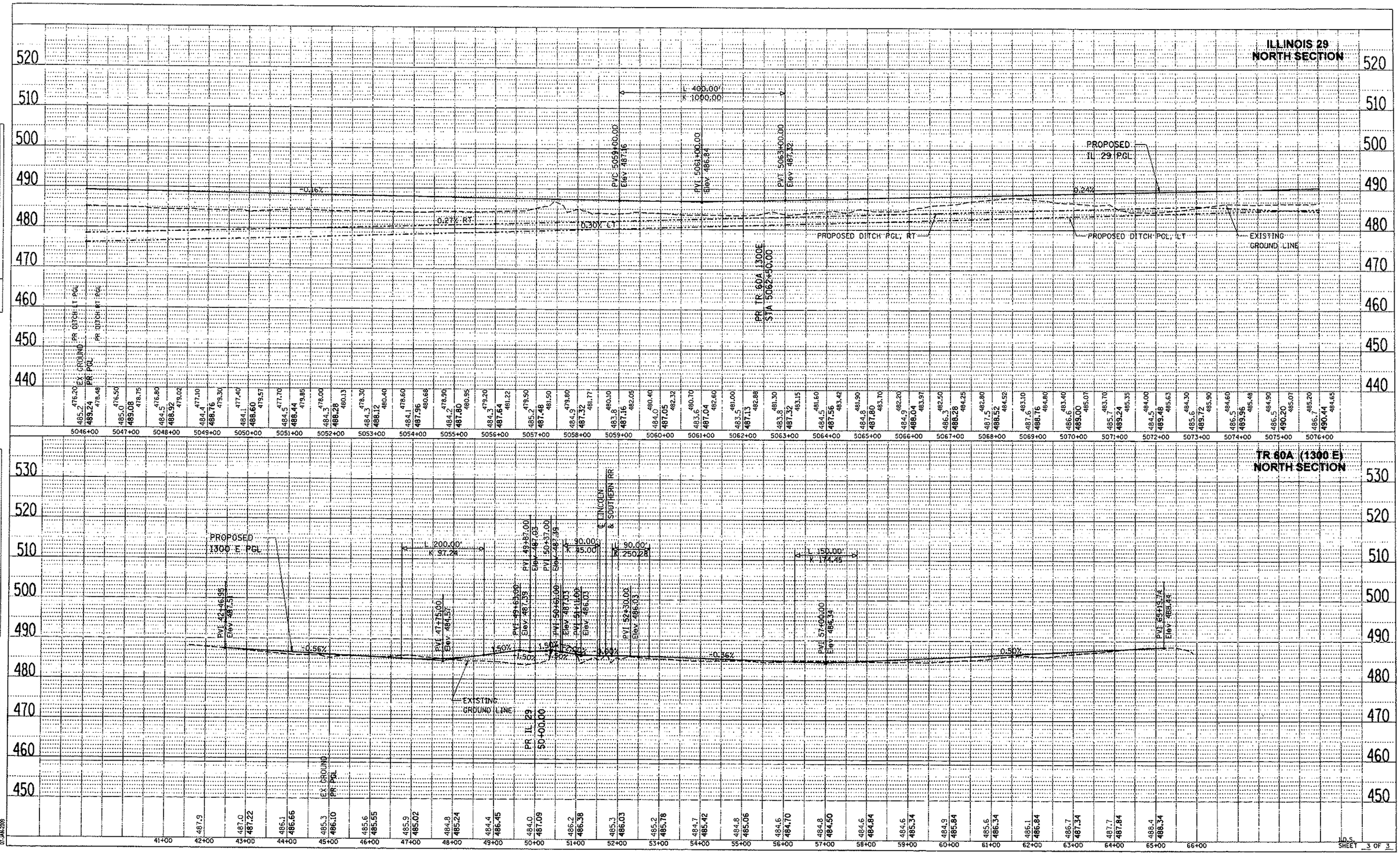
FAP ROUTE 318 (IL 29)
TR ROUTE 60A WITH (1300 E)

SEC. NO. _____

SCALE 1"=50' COUNTY MARSHALL

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 2 OF 3


ILLINOIS 29
NORTH SECTION
L 400.00'
K 1000.00
PVC 5059+00.00
Elev 487.16
PVI 5061+00.00
Elev 486.34
PVT 5063+00.00
Elev 487.32
-0.16%
0.27% RT
0.30% LT
0.24%
PROPOSED
IL 29 PGL
PROPOSED DITCH PGL, RT
PROPOSED DITCH PGL, LT
EXISTING
GROUND LINE
PR TR 60A 1300E
STA 5062+50.00
EX GROUND
PR PGL
PR DITCH LT PGL
PR DITCH RT PGL
TR 60A (1300 E)
NORTH SECTION
PROPOSED
1300 E PGL
L 200.00'
K 97.24
PVI 42+46.95
Elev 487.53
PVI 47+75.00
Elev 484.57
PVI 49+87.00
Elev 487.03
PVI 49+63.00
Elev 487.39
PVI 50+37.00
Elev 487.39
PVI 50+62.00
Elev 487.03
PVI 51+11.00
Elev 486.03
PVI 52+30.00
Elev 486.03
L 90.00'
K 45.00
L 90.00'
K 250.28
L 150.00'
K 174.46
PVI 57+00.00
Elev 486.34
PVI 64+15.74
Elev 488.44
-0.56%
1.50%
-0.36%
0.50%
EXISTING
GROUND LINE
PR IL 29
50+00.00
EX GROUND
PR PGL
IC LINCOLN
& SOUTHERN RR
PR DITCH LT PGL
PR DITCH RT PGL
PLOTTED
ALIGNMENT CHECKED
D.M. NOTED
CADD FILE NAME
NOTE BOOK
NO.
PLOTTED
GRADES CHECKED
D.M. NOTED
STRUCTURE NOTATIONS CHKD
NOTE BOOK
NO.
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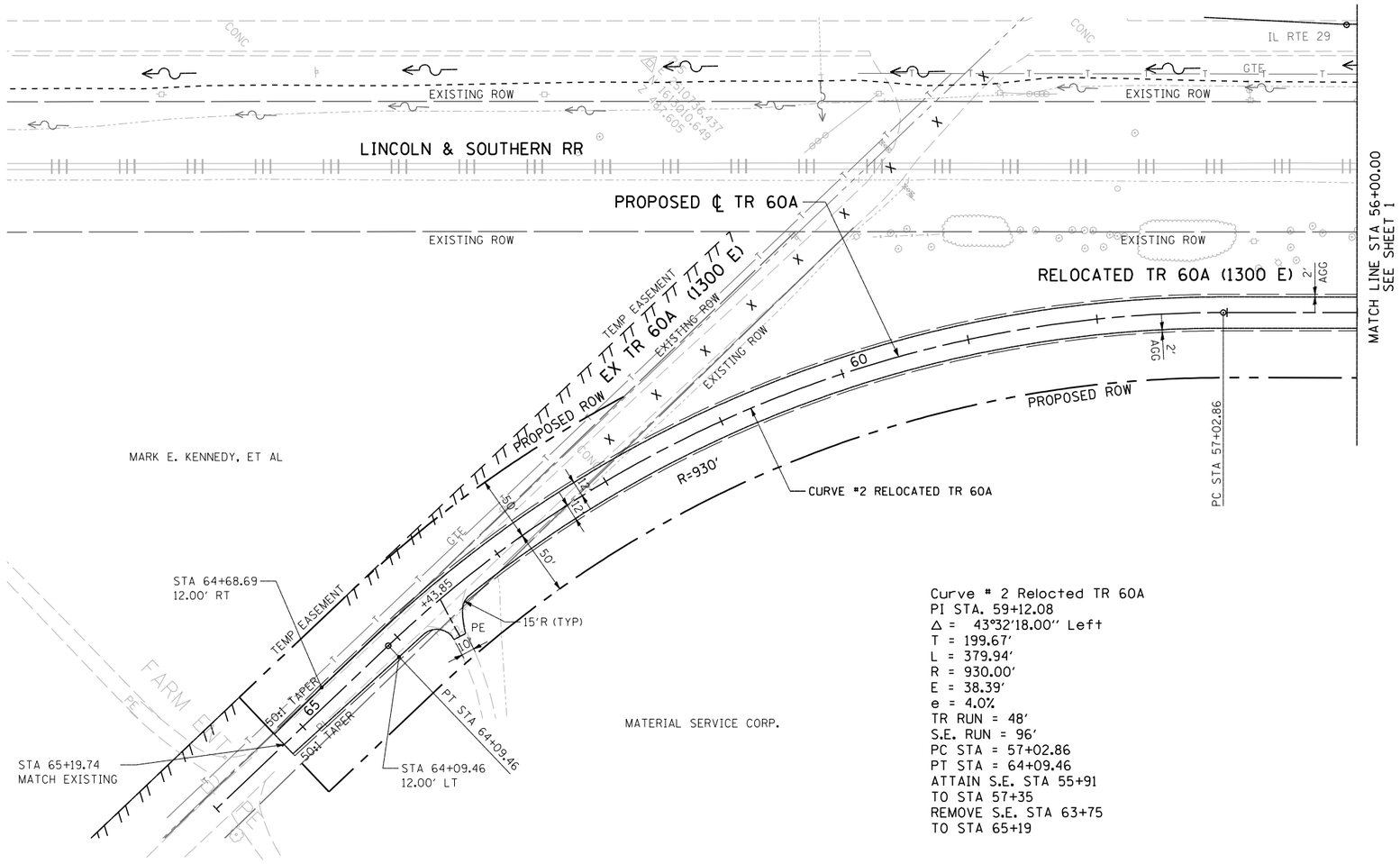
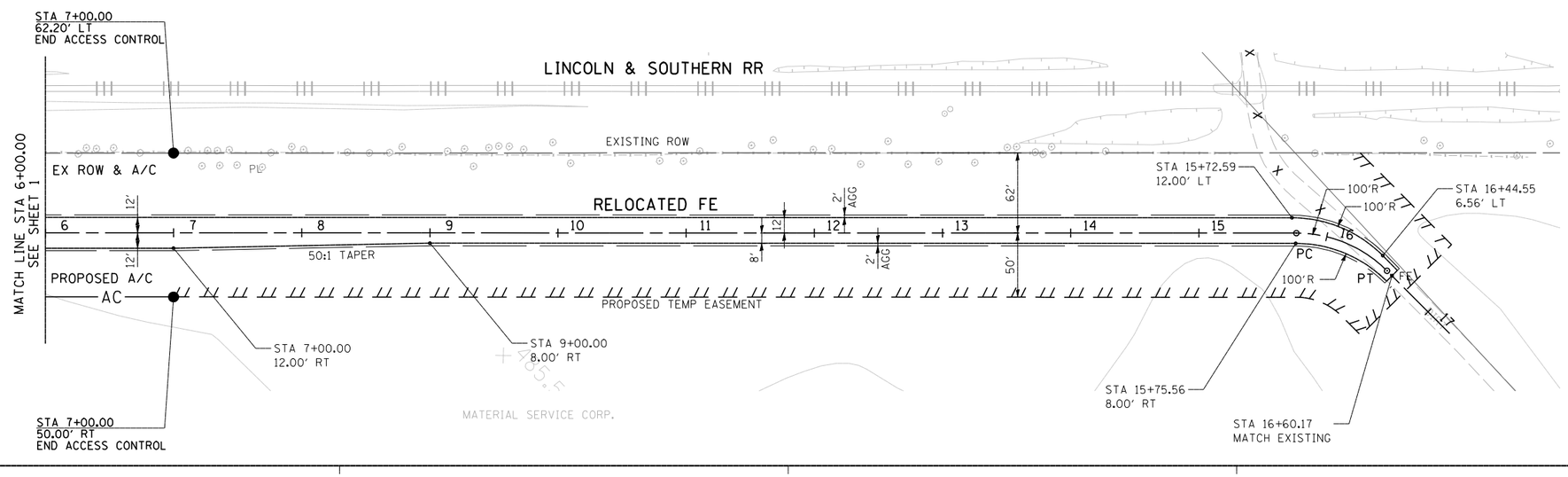
SHEET 3 OF 3



Curve # 2 Relocted TR 60A
PI STA. 59+12.08
Δ = 43°32'18.00'' Left
T = 199.67'
L = 379.94'
R = 930.00'
E = 38.39'
e = 4.0%
TR RUN = 48'
S.E. RUN = 96'
PC STA = 57+02.86
PT STA = 64+09.46
ATTAIN S.E. STA 55+91
TO STA 57+35
REMOVE S.E. STA 63+75
TO STA 65+19



GRAPHIC SCALE

INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29)
WITH
TR ROUTE 60A (1300 E)

SEC. NO. _____

SCALE 1''=50' COUNTY MARSHALL

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 2 OF 3

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•DATE-TIME•
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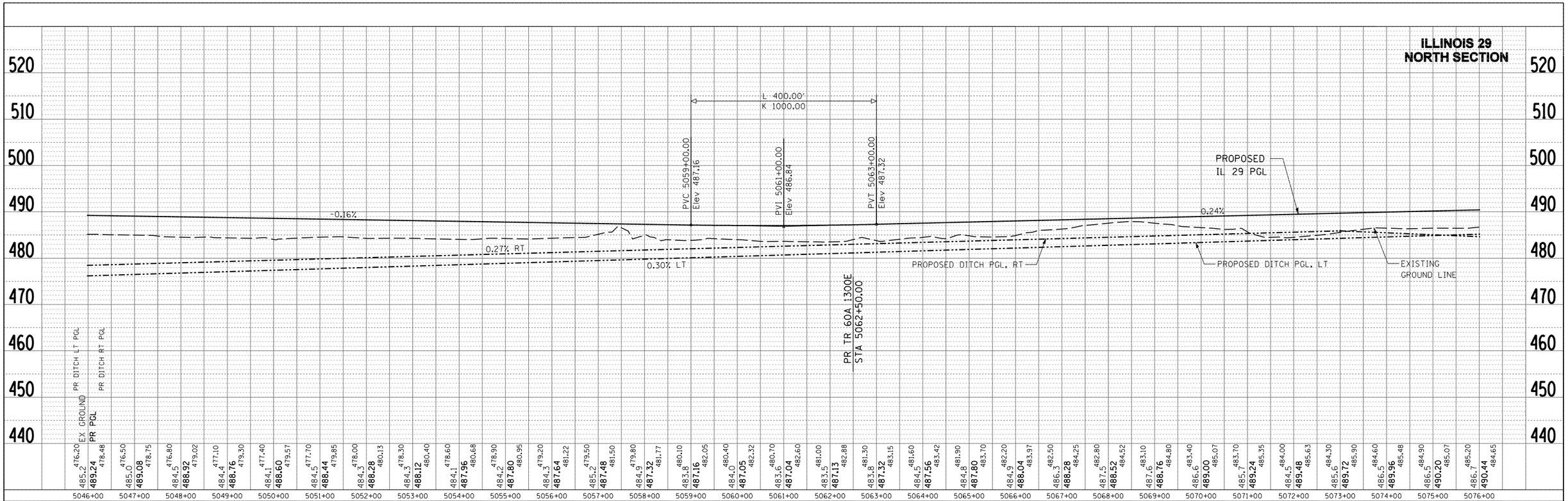

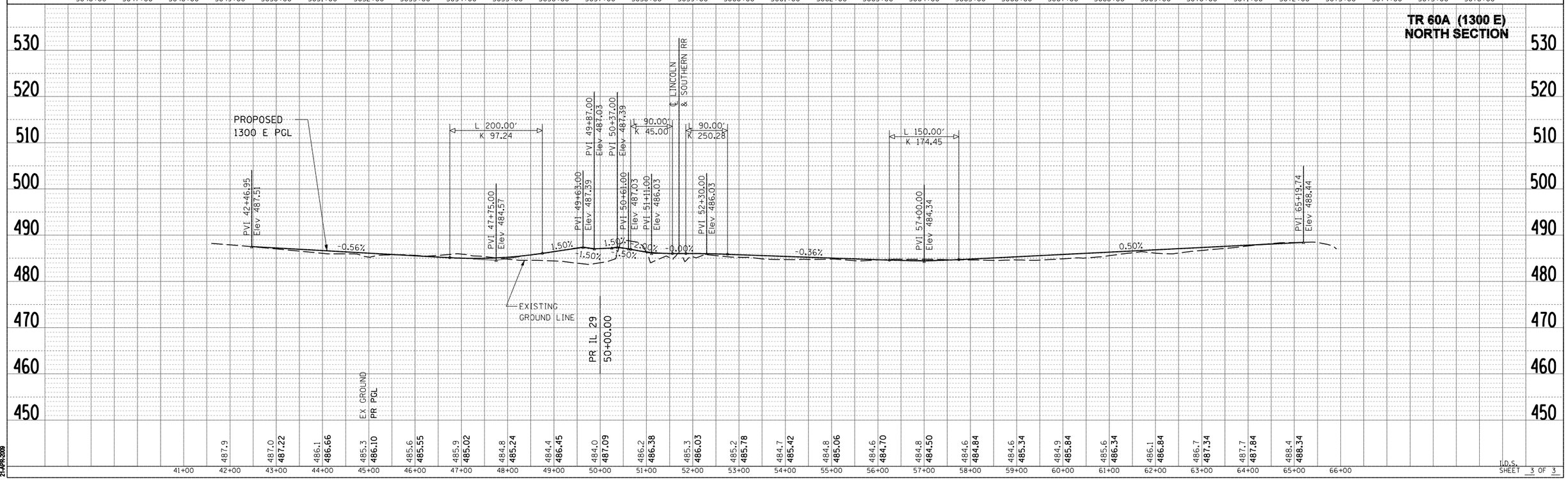

PLAN
NOTE BOOK NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
PLAN TILE NAME
BY
DATE

PROFILE
NOTE BOOK NO.
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
BY
DATE

I.D.S.
SHEET 3 OF 3

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21-APR-2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERCHANGE DESIGN STUDY
IL 29 /WESTERN AVENUE INTERCHANGE

PREPARED BY : CH2MHILL

JANUARY 2009

Illinois Department of Transportation

CH2MHILL

June 2010
Catalog No. 032469-00P

mfox
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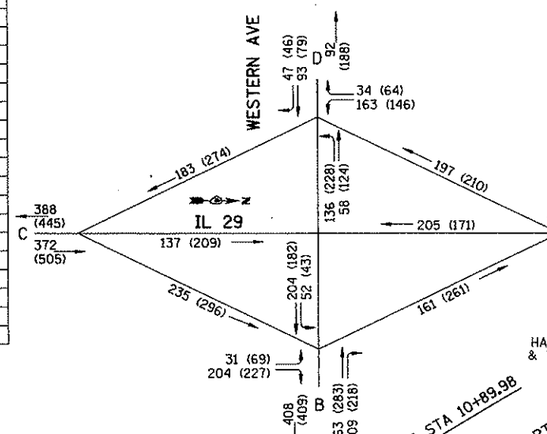
17-MAR-2009

		B	A	C	D
RAMP TYPE		NB OFF	SB ON	NB ON	SB OFF
DISTANCE TO ADJACENT RAMPS (FT.)		N/A	N/A	N/A	N/A
TERRAIN/GRADE		LEVEL	LEVEL	LEVEL	LEVEL
FREEWAY VOLUME	A.M.	372	205	137	402
	P.M.	505	171	209	381
RAMP VOLUME	A.M.	235	183	161	197
	P.M.	296	274	261	210
TRUCK TYPES		TYP	TYP	TYP	TYP
% OF TRUCKS ON FREEWAY (AM/PM)		19/17	22/12	19/17	22/12
PEAK-HOUR FACTOR		0.90	0.90	0.90	0.90
% OF TRUCKS ON RAMP (AM/PM)		9/10	8/7	15/6	14/7
NUMBER OF LANES ON FREEWAY		2	2	2	2
DESIGN SPEED (MPH)		70	70	70	70
CHECK POINT VOLUME (FREEWAY + RAMP)	A.M.	726	464	359	730
	P.M.	954	516	551	690
DENSITY/SPEED* (PC/MI/LN)/(MPH) (FREEWAY)	A.M.	0.086	0.083	0.070	0.092
	P.M.	0.108	0.090	0.094	0.086
LEVEL OF SERVICE (RAMP)	A.M.	A	A	A	A
	P.M.	A	A	A	A

* NOTE:
THE PREDICTION OF DENSITY AND THE MODEL TO DETERMINE THIS VARIABLE ARE DISCUSSED IN THE HCM. DENSITY IS MEASURED IN PASSENGER CARS PER MILE PER LANE (PC/MI/LN). THE AVERAGE TRAVEL SPEED MAY BE PREDICTED WITHIN THE RAMP INFLUENCE AREA, BUT SHOULD NOT BE USED AS A PRIMARY MEASURE OF LEVEL OF SERVICE.



PR Ramp D Curve * 1
PI STA. 9+91.53
Δ = 24°01'01.23" Right
T = 191.44'
L = 377.26'
R = 900.00'
E = 20.14'
e = 7.8%
S.E. RUN = 250'
PC STA. 8+00.09
PT STA. 11+77.34
ATTAIN S.E. STA. THROUGH STD. EXIT TERMINAL
REMOVE S.E. STA. 10+95
TO STA. 13+45

PR Ramp D Curve * 2
PI STA. 16+85.72
Δ = 12°03'48.37" Left
T = 80.83'
L = 161.07'
R = 765.00'
E = 4.26'
e = 5.5%
TR RUN = 50'/40'
S.E. RUN = 190'/140'
PC STA. 16+04.89
PT STA. 17+65.95
ATTAIN S.E. STA. 14+30
TO STA. 16+70
REMOVE S.E. STA. 17+20
TO STA. 18+60

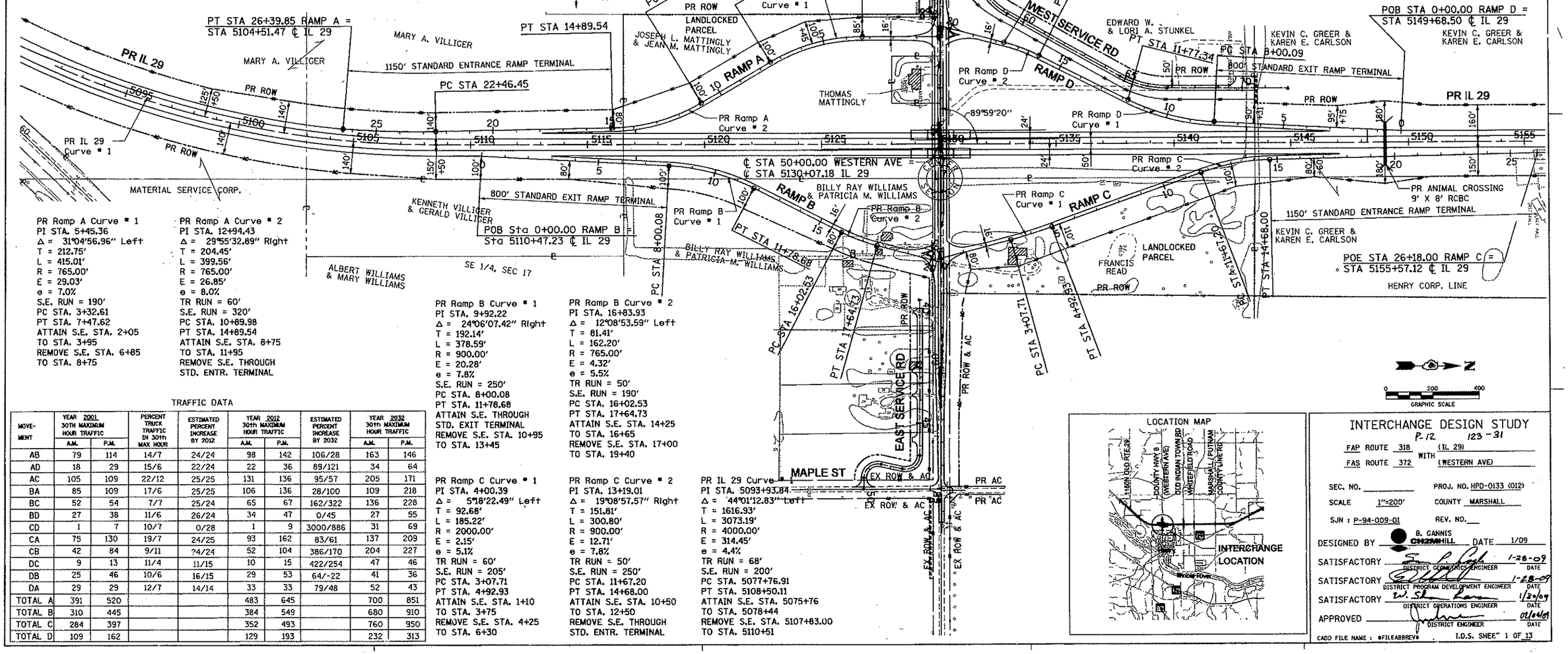
SHEET NUMBER

ELEMENTS CONTROLLING DESIGN

1. DESIGN DESIGNATION FAP ROUTE 318 (IL 29) EXPRESSWAY 9500 (2032) 70 MPH
   FAS 372 (WESTERN AVE.) (MINOR ARTERIAL) 1600 (2032) 55 MPH
2. IL 29 IS THE PREFERENCE ROUTE
3. ANTICIPATED YEAR OF CONSTRUCTION 2012
4. TRAFFIC CONTROL TO BE STOP SIGNS FOR EXIT RAMP TRAFFIC AT IL 29 TERMINALS
5. DESIGN SPEEDS: IL 29 - 70 MPH
   WESTERN AVE. - 55 MPH
   RAMP A - 50 MPH (CURVE 2), 40 MPH (CURVE 1)
   RAMP B - 50 MPH (CURVE 1), 40 MPH (CURVE 2)
   RAMP C - 50 MPH
   RAMP D - 50 MPH (CURVE 1), 40 MPH (CURVE 2)
6. IL 29 HAS PARTIAL ACCESS CONTROL.
7. IL 29 IS A CLASS II TRUCK ROUTE.
8. DESIGN VEHICLE: WB-65

GENERAL NOTES

1. PROFILES ARE PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. TYPE M-4.06 CURB AND GUTTER TO BE USED ON CORNER ISLANDS
3. TYPE M-4.24 CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND
4. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT EXCEPT WHERE NOTED OTHERWISE.
5. IL 29 IS A RURAL FOUR-LANE EXPRESSWAY
6. ALL ENTRANCES AS SHOWN ARE IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS"
7. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE.
8. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF THE FINAL PLANS.
9. RAMP EXIT AND ENTRANCE TERMINALS COMPLY WITH IDOT BDE MANUAL DESIGN CRITERIA AND STANDARDS, EXCEPT AS INDICATED IN THE EXCEPTIONS TO POLICY.
10. INTERSECTION SIGHT DISTANCE FOR RAMP INTERSECTIONS COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE BDE MANUAL.
11. DESIGN EXCEPTIONS - (NONE)



PR Ramp A Curve * 1
PI STA. 5+45.36
Δ = 31°04'56.96" Left
T = 212.75'
L = 415.01'
R = 765.00'
E = 29.03'
e = 7.0%
S.E. RUN = 190'
PC STA. 3+32.61
PT STA. 7+47.62
ATTAIN S.E. STA. 2+05
TO STA. 3+95
REMOVE S.E. STA. 6+85
TO STA. 8+75

PR Ramp A Curve * 2
PI STA. 12+94.43
Δ = 29°55'32.89" Right
T = 204.45'
L = 399.56'
R = 765.00'
E = 26.85'
e = 8.0%
TR RUN = 60'
S.E. RUN = 320'
PC STA. 10+89.98
PT STA. 14+89.54
ATTAIN S.E. STA. 8+75
TO STA. 11+95
REMOVE S.E. THROUGH STD. ENTR. TERMINAL

PR Ramp B Curve * 1
PI STA. 9+92.22
Δ = 24°06'07.42" Right
T = 192.14'
L = 378.59'
R = 900.00'
E = 20.28'
e = 7.8%
S.E. RUN = 250'
PC STA. 8+00.08
PT STA. 11+78.68
ATTAIN S.E. THROUGH STD. EXIT TERMINAL
REMOVE S.E. STA. 10+95
TO STA. 13+45

PR Ramp B Curve * 2
PI STA. 16+83.93
Δ = 12°08'53.59" Left
T = 81.41'
L = 162.20'
R = 765.00'
E = 4.32'
e = 5.5%
TR RUN = 50'
S.E. RUN = 190'
PC STA. 16+02.53
PT STA. 17+64.73
ATTAIN S.E. STA. 14+25
TO STA. 16+65
REMOVE S.E. STA. 17+00
TO STA. 19+40

PR Ramp C Curve * 1
PI STA. 4+00.39
Δ = 5°18'22.49" Left
T = 92.68'
L = 185.22'
R = 2000.00'
E = 2.15'
e = 5.1%
TR RUN = 60'
S.E. RUN = 205'
PC STA. 3+07.71
PT STA. 4+92.93
ATTAIN S.E. STA. 1+10
TO STA. 3+75
REMOVE S.E. STA. 4+25
TO STA. 6+30

PR Ramp C Curve * 2
PI STA. 13+19.01
Δ = 19°08'57.57" Right
T = 151.81'
L = 300.80'
R = 900.00'
E = 12.71'
e = 7.8%
TR RUN = 50'
S.E. RUN = 250'
PC STA. 11+67.20
PT STA. 14+68.00
ATTAIN S.E. STA. 10+50
TO STA. 12+50
REMOVE S.E. THROUGH STD. ENTR. TERMINAL

PR IL 29 Curve * 1
PI STA. 5093+93.84
Δ = 44°01'12.83" Left
T = 1616.93'
L = 3073.19'
R = 4000.00'
E = 314.45'
e = 4.4%
TR RUN = 68'
S.E. RUN = 200'
PC STA. 5077+76.91
PT STA. 5108+50.11
ATTAIN S.E. STA. 5075+76
TO STA. 5078+44
REMOVE S.E. STA. 5107+83.00
TO STA. 5110+51

TRAFFIC DATA

MOVEMENT	YEAR 2001 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY 2012	YEAR 2012 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY 2032	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB	79	114	14/7	24/24	98	142	106/28	163	146
AD	18	29	15/6	22/24	22	36	89/121	34	64
AC	105	109	22/12	25/25	131	136	95/57	205	171
BA	85	109	17/6	25/25	106	136	28/100	109	218
BC	52	54	7/7	25/24	65	67	162/322	136	228
BD	27	38	11/6	26/24	34	47	0/45	27	55
CD	1	7	10/7	0/28	1	9	3000/886	31	69
CA	75	130	19/7	24/25	93	162	83/61	137	209
CB	42	84	9/11	24/24	52	104	386/170	204	227
DC	9	13	11/4	11/15	10	15	422/254	47	46
DB	25	46	10/6	16/15	29	53	64/-22	41	36
DA	29	29	12/7	14/14	33	33	79/48	52	43
TOTAL A	391	520			483	645		700	851
TOTAL B	310	445			384	549		680	910
TOTAL C	284	397			352	493		760	950
TOTAL D	109	162			129	193		232	313

LOCATION MAP

INTERCHANGE DESIGN STUDY

P-12 123-31

FAP ROUTE 318 (IL 29) WITH
FAS ROUTE 372 (WESTERN AVE)

SEC. NO. ____ PROJ. NO. HPD-0133 (012)
SCALE 1"=200' COUNTY MARSHALL
SJN : P-94-009-01 REV. NO. ____

DESIGNED BY B. GANNIS ~~CHRIS HILL~~ DATE 1/09
SATISFACTORY DISTRICT GEOMETRICS ENGINEER DATE 1-28-09
SATISFACTORY DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE 1-28-09
SATISFACTORY DISTRICT OPERATIONS ENGINEER DATE 1/30/09
APPROVED DISTRICT ENGINEER DATE 01/04/09

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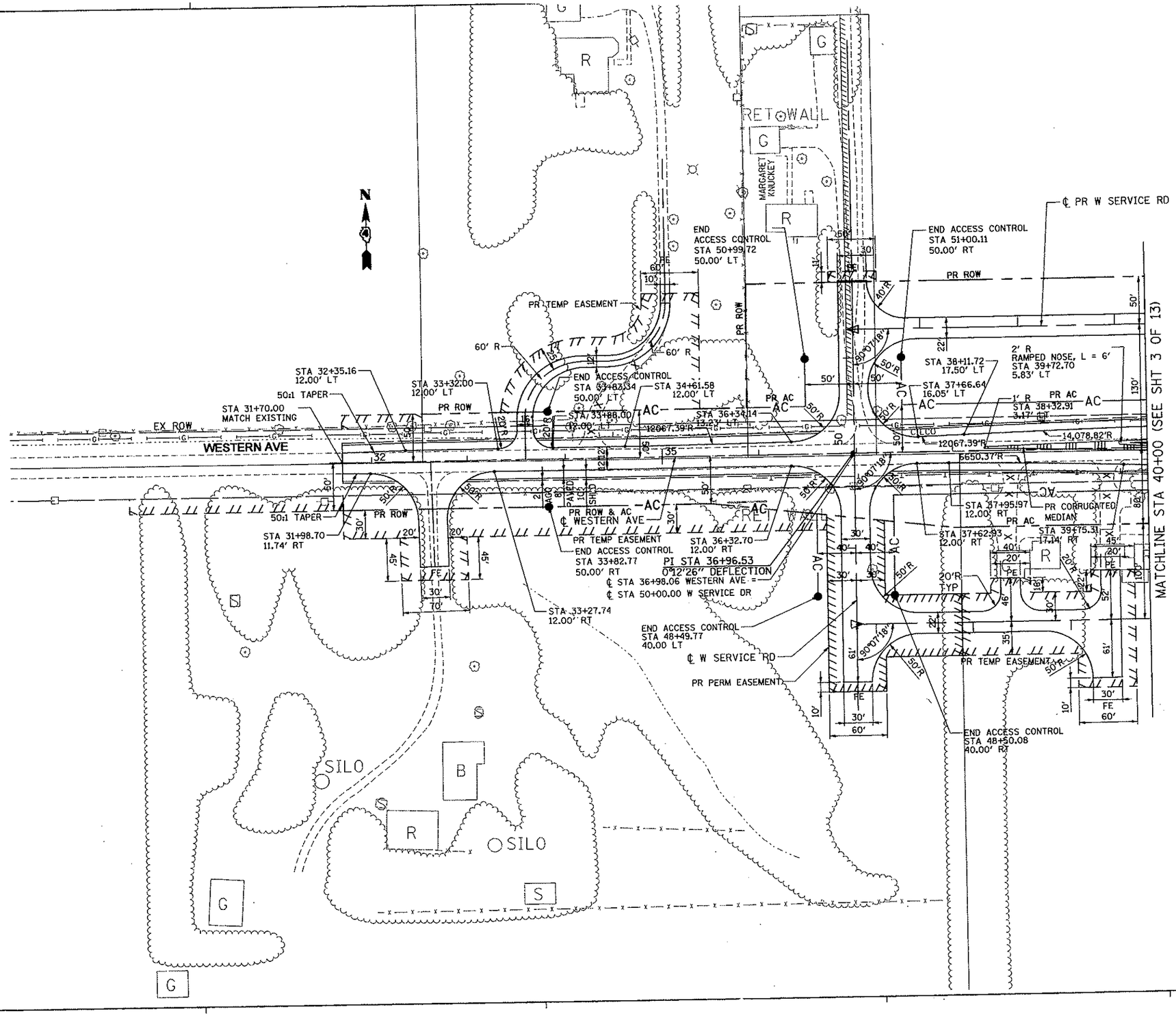


INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29)
FAS ROUTE 372 WITH (WESTERN AVE)

SEC. NO. _____

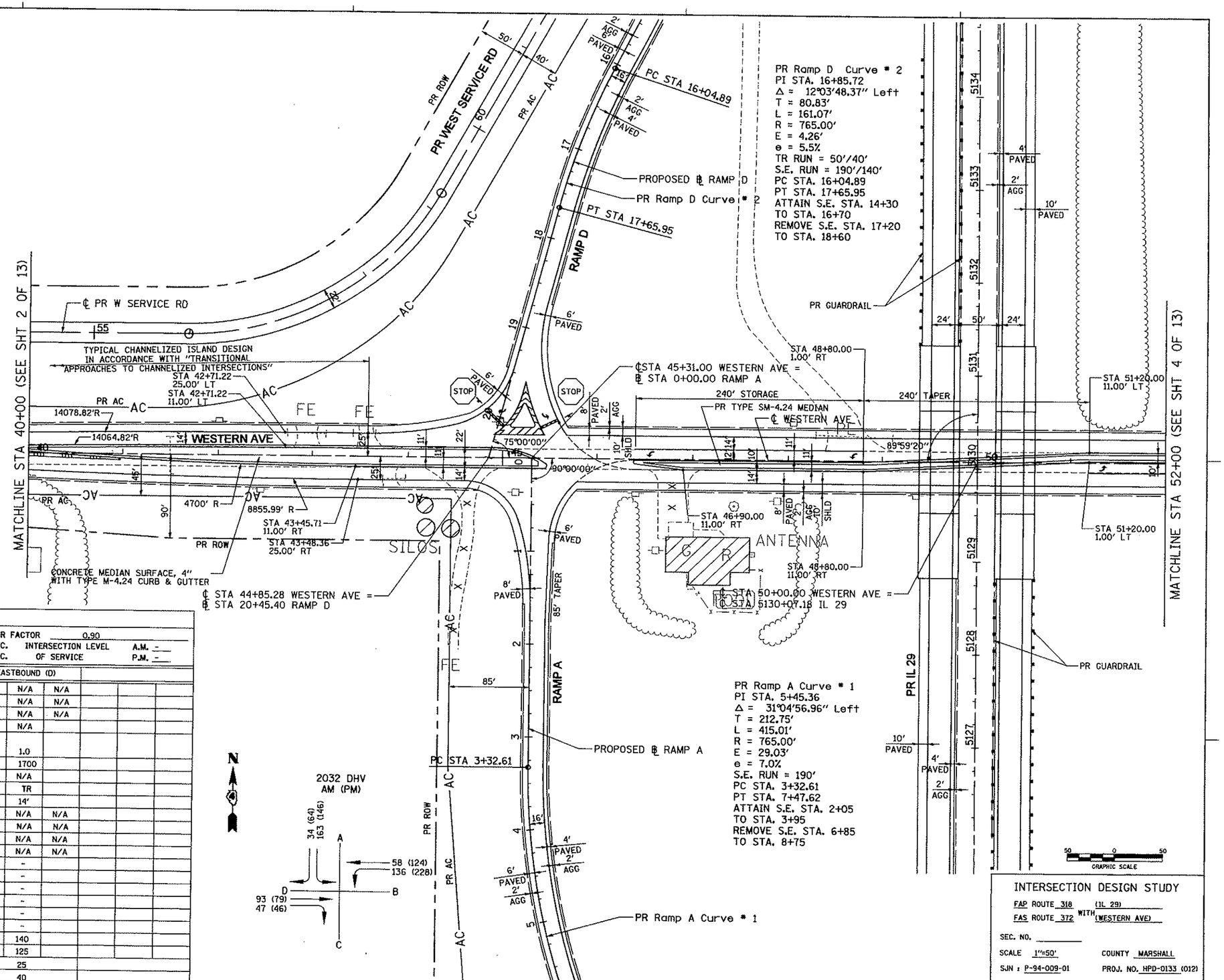
SCALE 1"=50'

COUNTY MARSHALL

SJN : P-94-009-01

PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 2 OF 13



CAPACITY DESIGN STUDY

N/A PHASE
N/A SEC. CYCLE
SIGNAL TYPE 2-WAY STOP

AREA OTHER
AVERAGE INTERSECTION DELAY A.M. -- SEC. P.M. -- SEC.
PROGRAM USED HCS 2000

PEAK HOUR FACTOR 0.90
INTERSECTION LEVEL OF SERVICE A.M. - P.M. -

APPROACH		SOUTHBOUND (A)			WESTBOUND (B)			EASTBOUND (D)					
BUS STOP CONDITION		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
PARKING MANEUVER/HR.		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
PEDESTRIANS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
ARRIVAL TYPE			N/A		N/A	N/A			N/A				
LANE UTILIZATION FACTOR			1.0		1.0	1.0			1.0				
BASE SATURATION FLOW			-		-	1700			1700				
D - DISTANCE			N/A		215'	N/A			N/A				
LANE GROUP			LR		L	T			TR				
LANE WIDTHS			16'		12'	14'			14'				
GREEN TIME (SECONDS)	A.M.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
	P.M.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
G/C RATIO	A.M.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
	P.M.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
LANE GROUP DELAY (SECONDS)	A.M.		16.6		7.9	-			-				
	P.M.		24.9		8.1	-			-				
V/C RATIO	A.M.		0.41		0.11	-			-				
	P.M.		0.57		0.18	-			-				
LEVEL OF SERVICE	A.M.		C		A	-			-				
	P.M.		C		A	-			-				
2032 30TH MAX. HOUR TRAFFIC	A.M.		197		136	58			140				
	P.M.		210		228	124			125				
2012 8TH MAX. HOURLY TRAFFIC	A.M.		70			55			25				
	P.M.		100			65			40				

INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29)
FAS ROUTE 372 WITH (WESTERN AVE)

SEC. NO. _____
SCALE 1"=50'
COUNTY MARSHALL
SJN : P-94-009-01
PROJ. NO. HPD-0133 (012)

I.O.S. SHEET 3 OF 13

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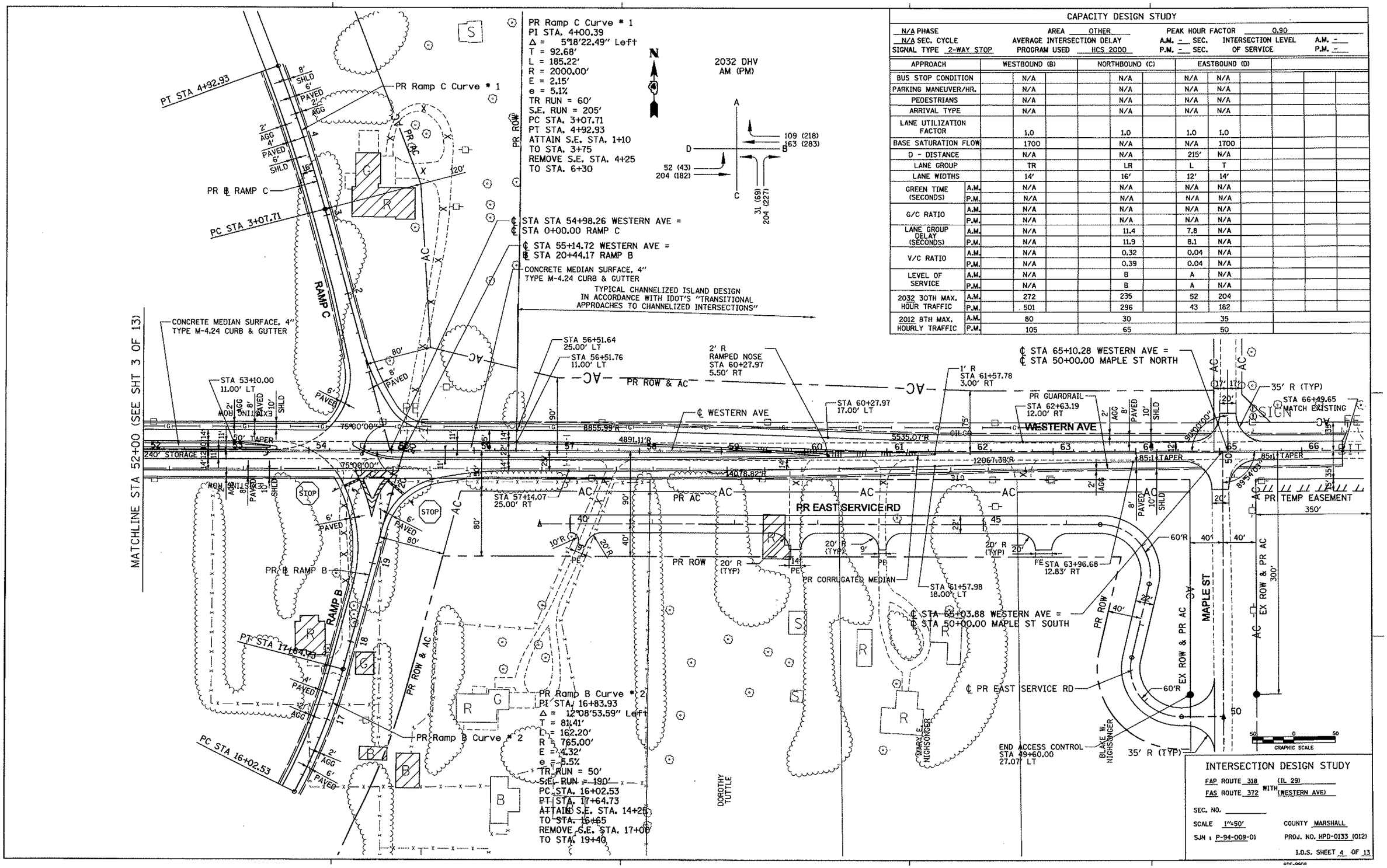


CAPACITY DESIGN STUDY

N/A PHASE
N/A SEC. CYCLE
SIGNAL TYPE 2-WAY STOP

AREA OTHER
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS 2000

PEAK HOUR FACTOR 0.90
A.M. - SEC.
P.M. - SEC.
INTERSECTION LEVEL OF SERVICE
A.M. -
P.M. -

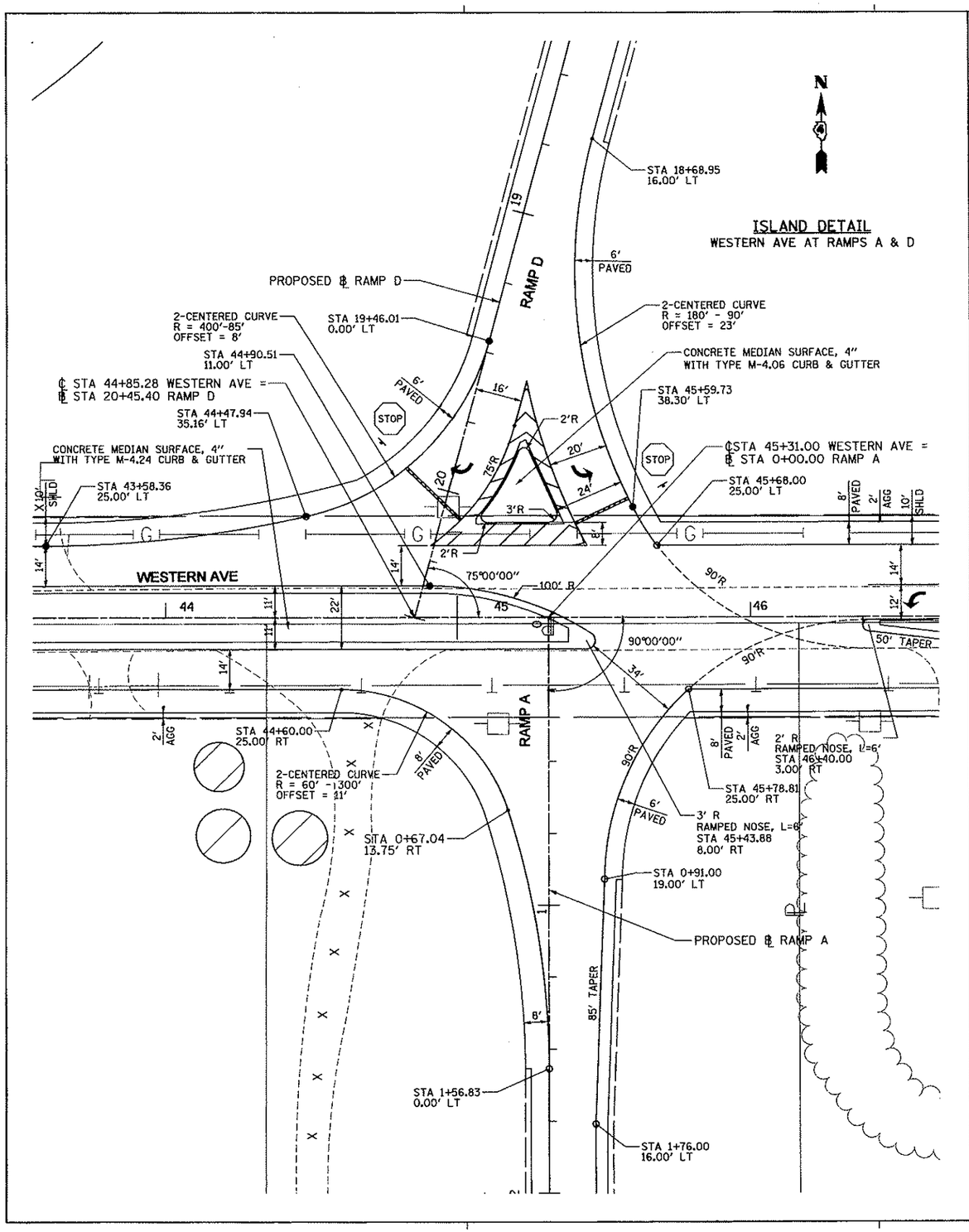
APPROACH		WESTBOUND (B)	NORTHBOUND (C)	EASTBOUND (D)					
BUS STOP CONDITION		N/A	N/A	N/A	N/A				
PARKING MANEUVER/HR.		N/A	N/A	N/A	N/A				
PEDESTRIANS		N/A	N/A	N/A	N/A				
ARRIVAL TYPE		N/A	N/A	N/A	N/A				
LANE UTILIZATION FACTOR		1.0	1.0	1.0	1.0				
BASE SATURATION FLOW		1700	N/A	N/A	1700				
D - DISTANCE		N/A	N/A	215'	N/A				
LANE GROUP		TR	LR	L	T				
LANE WIDTHS		14'	16'	12'	14'				
GREEN TIME (SECONDS)	A.M.	N/A	N/A	N/A	N/A				
	P.M.	N/A	N/A	N/A	N/A				
G/C RATIO	A.M.	N/A	N/A	N/A	N/A				
	P.M.	N/A	N/A	N/A	N/A				
LANE GROUP DELAY (SECONDS)	A.M.	N/A	11.4	7.8	N/A				
	P.M.	N/A	11.9	8.1	N/A				
V/C RATIO	A.M.	N/A	0.32	0.04	N/A				
	P.M.	N/A	0.39	0.04	N/A				
LEVEL OF SERVICE	A.M.	N/A	B	A	N/A				
	P.M.	N/A	B	A	N/A				
2032 30TH MAX. HOUR TRAFFIC	A.M.	272	235	52	204				
	P.M.	501	296	43	182				
2012 8TH MAX. HOURLY TRAFFIC	A.M.	80	30	35					
	P.M.	105	65	50					

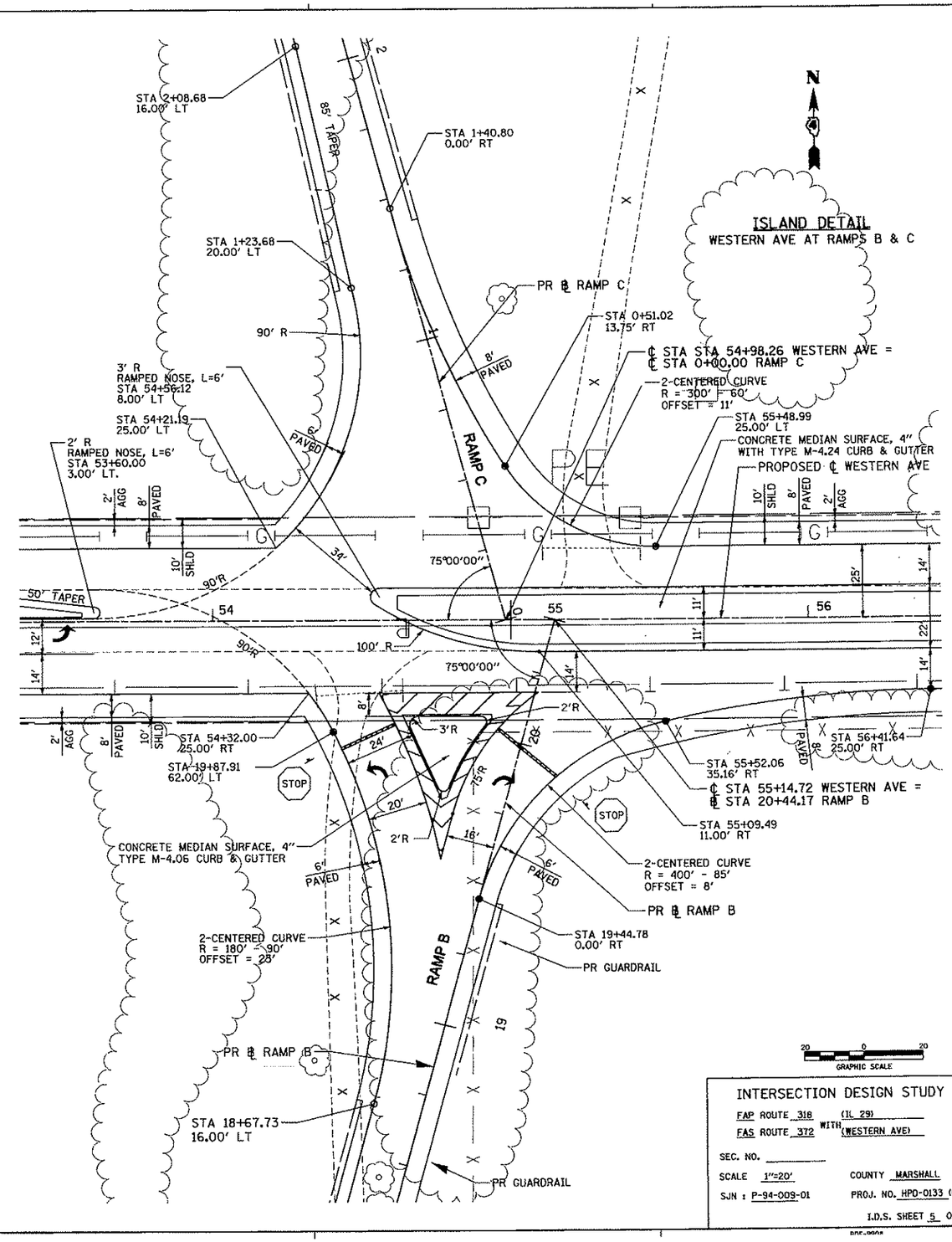
INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29)
FAS ROUTE 372 WITH (WESTERN AVE)

SEC. NO.
SCALE 1"=50'
COUNTY MARSHALL
SJN : P-94-009-01
PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 4 OF 13





INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29)

FAS ROUTE 372 WITH (WESTERN AVE)

SEC. NO. _____

SCALE 1"=20' COUNTY MARSHALL

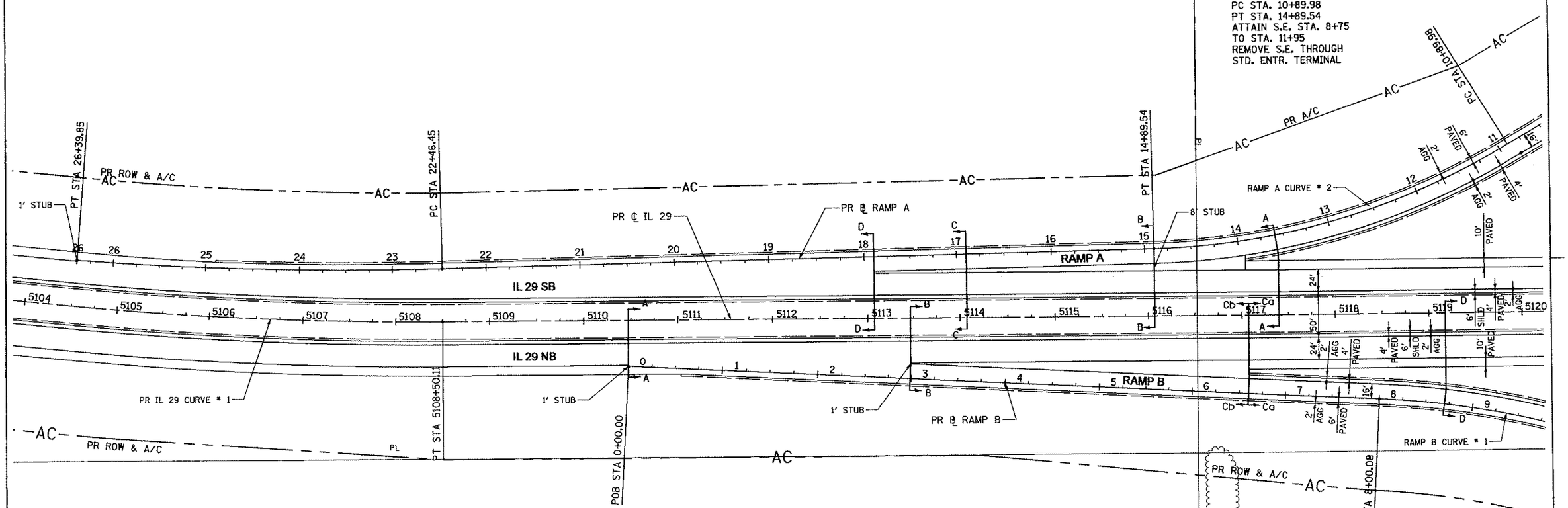
SJN : P-94-009-01 PROJ. NO. HPO-0133 (012)

I.D.S. SHEET 5 OF 13

CROSS SECTIONS STATIONS RAMP A

SECTION	℄ STATION	M STATION
SECTION A-A	13+59.54	5117+40.58
SECTION B-B	14+89.54	5116+07.40
SECTION C-C	16+89.54	5114+07.36
SECTION D-D	17+89.54	5113+07.34

PR Ramp A Curve * 2
PI STA. 12+94.43
Δ = 29°55'32.89" Right
T = 204.45'
L = 399.56'
R = 765.00'
E = 26.85'
e = 8.0%
TR RUN = 60'
S.E. RUN = 320'
PC STA. 10+89.98
PT STA. 14+89.54
ATTAIN S.E. STA. 8+75
TO STA. 11+95
REMOVE S.E. THROUGH
STD. ENTR. TERMINAL



PR IL 29 Curve * 1
PI STA. 5093+93.84
Δ = 44°01'12.83" Left
T = 1616.93'
L = 3073.19'
R = 4000.00'
E = 314.45'
e = 4.4%
TR RUN = 68'
S.E. RUN = 200'
PC STA. 5077+76.91
PT STA. 5108+50.11
ATTAIN S.E. STA. 5075+76
TO STA. 5078+44
REMOVE S.E. STA. 5107+83.00
TO STA. 5110+51

KENNETH VILLIGER
& GERALD VILLIGER

CROSS SECTIONS STATIONS RAMP B

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	5110+47.23
SECTION B-B	2+99.57	5113+47.23
SECTION C-C	6+60.09	5117+07.23
SECTION D-D	8+70.09	5119+19.84

PR RAMP B CURVE * 1
PI STA. 9+92.22
Δ = 24°06'07.42" Right
T = 192.14'
L = 378.59'
R = 900.00'
E = 20.28'
e = 7.8%
S.E. RUN = 250'
PC STA. 8+00.08
PT STA. 11+78.68
ATTAIN S.E. THROUGH
STD. EXIT TERMINAL
REMOVE S.E. STA. 10+95
TO STA. 13+45

RAMPS A & B

GRAPHIC SCALE

INTERSECTION DESIGN STUDY

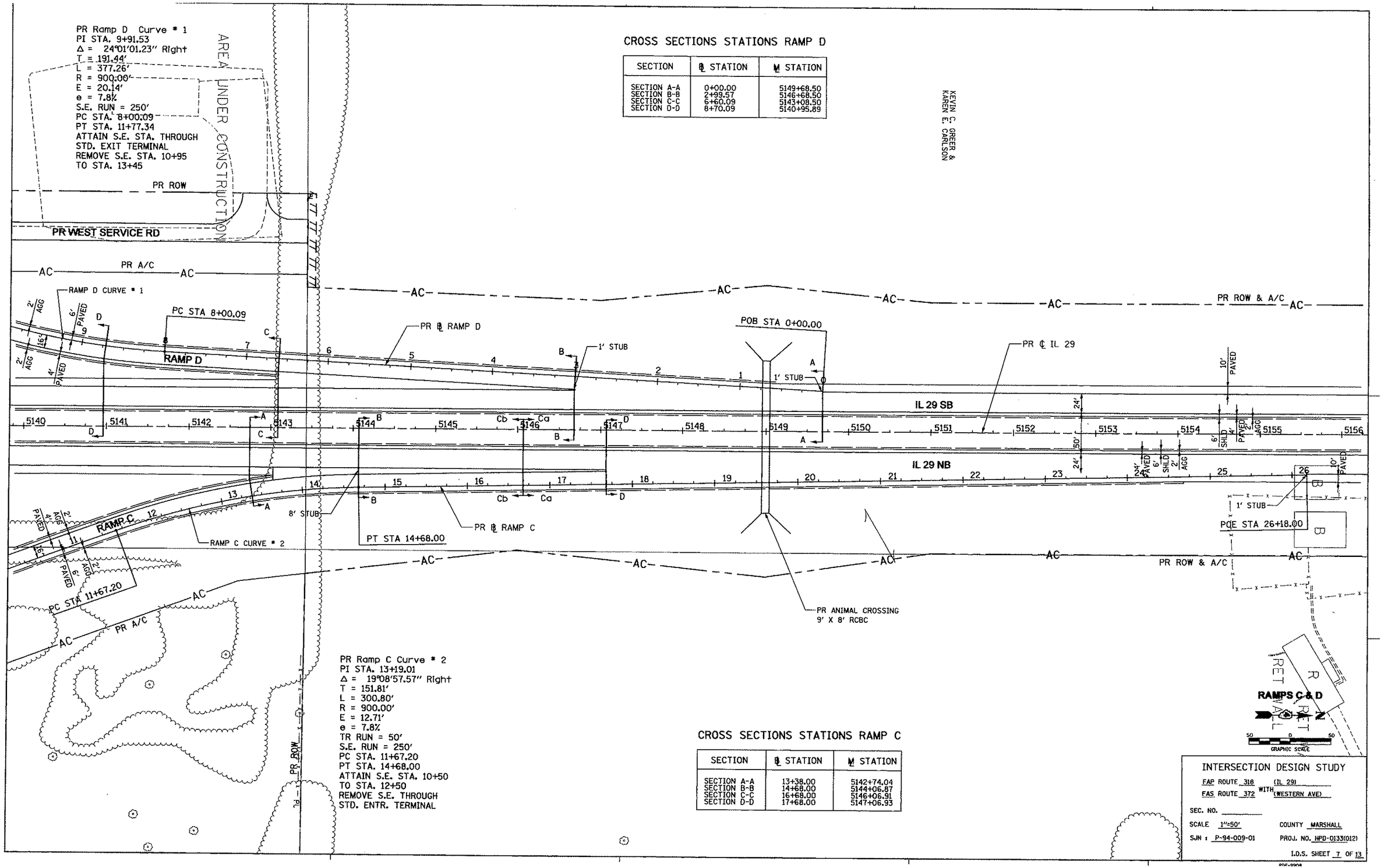
FAP ROUTE 318 (IL 29)
FAS ROUTE 372 WITH (WESTERN AVE)

SEC. NO. _____
SCALE 1"=50'
COUNTY MARSHALL
SJN : P-94-009-01
PROJ. NO. HPD-0133 (012)
I.D.S. SHEET 6 OF 13

PR Ramp D Curve * 1
PI STA. 9+91.53
Δ = 24°01'01.23" Right
T = 191.44'
L = 377.26'
R = 900.00'
E = 20.14'
e = 7.8%
S.E. RUN = 250'
PC STA. 8+00.09
PT STA. 11+77.34
ATTAIN S.E. STA. THROUGH
STD. EXIT TERMINAL
REMOVE S.E. STA. 10+95
TO STA. 13+45

CROSS SECTIONS STATIONS RAMP D

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	5149+68.50
SECTION B-B	2+99.57	5146+68.50
SECTION C-C	6+60.09	5143+08.50
SECTION D-D	8+70.09	5140+95.89



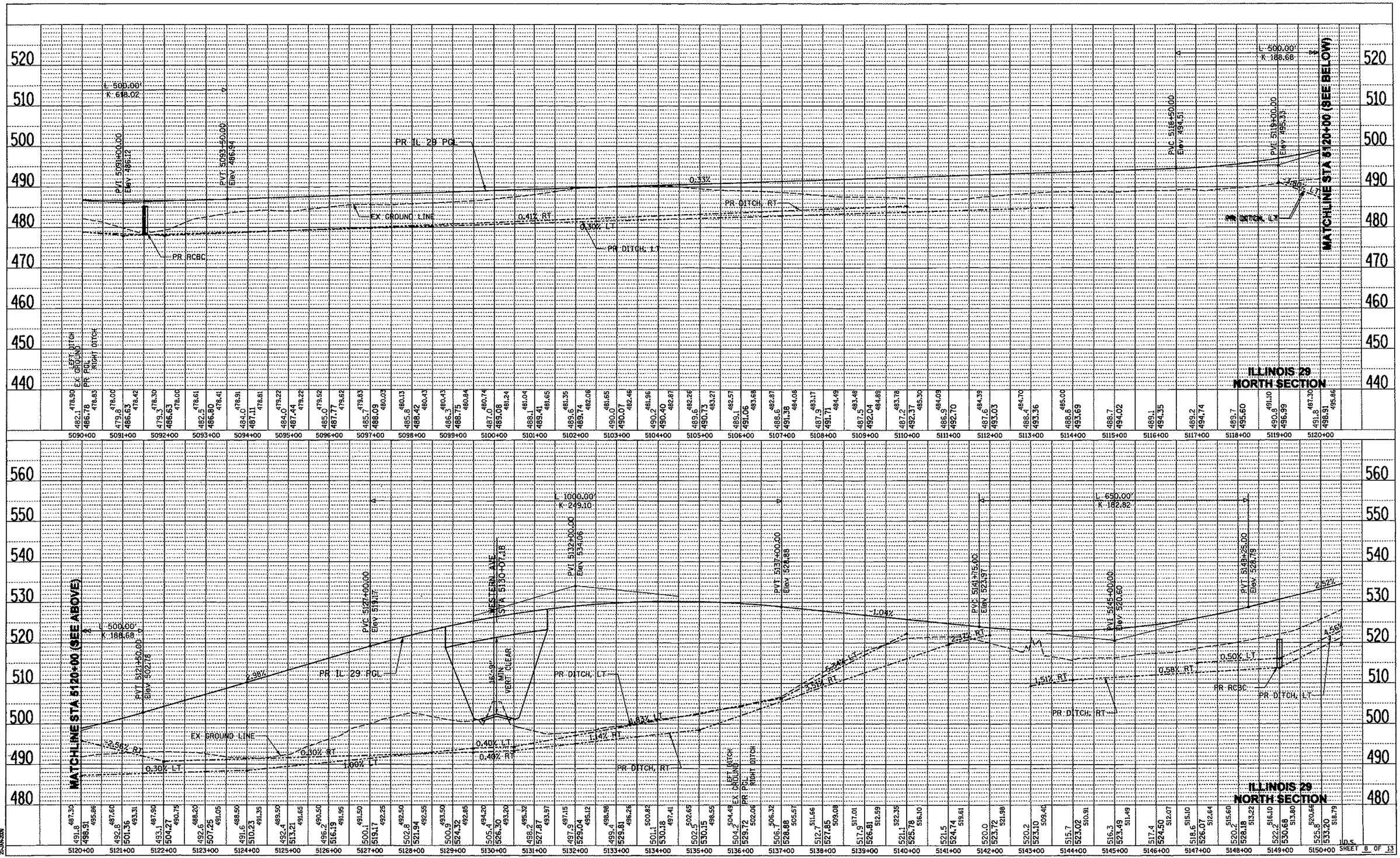
PR Ramp C Curve * 2
PI STA. 13+19.01
Δ = 19°08'57.57" Right
T = 151.81'
L = 300.80'
R = 900.00'
E = 12.71'
e = 7.8%
TR RUN = 50'
S.E. RUN = 250'
PC STA. 11+67.20
PT STA. 14+68.00
ATTAIN S.E. STA. 10+50
TO STA. 12+50
REMOVE S.E. THROUGH
STD. ENTR. TERMINAL

CROSS SECTIONS STATIONS RAMP C

SECTION	℄ STATION	M STATION
SECTION A-A	13+38.00	5142+74.04
SECTION B-B	14+68.00	5144+06.87
SECTION C-C	16+68.00	5146+06.91
SECTION D-D	17+68.00	5147+06.93

KEVIN C. GREER &
KAREN E. CARLSON

INTERSECTION DESIGN STUDY
FAP ROUTE 318 (IL 29)
FAS ROUTE 372 WITH (WESTERN AVE)
SEC. NO.
SCALE 1"=50'
COUNTY MARSHALL
SJN : P-94-009-01
PROJ. NO. HPD-0133(012)
I.D.S. SHEET 7 OF 13



PLAN
NOTE BOOK NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
R.L. OF RAY CHECKED
CADD FILE NAME
BY
DATE

PROFILE
NOTE BOOK NO.
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATIONS CHKD
BY
DATE

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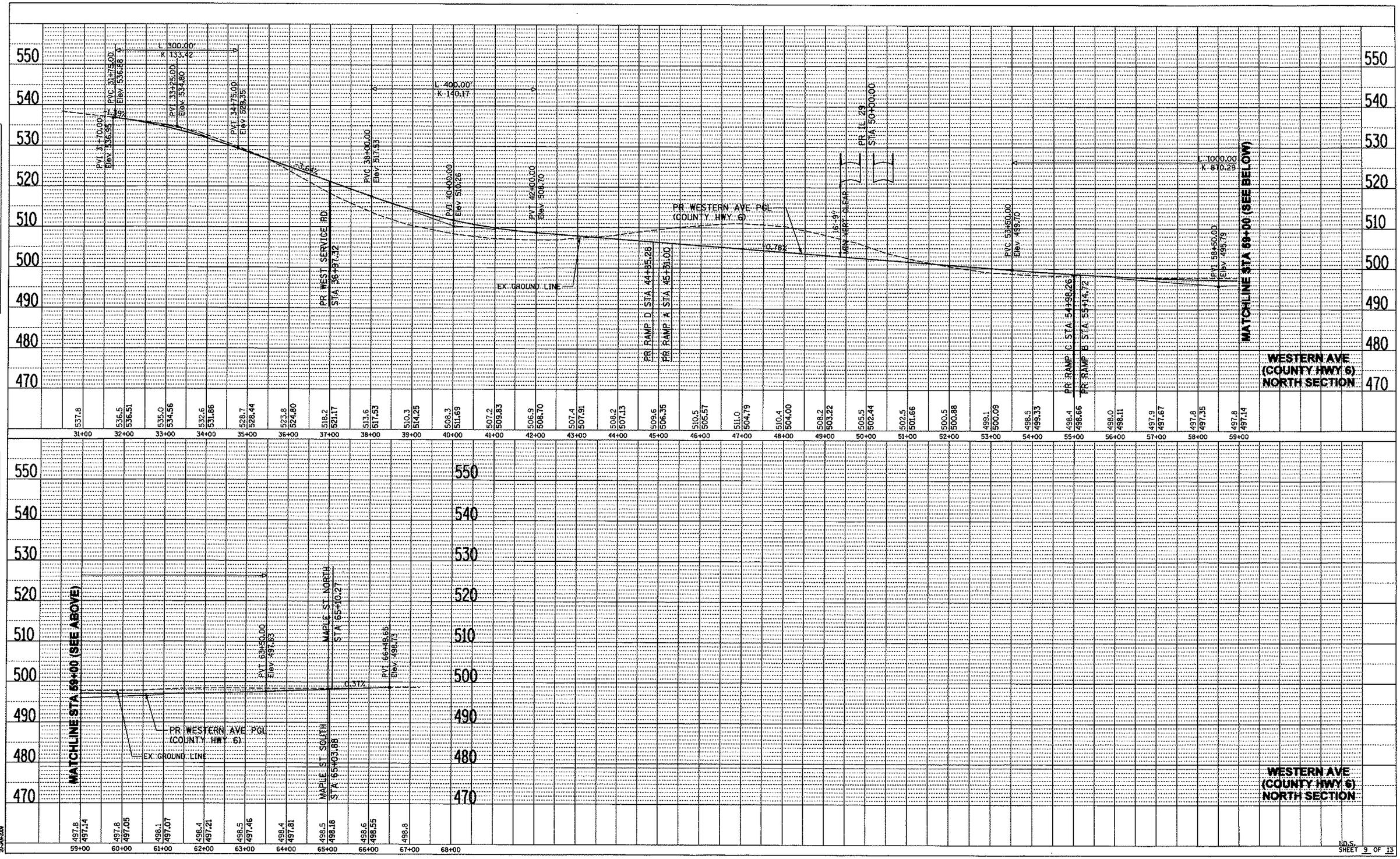
24-JAN-2008

10.S.
SHEET 8 OF 13


PVI 31+70.00
Elev 536.95
PVC 31+75.00
Elev 536.88
K 900.00
L 133.42
PVI 33+25.00
Elev 534.80
PVT 34+75.00
Elev 528.35
L 400.00
K 140.17
PVC 38+00.00
Elev 517.53
PVI 40+00.00
Elev 510.26
PVT 42+00.00
Elev 508.70
PR WESTERN AVE PGL
(COUNTY HWY 6)
0.78%
16.9'
NEW VERT 9.5AR
PR IL 29
STA 50+00.00
PR WEST SERVICE RD
STA 38+97.32
EX GROUND LINE
PR RAMP D STA 44+85.28
PR RAMP A STA 45+51.00
PVC 53+50.00
Elev 499.70
L 1000.00
K 870.29
PVI 58+50.00
Elev 495.79
MATCHLINE STA 58+00 (SEE BELOW)
PR RAMP C STA 54+98.26
PR RAMP B STA 55+14.72
WESTERN AVE
(COUNTY HWY 6)
NORTH SECTION
MATCHLINE STA 59+00 (SEE ABOVE)
PVT 63+50.00
Elev 497.63
MAPLE ST NORTH
STA 65+10.27
PVI 66+48.65
Elev 498.73
0.37%
PR WESTERN AVE PGL
(COUNTY HWY 6)
EX GROUND LINE
MAPLE ST SOUTH
STA 65+03.88
WESTERN AVE
(COUNTY HWY 6)
NORTH SECTION
PLAN
PROFILE
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RIGHT OF WAY PROFILE
CADD FILE NAME
NOTE BOOK
NO.
DATE
BY
STRUCTURE NOTATIONS CHKD
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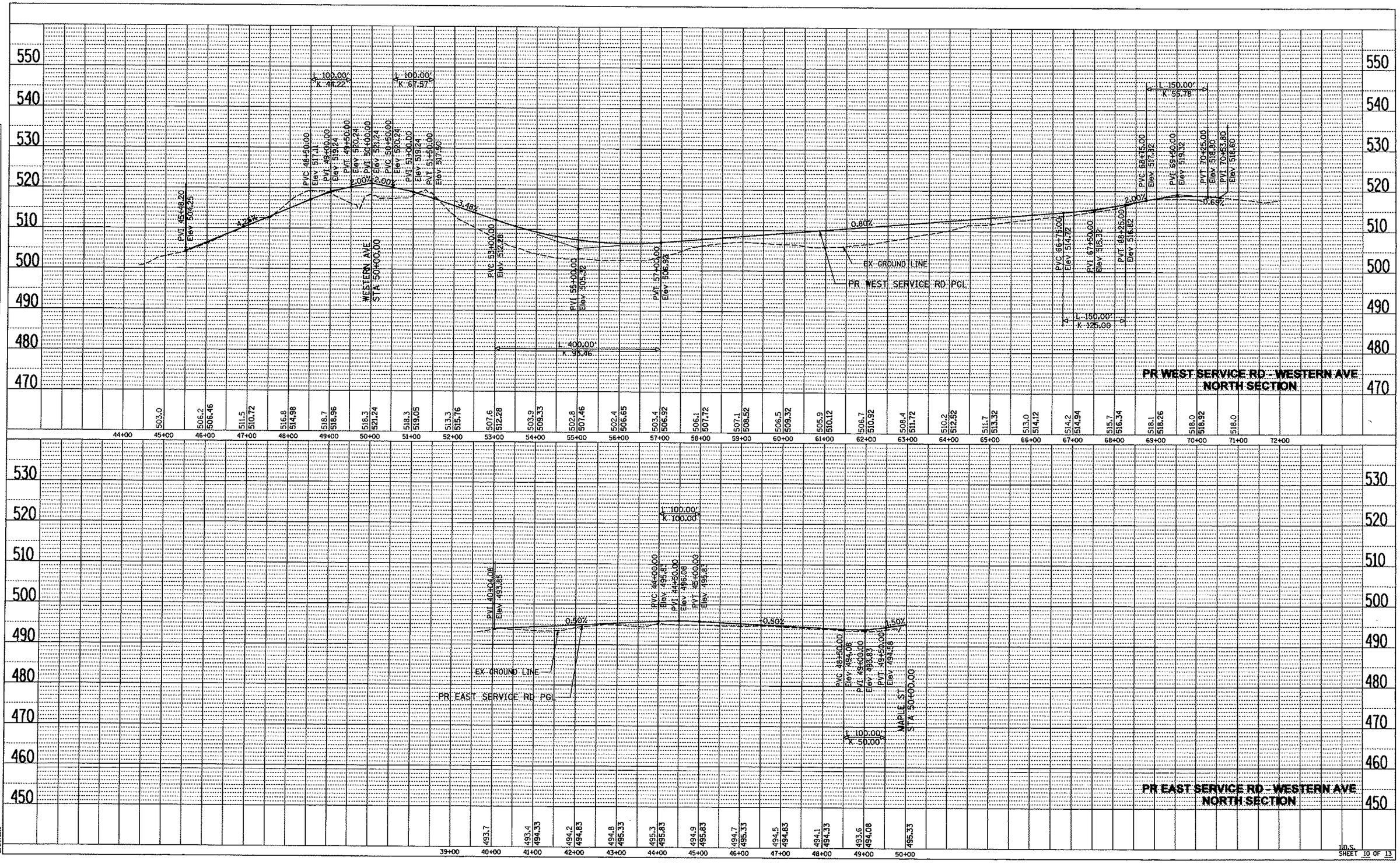

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PLOTTED
ALIGNMENT CHECKED
ALL OF INV. CHECKED
CADD FILE NAME
NOTE BOOK NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
BCAL NOTED
STRUCTURE ADVANTAGE INFO
NOTE BOOK NO.
BY
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2/14/2008

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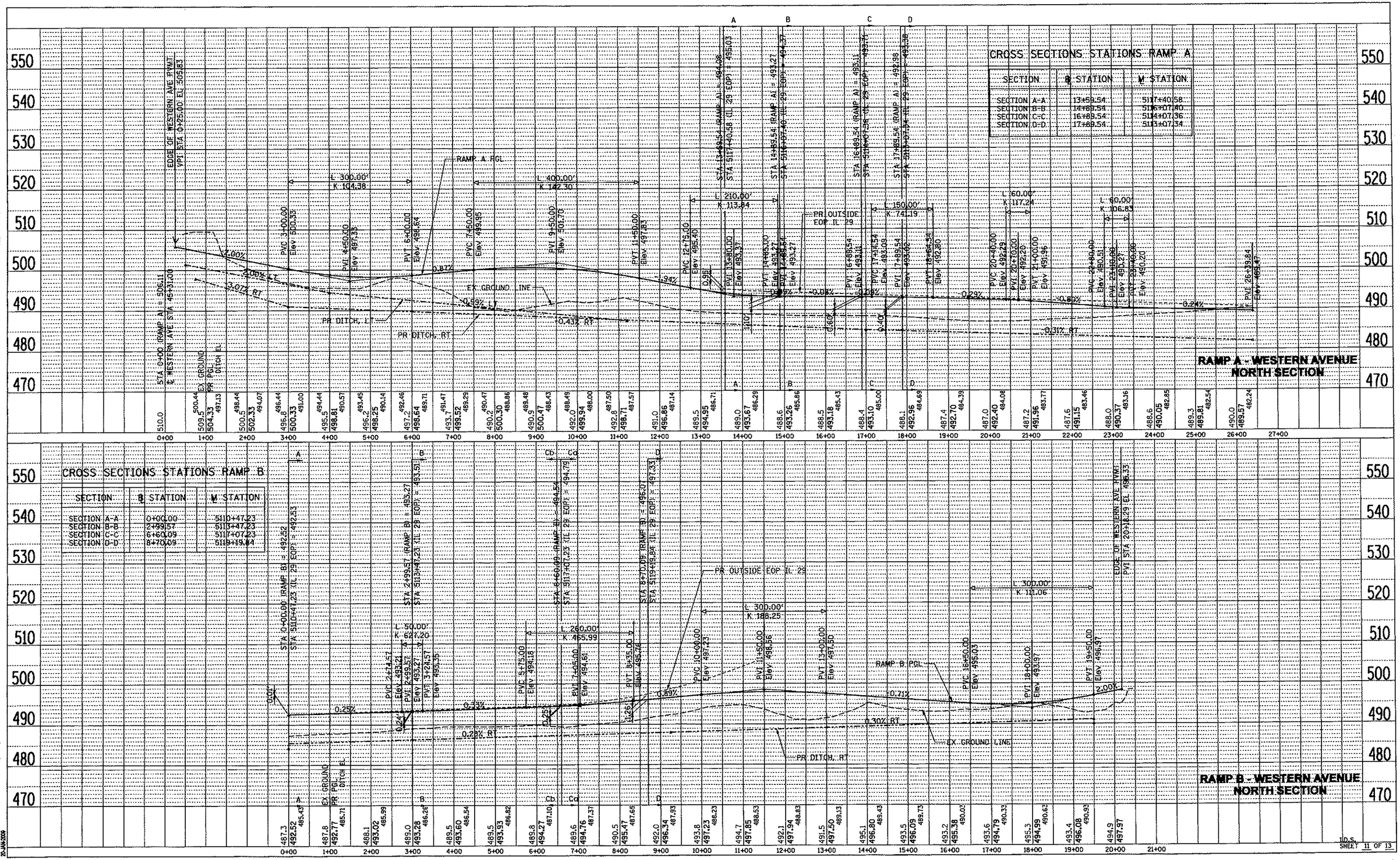
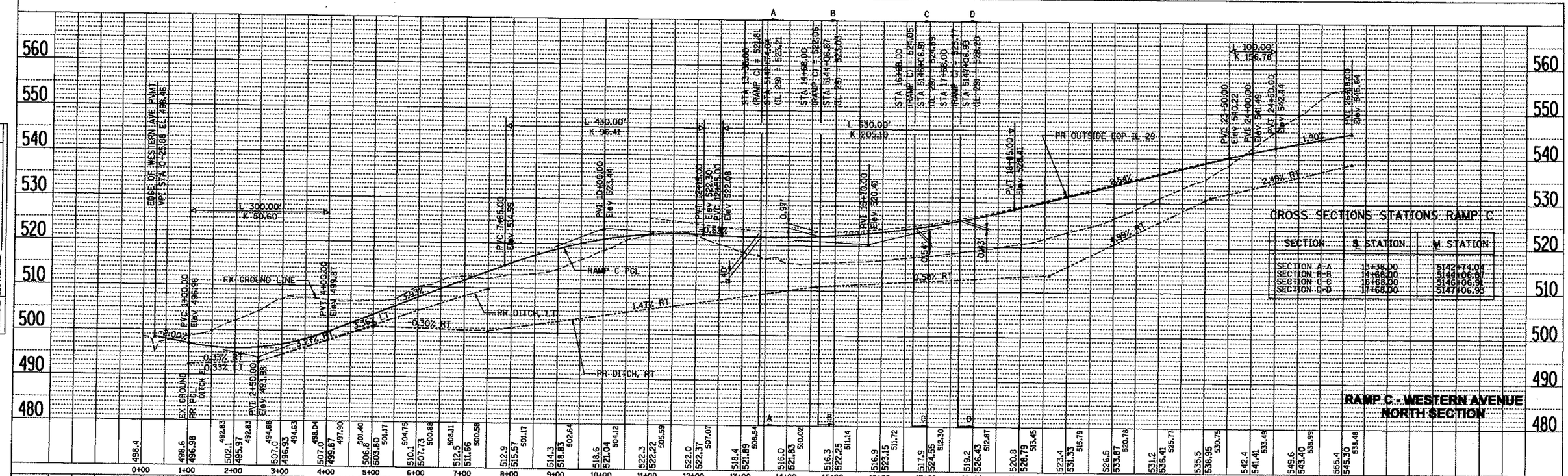
SHEET 10 OF 13


CROSS SECTIONS STATIONS RAMP A
SECTION | B STATION | M STATION
SECTION A-A | 13+89.54 | 5117+40.58
SECTION B-B | 14+89.54 | 5116+07.40
SECTION C-C | 16+89.54 | 5114+07.36
SECTION D-D | 17+89.54 | 5113+07.34
RAMP A - WESTERN AVENUE NORTH SECTION
CROSS SECTIONS STATIONS RAMP B
SECTION | B STATION | M STATION
SECTION A-A | 0+00.00 | 5110+47.23
SECTION B-B | 2+99.57 | 5113+47.23
SECTION C-C | 6+60.09 | 5117+07.23
SECTION D-D | 8+70.09 | 5119+15.84
RAMP B - WESTERN AVENUE NORTH SECTION
EDGE OF WESTERN AVE PVMT
VPI STA 0+25.00 EL 505.83
STA 0+00 (RAMP A) = 506.11
℄ WESTERN AVE STA 4541.00
EX GROUND
PR PGL
DITCH EL
RAMP A PGL
EX GROUND LINE
PR DITCH, LT
PR DITCH, RT
PR OUTSIDE EOP IL 29
RAMP B PGL
EX GROUND LINE
PR DITCH, RT
EDGE OF WESTERN AVE PVMT
PVI STA 20+16.29 EL 496.33
PLAN
PROFILE
SURVEYED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
PLAN FILE MADE
PROFILE FILE MADE
NOTE BOOK
NO.
SHEET 11 OF 13


PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
DTL. & FLD. CHECKED
NOTE BOOK
NO.
BY
DATE
EDGE OF WESTERN AVE PVMT
VPI STA 0+25.88 EL 496.46
L 300.00'
K 50.60
EX GROUND LINE
PVC 1+30.00
Elev 496.98
PVT 1+00.00
Elev 499.87
PVC 2+50.00
Elev 493.88
PVT 2+50.00
Elev 494.68
PVC 7+85.00
Elev 514.98
PVC 10+00.00
Elev 523.44
L 430.00'
K 96.41
PVC 12+15.00
Elev 522.30
PVT 12+55.00
Elev 522.08
PVC 15+70.00
Elev 520.41
L 530.00'
K 205.10
PVC 18+85.00
Elev 528.41
PVC 23+50.00
Elev 510.22
PVT 24+00.00
Elev 501.49
PVC 24+50.00
Elev 502.44
PVT 25+18.00
Elev 505.64
L 100.00'
K 156.76
PR OUTSIDE EOP IL 29
RAMP C PGL
PR DITCH, LT
PR DITCH, RT
EX GROUND
PR PGL
DITCH EL
0.33% RT
0.33% LT
3.97% RT
5.58% LT
0.30% RT
1.47% RT
0.97
1.40
0.54
0.43
0.54% RT
1.49% RT
1.99% RT
1.90%
STA 12+30.00 (RAMP C) = 521.81
STA 13+96.00 (RAMP C) = 522.06
STA 14+96.00 (RAMP C) = 523.21
STA 15+96.00 (RAMP C) = 524.36
STA 16+96.00 (RAMP C) = 525.05
STA 17+96.00 (RAMP C) = 525.77
STA 18+96.00 (RAMP C) = 526.20
STA 5+46.04 (IL 29) = 523.21
STA 5+49.06.87 (IL 29) = 523.03
STA 5+46.30 (IL 29) = 524.49
STA 5+47.46.83 (IL 29) = 526.20
CROSS SECTIONS STATIONS RAMP C
SECTION | B STATION | M STATION
SECTION A-A | 13+38.00 | 5142+74.04
SECTION B-B | 14+68.00 | 5144+06.87
SECTION C-C | 16+68.00 | 5146+06.91
SECTION D-D | 17+68.00 | 5147+06.99
RAMP C - WESTERN AVENUE
NORTH SECTION
PROFILE
SURVEYED
PLOTTED
DESIGNED
BAL. NOTED
STRUCTURE NOTATIONS CHKD
NOTE BOOK
NO.
BY
DATE
STA 0+00.00 (RAMP D) = 532.40 (IL 29) = 532.41
STA 1+65.50 (RAMP D) = 532.41 (IL 29) = 532.41
STA 2+99.57 (RAMP D) = 525.27 (IL 29) = 524.52
STA 3+65.50 (RAMP D) = 524.52
STA 5+60.09 (RAMP D) = 522.83 (IL 29) = 521.07
STA 5+65.50 (RAMP D) = 522.83 (IL 29) = 521.07
STA 8+70.09 (RAMP D) = 523.54 (IL 29) = 524.76
STA 5+40.65.89
L 500.00'
K 170.74
L 430.00'
K 96.97
L 400.00'
K 65.61
PVC 1+53.00
Elev 528.44
PVT 4+03.00
Elev 521.96
PVC 6+53.00
Elev 522.83
PVC 8+68.00
Elev 523.69
PVC 11+00.00
Elev 524.32
PVT 13+15.00
Elev 515.51
PVC 15+00.00
Elev 507.93
PVT 19+00.00
Elev 503.74
PVT 17+00.00
Elev 499.74
EDGE OF WESTERN AVE PVMT
VPI STA 20+19.52 EL 506.13
EX GROUND LINE
PR OUTSIDE EOP IL 29
RAMP D PGL
PR DITCH RT
PR DITCH LT
0.64% RT
0.30% RT
1.38% RT
1.34% RT
4.10%
3.57% LT
1.66% RT
0.50% LT
0.30% RT
2.00%
0.24
1.24
0.38%
0.25
1.59
1.58% RT
9.50% RT
CROSS SECTIONS STATIONS RAMP D
SECTION | B STATION | M STATION
SECTION A-A | 0+00.00 | 5143+68.50
SECTION B-B | 2+99.57 | 5146+68.50
SECTION C-C | 6+60.09 | 5141+08.50
SECTION D-D | 9+70.09 | 5140+95.89
RAMP D - WESTERN AVENUE
NORTH SECTION
EX GROUND
PR PGL
DITCH EL
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Jul 14, 2006
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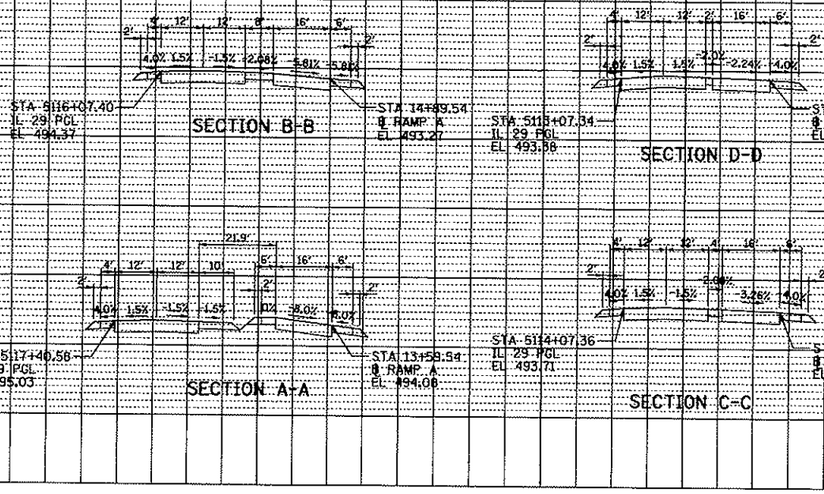
SHEET 12 OF 13

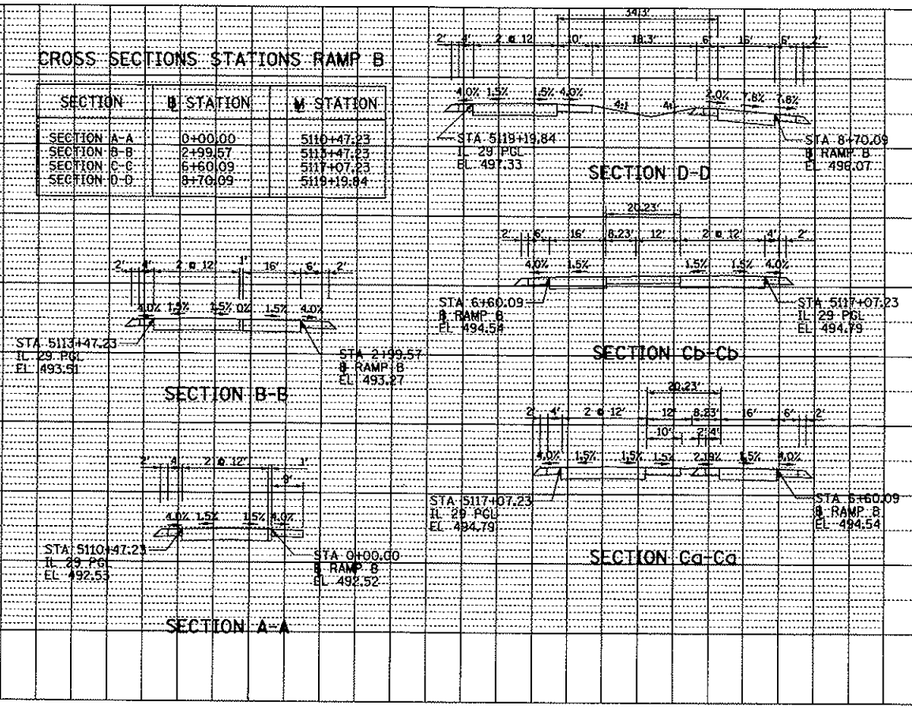
CROSS SECTIONS STATIONS RAMP A

SECTION	℄ STATION	M STATION
SECTION A-A	13+59.54	5117+40.56
SECTION B-B	14+89.54	5116+07.40
SECTION C-C	16+89.54	5114+07.36
SECTION D-D	17+89.54	5113+07.34



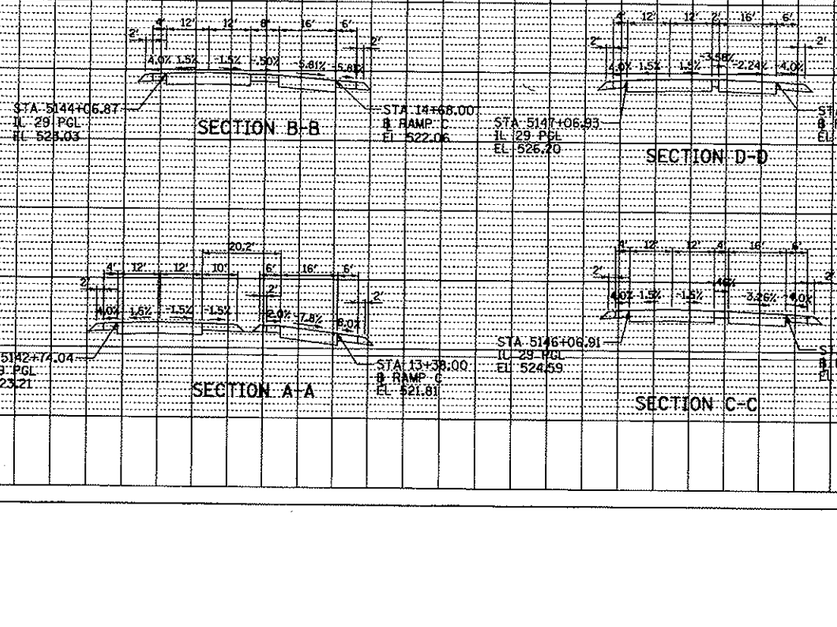
CROSS SECTIONS STATIONS RAMP B

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	5110+47.23
SECTION B-B	2+99.57	5113+47.23
SECTION C-C	6+60.09	5117+07.23
SECTION D-D	8+70.09	5119+19.84



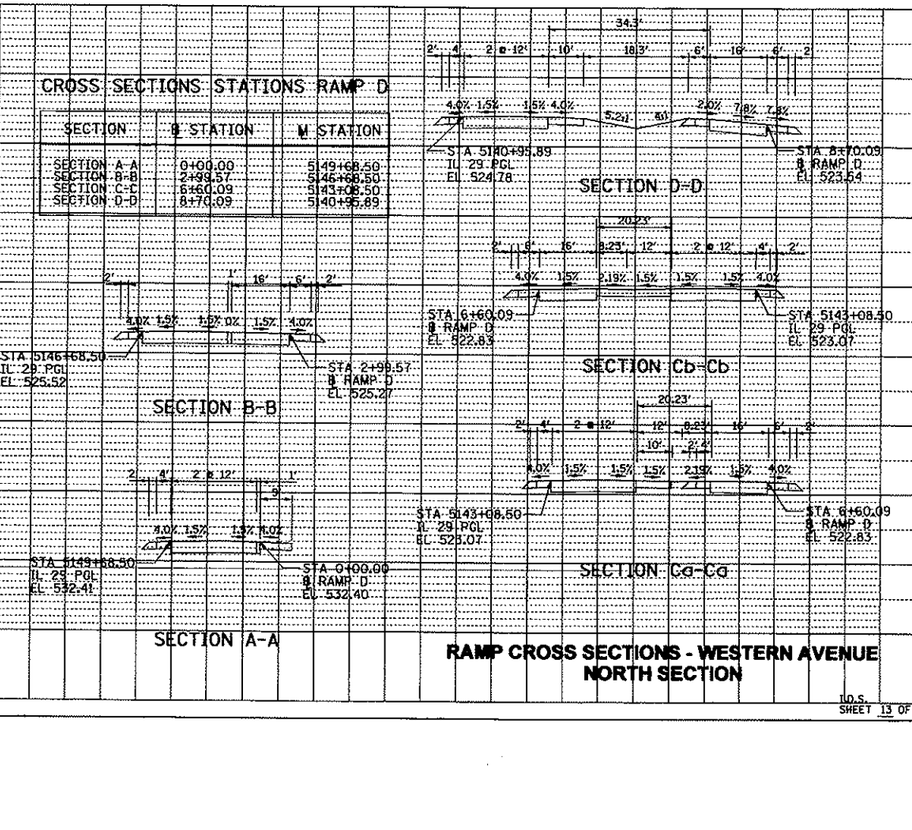
CROSS SECTIONS STATIONS RAMP C

SECTION	℄ STATION	M STATION
SECTION A-A	13+38.00	5142+74.64
SECTION B-B	14+68.00	5144+06.87
SECTION C-C	16+68.00	5146+06.91
SECTION D-D	17+68.00	5147+06.93



CROSS SECTIONS STATIONS RAMP D

SECTION	℄ STATION	M STATION
SECTION A-A	0+00.00	5149+68.50
SECTION B-B	2+99.57	5146+68.50
SECTION C-C	6+60.09	5143+08.50
SECTION D-D	8+70.09	5140+95.89



RAMP CROSS SECTIONS - WESTERN AVENUE NORTH SECTION

I.D.S.
SHEET 13 OF 13

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PROFILE — SURVEYED / PLOTTED / GRADES CHECKED / R/W CHECKED / STRUCTURE NOTATIONS CHKD — NOTE BOOK NO. — DATE

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20-JAN-2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERSECTION DESIGN STUDY
IL 29 /WHITEFIELD ROAD INTERSECTION

PREPARED BY : CH2MHILL

FEBRUARY 2007

Illinois Department of Transportation
CH2MHILL

June 2010
Catalog No. 032469-00P

mfox
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17-MAR-2009

CAPACITY DESIGN STUDY

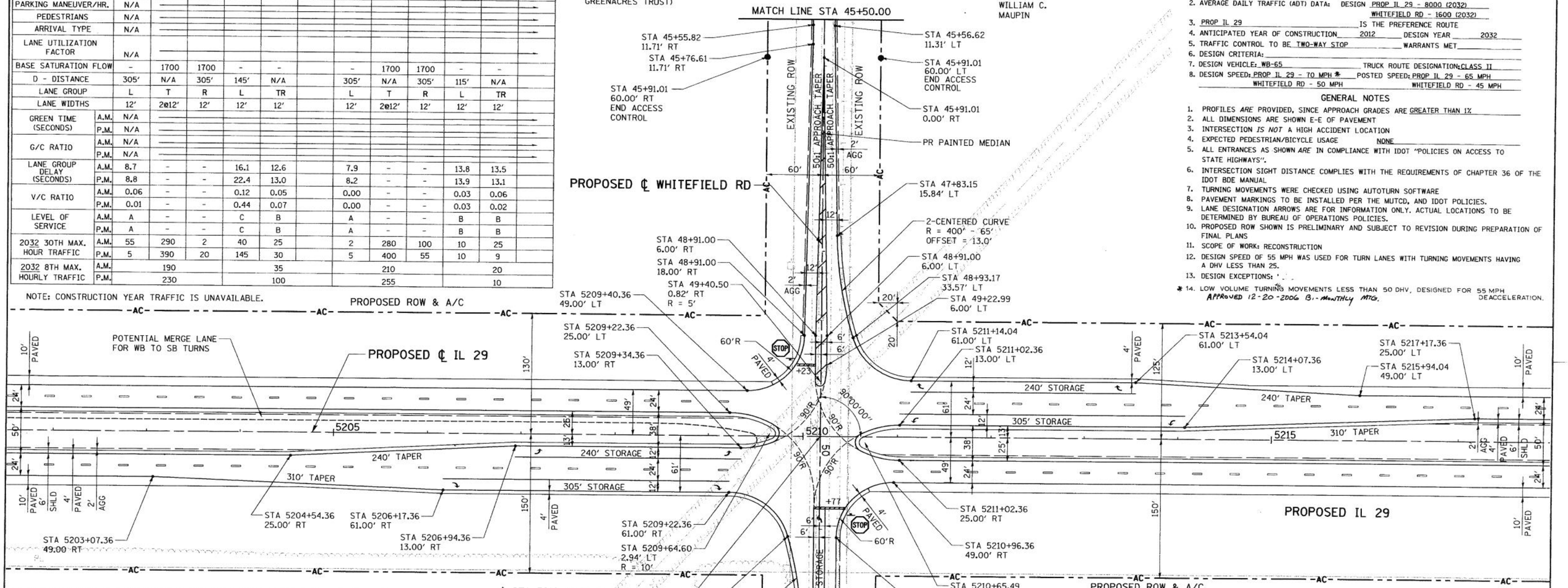
N/A PHASE
N/A SEC. CYCLE
SIGNAL TYPE 2-WAY STOP

AREA OTHER
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS 2000

PEAK HOUR FACTOR 0.90
A.M. – SEC. P.M. – SEC.
INTERSECTION LEVEL OF SERVICE A.M. – P.M. –

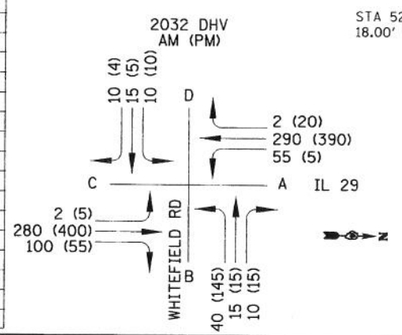
APPROACH		A SOUTHBOUND			B WESTBOUND			C NORTHBOUND			D EASTBOUND		
BUS STOP CONDITION		N/A											
PARKING MANEUVER/HR.		N/A											
PEDESTRIANS		N/A											
ARRIVAL TYPE		N/A											
LANE UTILIZATION FACTOR		N/A											
BASE SATURATION FLOW		–	1700	1700	–	–		–	1700	1700	–	–	
D - DISTANCE		305'	N/A	305'	145'	N/A		305'	N/A	305'	115'	N/A	
LANE GROUP		L	T	R	L	TR		L	T	R	L	TR	
LANE WIDTHS		12'	2@12'	12'	12'	12'		12'	2@12'	12'	12'	12'	
GREEN TIME (SECONDS)	A.M.	N/A											
	P.M.	N/A											
G/C RATIO	A.M.	N/A											
	P.M.	N/A											
LANE GROUP DELAY (SECONDS)	A.M.	8.7	–	–	16.1	12.6		7.9	–	–	13.8	13.5	
	P.M.	8.8	–	–	22.4	13.0		8.2	–	–	13.9	13.1	
V/C RATIO	A.M.	0.06	–	–	0.12	0.05		0.00	–	–	0.03	0.06	
	P.M.	0.01	–	–	0.44	0.07		0.00	–	–	0.03	0.02	
LEVEL OF SERVICE	A.M.	A	–	–	C	B		A	–	–	B	B	
	P.M.	A	–	–	C	B		A	–	–	B	B	
2032 30TH MAX. HOUR TRAFFIC	A.M.	55	290	2	40	25		2	280	100	10	25	
	P.M.	5	390	20	145	30		5	400	55	10	9	
2032 8TH MAX. HOURLY TRAFFIC	A.M.	190			35			210			20		
	P.M.	230			100			255			10		

NOTE: CONSTRUCTION YEAR TRAFFIC IS UNAVAILABLE.



TRAFFIC DATA

MOVEMENT	YEAR 2001 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY 2012	YEAR ____ 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY 2032	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB	10	1	0/0				450/400	55	5
AD	0	0	-				-	2	20
AC	117	134	11/12				148/191	290	390
BA	5	21	20/10				100/-28	10	15
BC	7	23	29/30				471/530	40	145
BD	3	1	33/0				400/1400	15	15
CD	2	11	50/18				0/-54	2	5
CA	101	161	17/10				177/148	280	400
CB	8	8	88/62				1150/588	100	55
DC	11	5	9/20				-9/-20	10	4
DB	0	0	-				-	15	5
DA	0	0	-				-	10	10
TOTAL A	233	317						647	840
TOTAL B	33	54						235	240
TOTAL C	246	342						722	999
TOTAL D	16	17						54	59



SHEET NUMBER

ELEMENTS CONTROLLING DESIGN

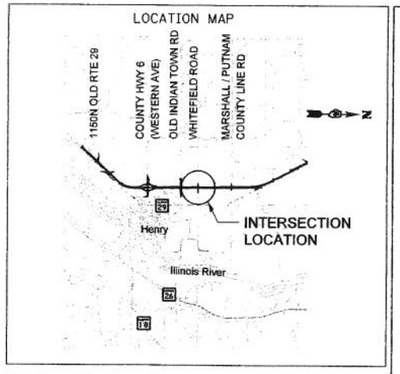
1. HIGHWAY DESIGN CLASSIFICATION FA RTE 318 (IL 29) - PRINCIPAL ARTERIAL
   TR 9A (WHITEFIELD RD) - LOCAL ROAD
   SRA: YES ____ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN PROP IL 29 - 8000 (2032)
   WHITEFIELD RD - 1600 (2032)
3. PROP IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE TWO-WAY STOP WARRANTS MET
6. DESIGN CRITERIA:
7. DESIGN VEHICLE: WB-65 TRUCK ROUTE DESIGNATION: CLASS II
8. DESIGN SPEED: PROP IL 29 - 70 MPH * POSTED SPEED: PROP IL 29 - 65 MPH
   WHITEFIELD RD - 50 MPH WHITEFIELD RD - 45 MPH

GENERAL NOTES

1. PROFILES *ARE* PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT
3. INTERSECTION *IS NOT* A HIGH ACCIDENT LOCATION
4. EXPECTED PEDESTRIAN/BICYCLE USAGE NONE
5. ALL ENTRANCES AS SHOWN *ARE* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
6. INTERSECTION SIGHT DISTANCE COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE IDOT BDE MANUAL
7. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE
8. PAVEMENT MARKINGS TO BE INSTALLED PER THE MUTCD, AND IDOT POLICIES.
9. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY BUREAU OF OPERATIONS POLICIES.
10. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS
11. SCOPE OF WORK: RECONSTRUCTION
12. DESIGN SPEED OF 55 MPH WAS USED FOR TURN LANES WITH TURNING MOVEMENTS HAVING A DHV LESS THAN 25.
13. DESIGN EXCEPTIONS: ' . .

* 14. LOW VOLUME TURNING MOVEMENTS LESS THAN 50 DHV, DESIGNED FOR 55 MPH DEACCELERATION.
APPROVED 12-20-2006 BI-MONTHLY MTG.

LOCATION MAP



P-12 123-22

INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29) WITH
TR ROUTE 9A (WHITEFIELD RD)

SEC. NO. ____ PROJ. NO. HPD-0133 (012)
SCALE 1" = 50' COUNTY MARSHALL
SJN : P-94-009-01 REV. NO. ____

DESIGNED BY B. GANNIS CH2MHILL DATE 09/06
SATISFACTORY DISTRICT GEOMETRICS ENGINEER DATE 11-2-06
SATISFACTORY DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE 11-3-06
SATISFACTORY DISTRICT OPERATIONS ENGINEER DATE 11/6/06
APPROVED DISTRICT ENGINEER DATE 11/9/06

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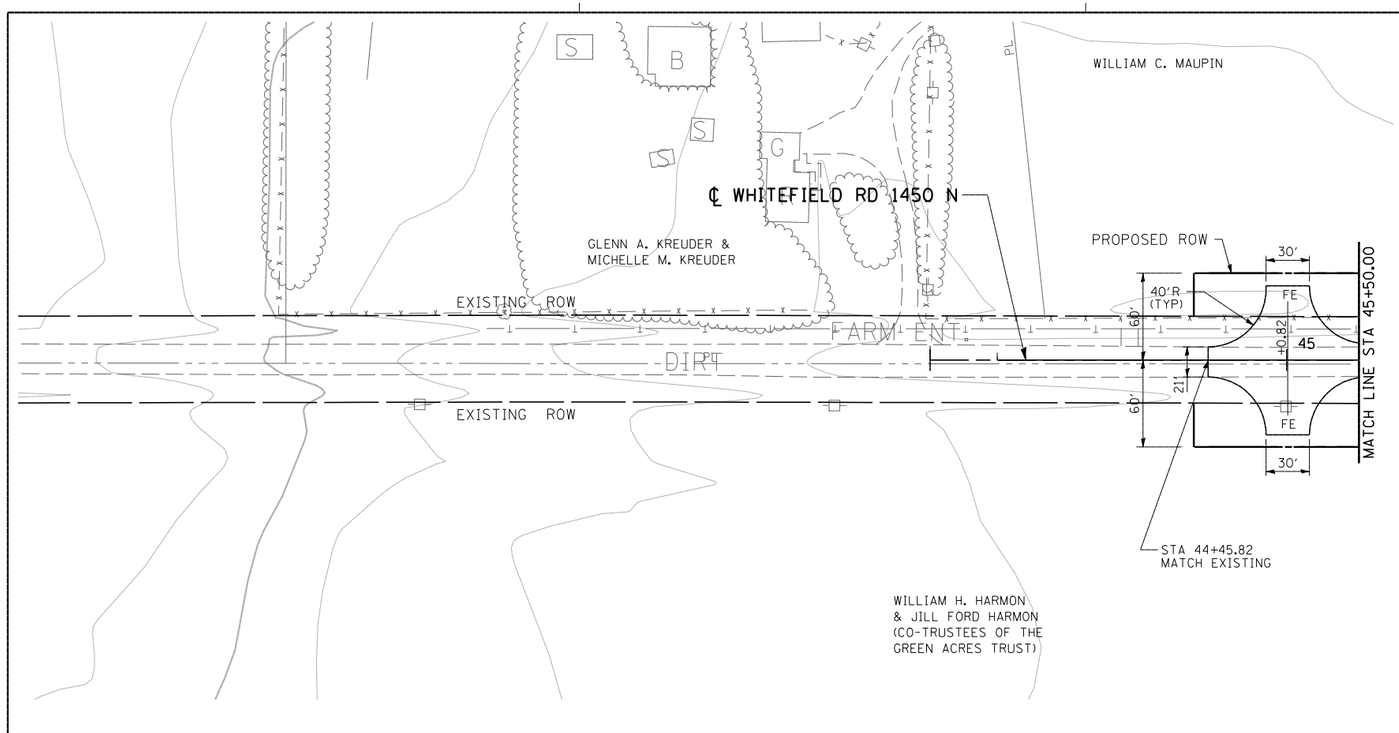

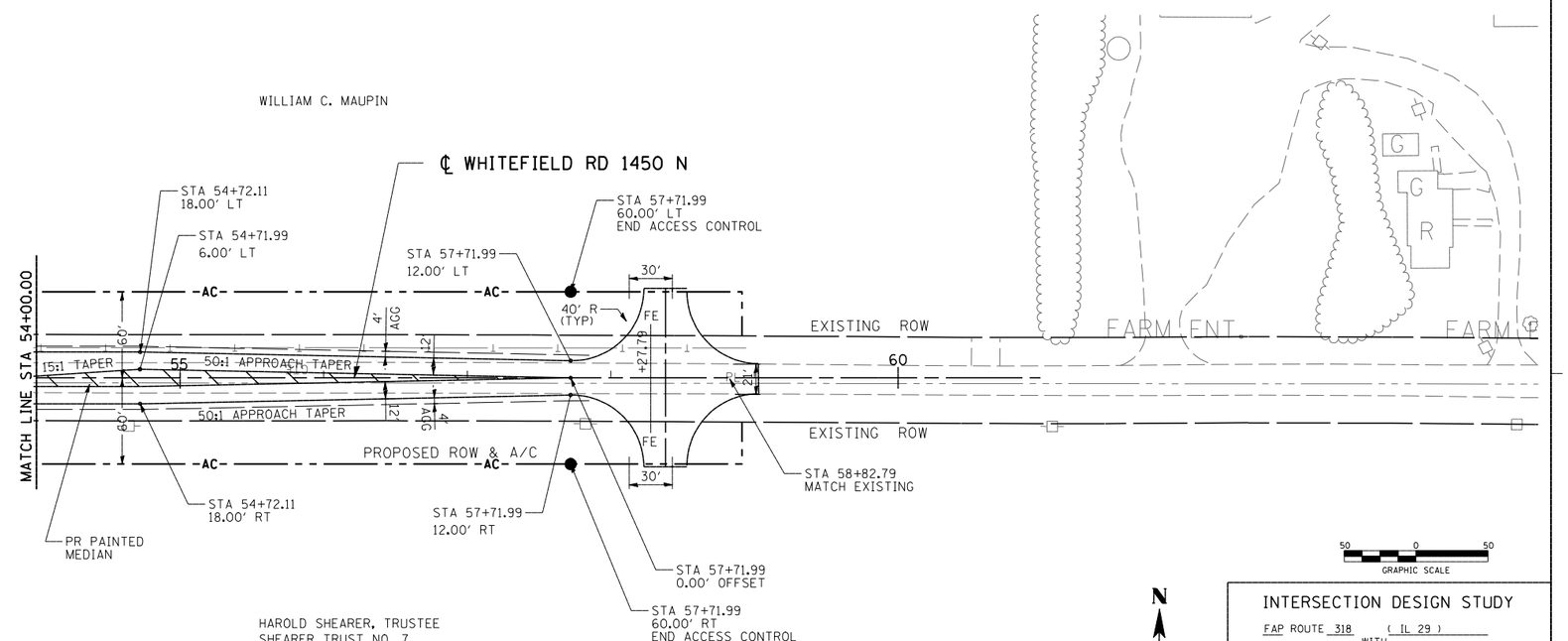

INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29)
TR ROUTE 9A WITH (WHITEFIELD RD)

SEC. NO. _____

SCALE 1"=50' COUNTY MARSHALL

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

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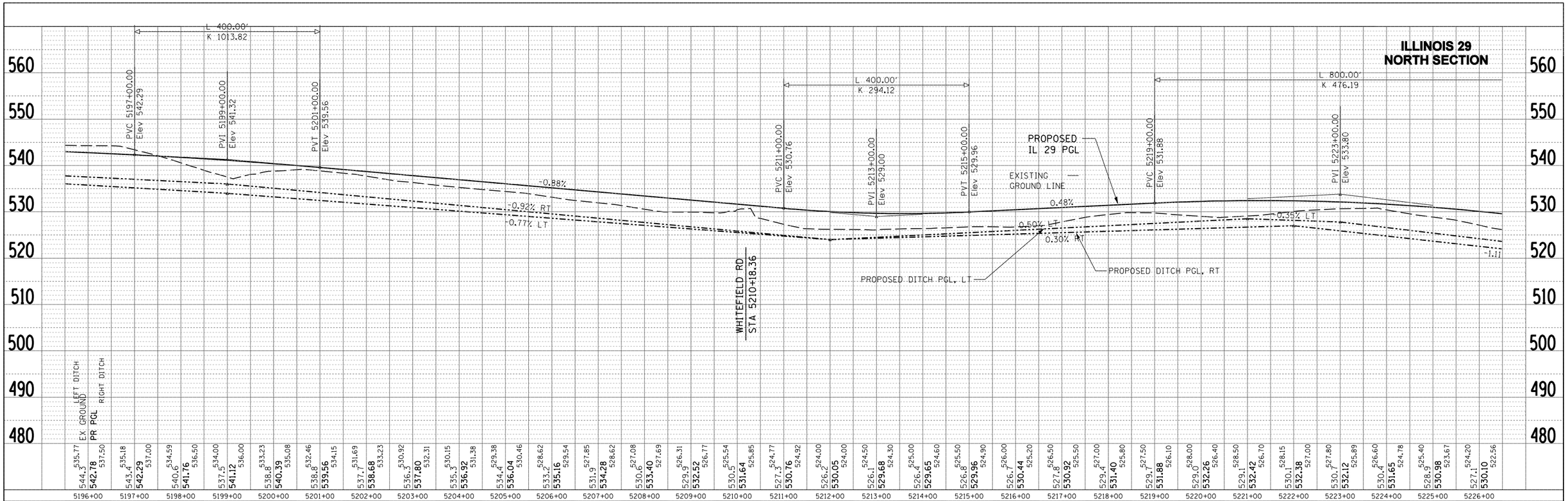

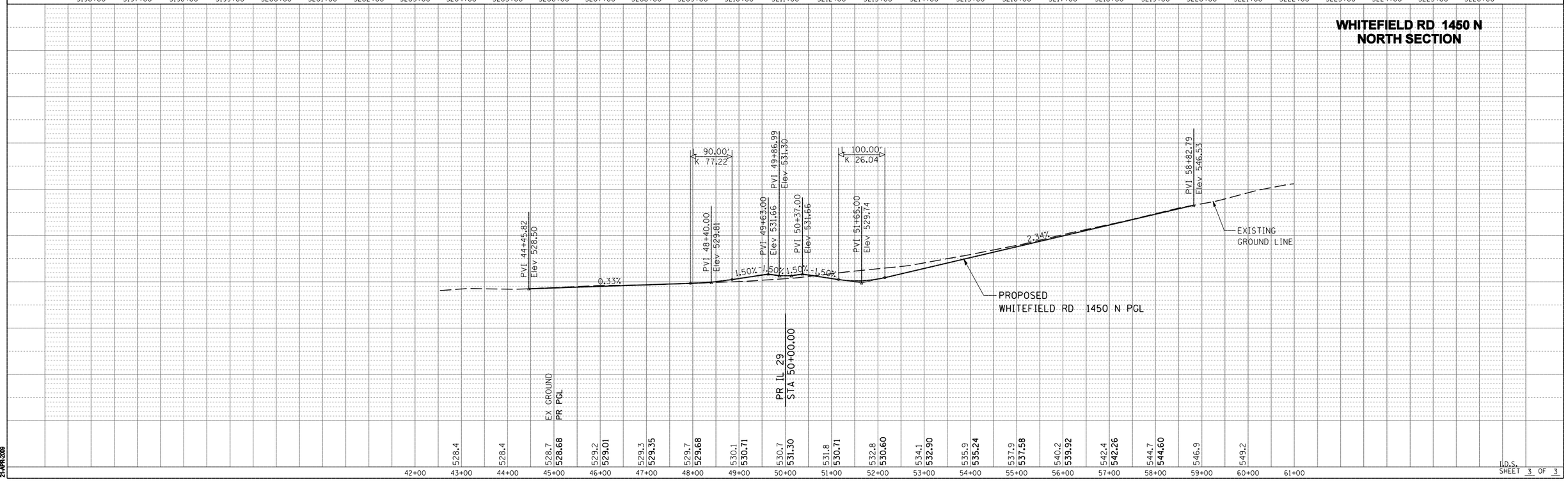

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P.O.D. TILE NAME	

NOTE BOOK NO.

BY	DATE

PROFILE

SURVEYED	DATE
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GRADES CHECKED	
B.M. NOTED	
STRUCTURE NOTATNS CH'KD	

NOTE BOOK NO.

BY	DATE

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERSECTION DESIGN STUDY
IL 29 /MARSHALL /PUTNAM COUNTY LINE ROAD INTERSECTION

PREPARED BY : CH2MHILL

OCTOBER 2007

Illinois Department of Transportation
CH2MHILL

June 2010
Catalog No. 032469-00P

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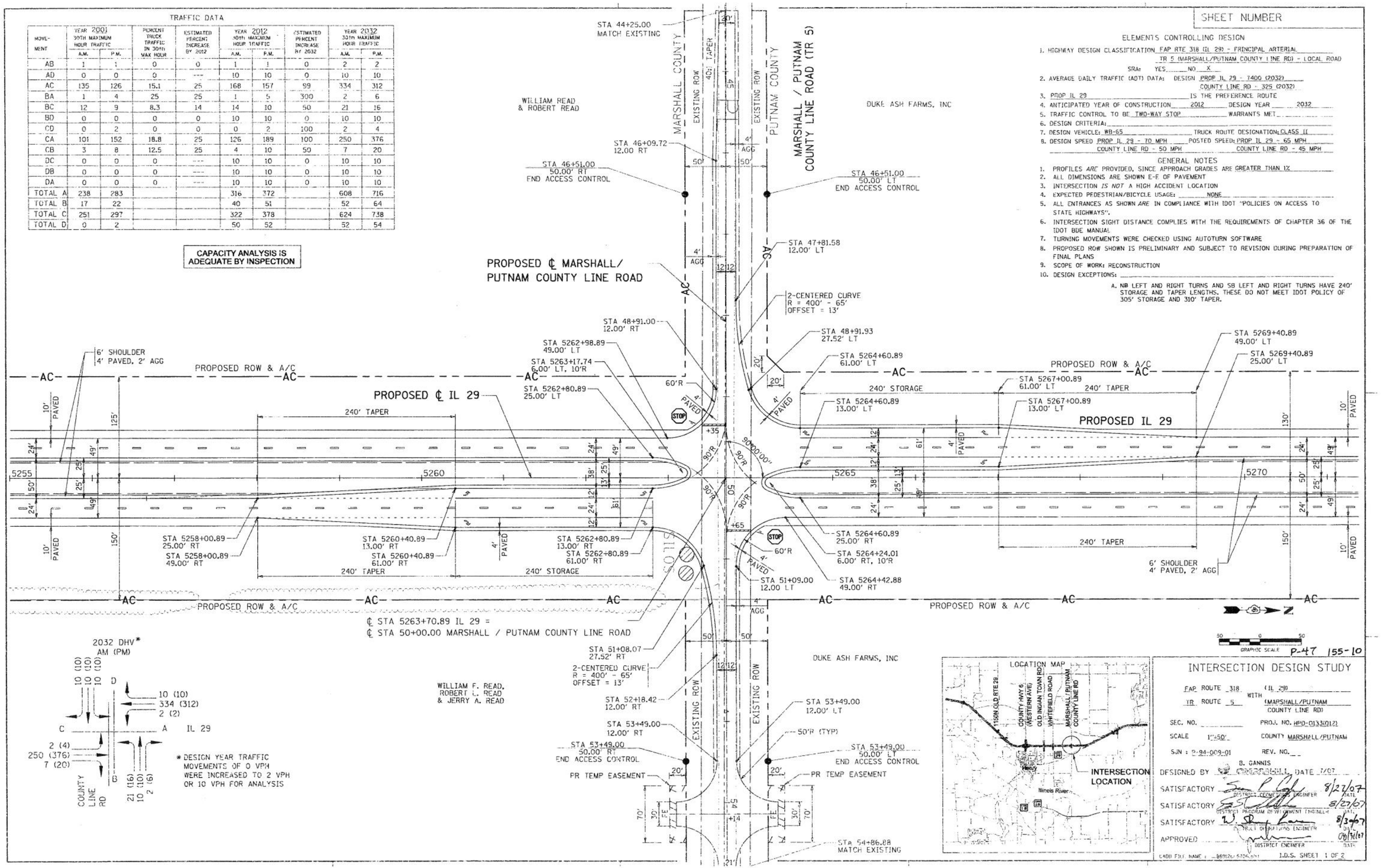
17-MAR-2009

TRAFFIC DATA

MOVEMENT	YEAR 2001 30TH MAXIMUM HOUR TRAFFIC A.M.	YEAR 2001 30TH MAXIMUM HOUR TRAFFIC P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY 2012	YEAR 2012 30th MAXIMUM HOUR TRAFFIC A.M.	YEAR 2012 30th MAXIMUM HOUR TRAFFIC P.M.	ESTIMATED PERCENT INCREASE BY 2032	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	YEAR 2032 30th MAXIMUM HOUR TRAFFIC P.M.
AB	1	1	0	0	1	1	0	2	2
AD	0	0	0	---	10	10	0	10	10
AC	135	126	15.1	25	168	157	99	334	312
BA	1	4	25	25	1	5	300	2	6
BC	12	9	8.3	14	14	10	50	21	15
BD	0	0	0	0	10	10	0	10	10
CD	0	2	0	0	0	2	100	2	4
CA	101	152	18.8	25	126	189	100	250	376
CB	3	8	12.5	25	4	10	50	7	20
DC	0	0	0	---	10	10	0	10	10
DB	0	0	0	---	10	10	0	10	10
DA	0	0	0	---	10	10	0	10	10
TOTAL A	238	283			316	372		608	716
TOTAL B	17	22			40	51		52	64
TOTAL C	251	297			322	378		624	738
TOTAL D	0	2			50	52		52	54

CAPACITY ANALYSIS IS ADEQUATE BY INSPECTION



P-47 155-10

SHEET NUMBER

ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION FAP RTE 318 (IL 29) - PRINCIPAL ARTERIAL
   TR 5 (MARSHALL/PUTNAM COUNTY LINE RD) - LOCAL ROAD
   SRA: YES___ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN PROP IL 29 - 7400 (2032)
   COUNTY LINE RD - 325 (2032)
3. PROP IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE TWO-WAY STOP WARRANTS MET
6. DESIGN CRITERIA:
7. DESIGN VEHICLE: WB-65 TRUCK ROUTE DESIGNATION: CLASS II
8. DESIGN SPEED PROP IL 29 - 70 MPH POSTED SPEED: PROP IL 29 - 65 MPH
   COUNTY LINE RD - 50 MPH COUNTY LINE RD - 45 MPH

GENERAL NOTES

1. PROFILES *ARE* PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT
3. INTERSECTION *IS NOT* A HIGH ACCIDENT LOCATION
4. EXPECTED PEDESTRIAN/BICYCLE USAGE: NONE
5. ALL ENTRANCES AS SHOWN *ARE* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
6. INTERSECTION SIGHT DISTANCE COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE IDOT BDE MANUAL
7. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE
8. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS
9. SCOPE OF WORK: RECONSTRUCTION
10. DESIGN EXCEPTIONS:

A. NB LEFT AND RIGHT TURNS AND SB LEFT AND RIGHT TURNS HAVE 240' STORAGE AND TAPER LENGTHS. THESE DO NOT MEET IDOT POLICY OF 305' STORAGE AND 310' TAPER.

INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29) WITH TR ROUTE 5 (MARSHALL/PUTNAM COUNTY LINE RD)

SEC. NO. ___ PROJ. NO. HPD-0133(012)

SCALE 1"=50' COUNTY MARSHALL/PUTNAM

SJN : 2-94-009-01 REV. NO. __

DESIGNED BY B. GANNIS DATE 7/07

SATISFACTORY DISTRICT GEOMETRICS ENGINEER 8/27/07

SATISFACTORY DISTRICT PROGRAM DEVELOPMENT ENGINEER 8/27/07

SATISFACTORY DISTRICT OPERATIONS ENGINEER 8/30/07

APPROVED DISTRICT ENGINEER 09/31/07

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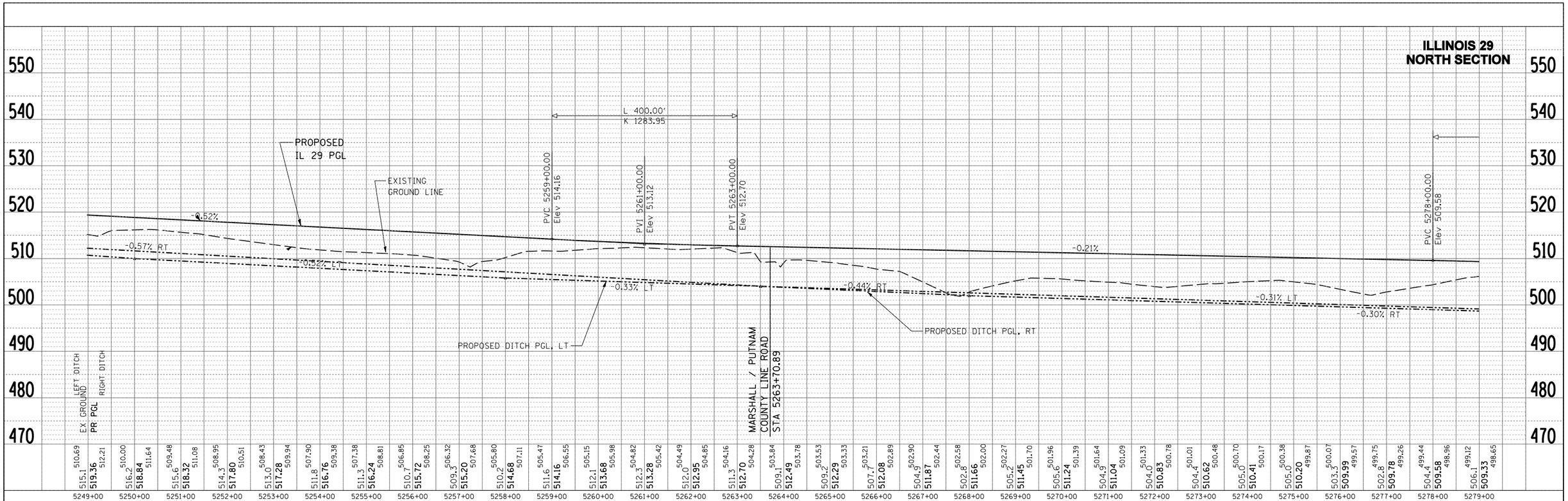

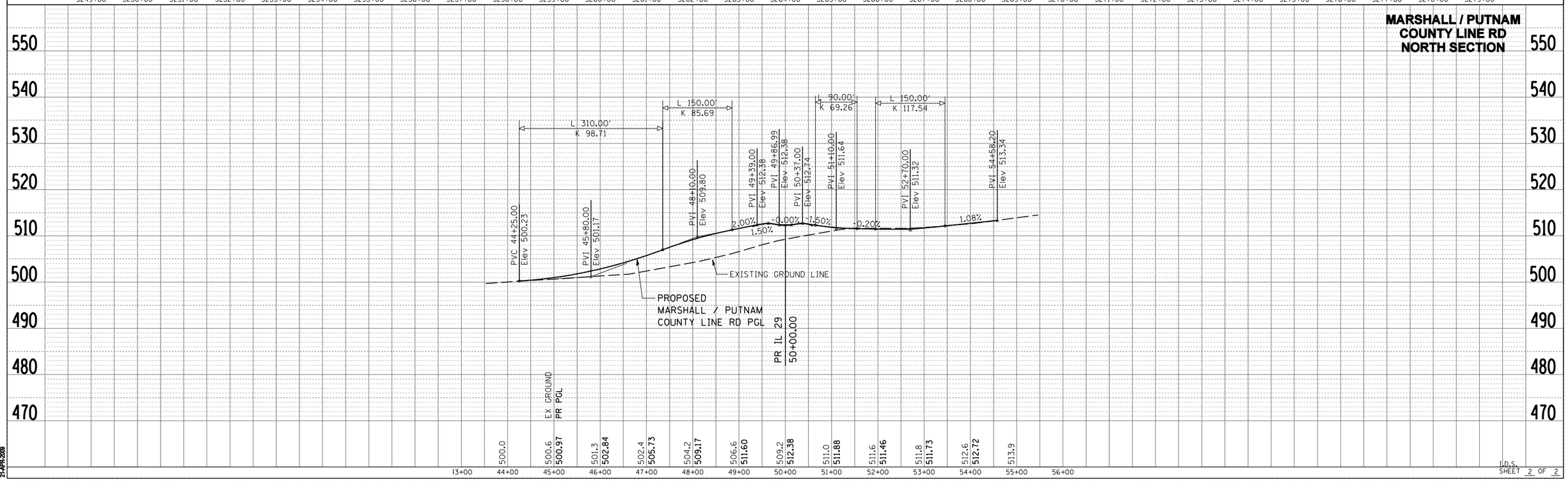

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GRADES CHECKED
S.M. NOTED
STRUCTURE NOTATIONS CH'KD
NOTE BOOK
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DATE

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21-APR-2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERSECTION DESIGN STUDY
IL 29 /PROPOSED CONNECTION TO OLD IL 29 (NORTH OF HENRY) INTERSECTION

PREPARED BY : CH2MHILL

MARCH 2007

Illinois Department of Transportation

CH2MHILL

June 2010
Catalog No. 032469-00P

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17-MAR-2009

SHEET NUMBER

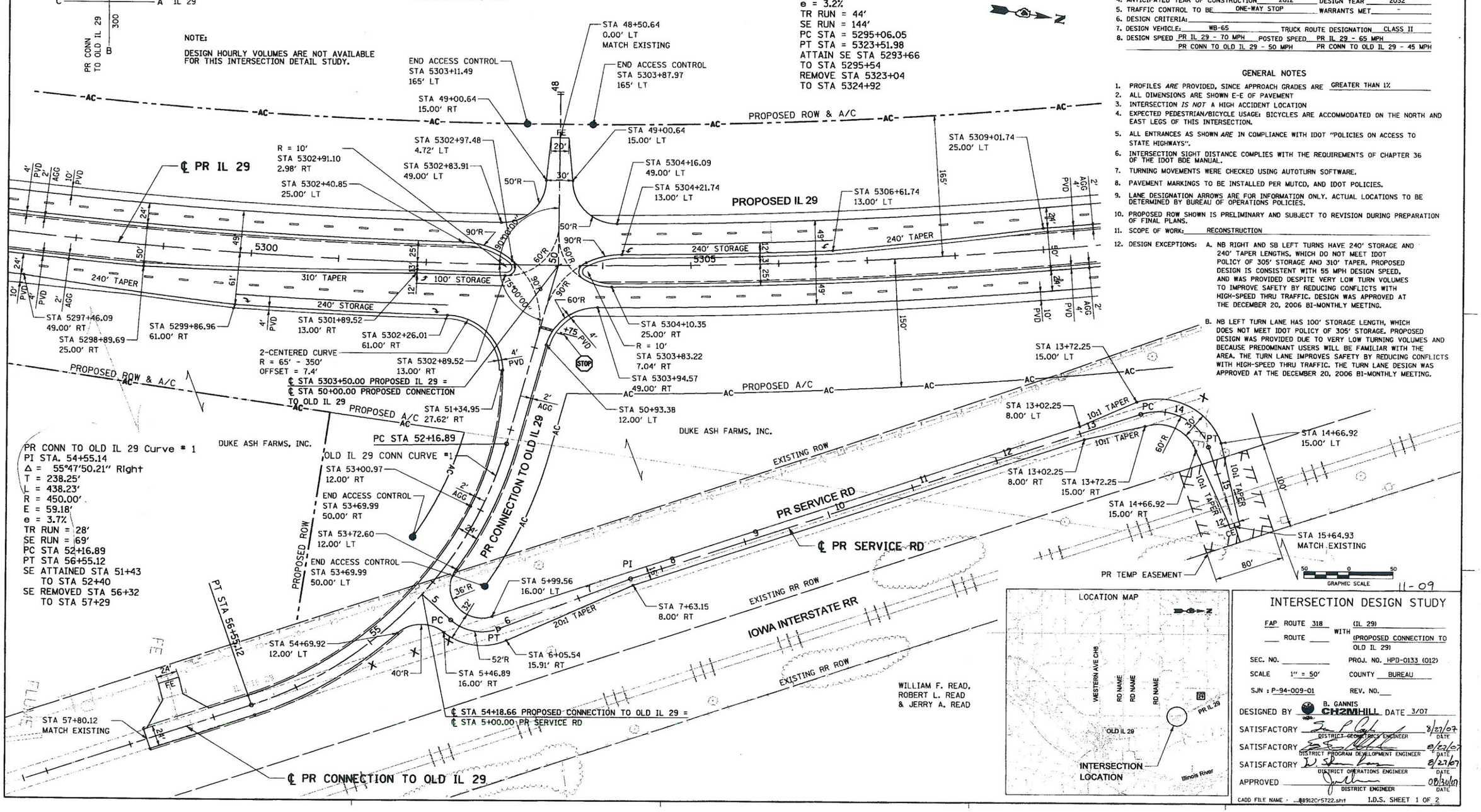
2032 ADT

D
C 7400 7700 A IL 29
300
B
PR CONN TO OLD IL 29

NOTE:

DESIGN HOURLY VOLUMES ARE NOT AVAILABLE FOR THIS INTERSECTION DETAIL STUDY.

PR IL 29 Curve # 2-51
PI STA. 5309+56.31
Δ = 27°10'36.12" Left
T = 1450.26'
L = 2845.94'
R = 6000.00'
E = 172.78'
e = 3.2%
TR RUN = 44'
SE RUN = 144'
PC STA = 5295+06.05
PT STA = 5323+51.98
ATTAIN SE STA 5293+66
TO STA 5295+54
REMOVE STA 5323+04
TO STA 5324+92



ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION FAP ROUTE 318 (IL 29) - PRINCIPAL ARTERIAL
   PR CONNECTION TO OLD IL 29 - LOCAL RD
   SRA: YES ____ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN PR IL 29 - 7700 (2032)
   DESIGN PR CONN TO OLD IL 29 - 300 (2032)
3. PROPOSED IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE ONE-WAY STOP WARRANTS MET -
6. DESIGN CRITERIA: ____
7. DESIGN VEHICLE: WB-65 TRUCK ROUTE DESIGNATION CLASS II
8. DESIGN SPEED PR IL 29 - 70 MPH POSTED SPEED PR IL 29 - 65 MPH
   PR CONN TO OLD IL 29 - 50 MPH PR CONN TO OLD IL 29 - 45 MPH

GENERAL NOTES

1. PROFILES *ARE* PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT
3. INTERSECTION *IS NOT* A HIGH ACCIDENT LOCATION
4. EXPECTED PEDESTRIAN/BICYCLE USAGE: BICYCLES ARE ACCOMMODATED ON THE NORTH AND EAST LEGS OF THIS INTERSECTION.
5. ALL ENTRANCES AS SHOWN *ARE* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
6. INTERSECTION SIGHT DISTANCE COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE IDOT BDE MANUAL.
7. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE.
8. PAVEMENT MARKINGS TO BE INSTALLED PER MUTCD, AND IDOT POLICIES.
9. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY BUREAU OF OPERATIONS POLICIES.
10. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS.
11. SCOPE OF WORK: RECONSTRUCTION
12. DESIGN EXCEPTIONS:
    A. NB RIGHT AND SB LEFT TURNS HAVE 240' STORAGE AND 240' TAPER LENGTHS, WHICH DO NOT MEET IDOT POLICY OF 305' STORAGE AND 310' TAPER. PROPOSED DESIGN IS CONSISTENT WITH 55 MPH DESIGN SPEED, AND WAS PROVIDED DESPITE VERY LOW TURN VOLUMES TO IMPROVE SAFETY BY REDUCING CONFLICTS WITH HIGH-SPEED THRU TRAFFIC. DESIGN WAS APPROVED AT THE DECEMBER 20, 2006 BI-MONTHLY MEETING.
    B. NB LEFT TURN LANE HAS 100' STORAGE LENGTH, WHICH DOES NOT MEET IDOT POLICY OF 305' STORAGE. PROPOSED DESIGN WAS PROVIDED DUE TO VERY LOW TURNING VOLUMES AND BECAUSE PREDOMINANT USERS WILL BE FAMILIAR WITH THE AREA. THE TURN LANE IMPROVES SAFETY BY REDUCING CONFLICTS WITH HIGH-SPEED THRU TRAFFIC. THE TURN LANE DESIGN WAS APPROVED AT THE DECEMBER 20, 2006 BI-MONTHLY MEETING.

11-09

LOCATION MAP

INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29) WITH ___ ROUTE ___ (PROPOSED CONNECTION TO OLD IL 29)
SEC. NO. ____ PROJ. NO. HPD-0133 (012)
SCALE 1" = 50' COUNTY BUREAU
SJN : P-94-009-01 REV. NO. ___

DESIGNED BY B. GANNIS CH2MHILL DATE 3/07
SATISFACTORY DISTRICT GEOMETRICS ENGINEER 8/27/07 DATE
SATISFACTORY DISTRICT PROGRAM DEVELOPMENT ENGINEER 8/27/07 DATE
SATISFACTORY DISTRICT OPERATIONS ENGINEER 8/27/07 DATE
APPROVED DISTRICT ENGINEER 08/30/07 DATE

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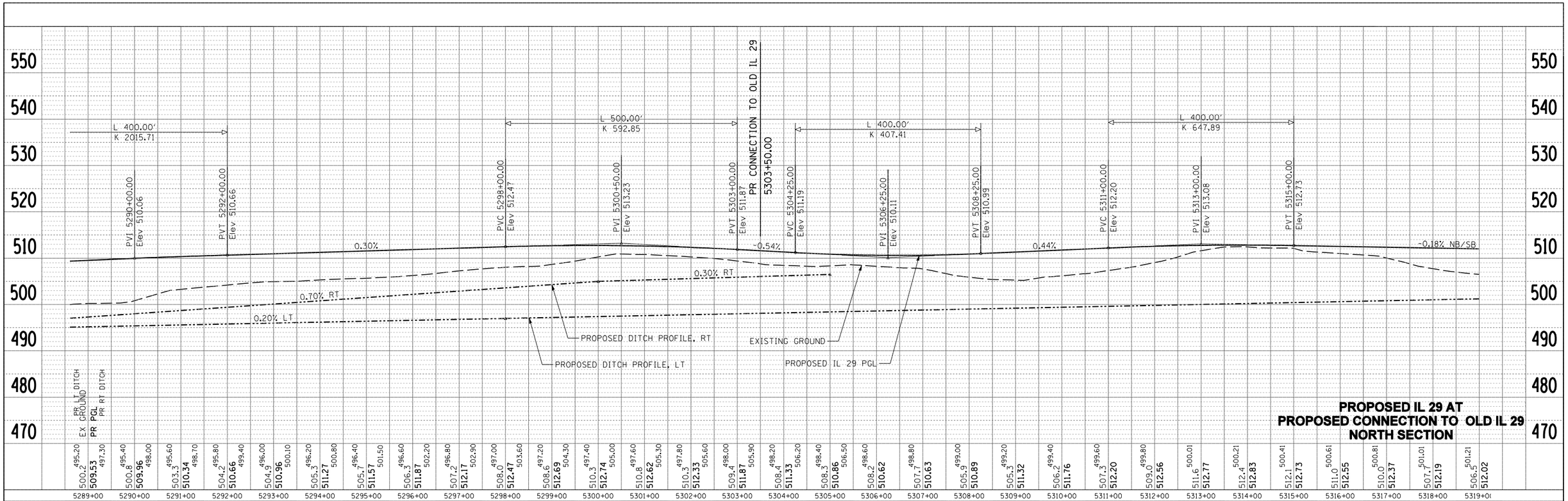

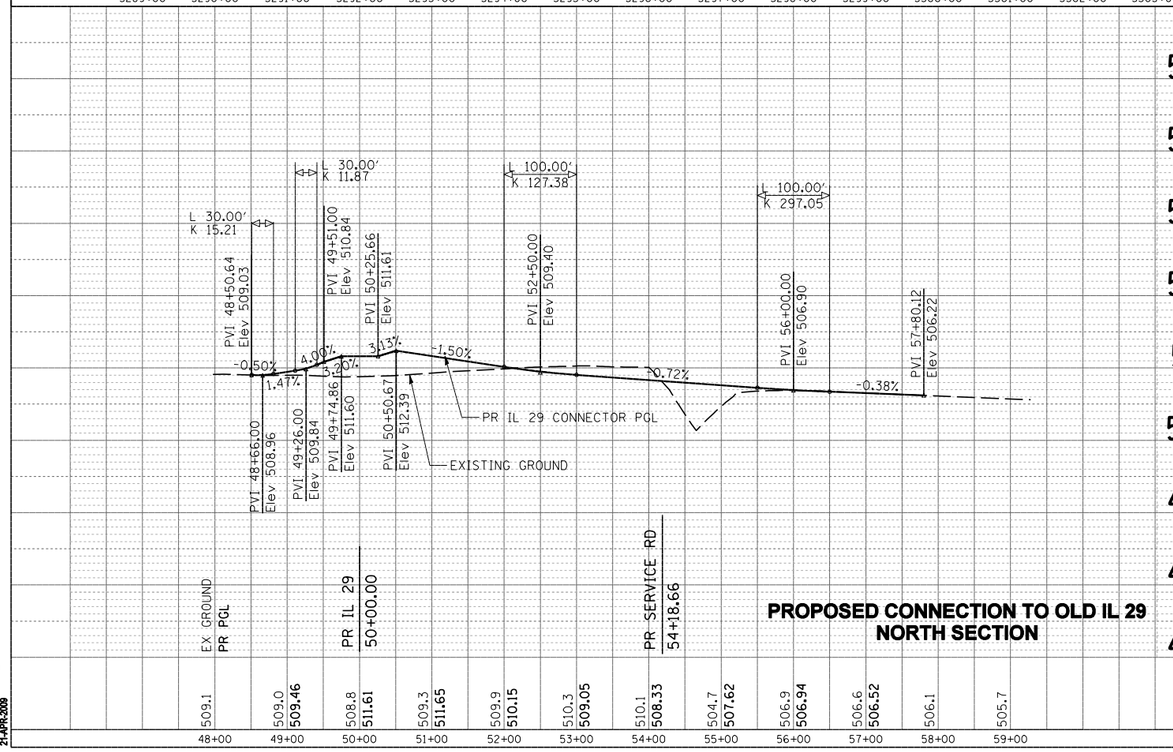

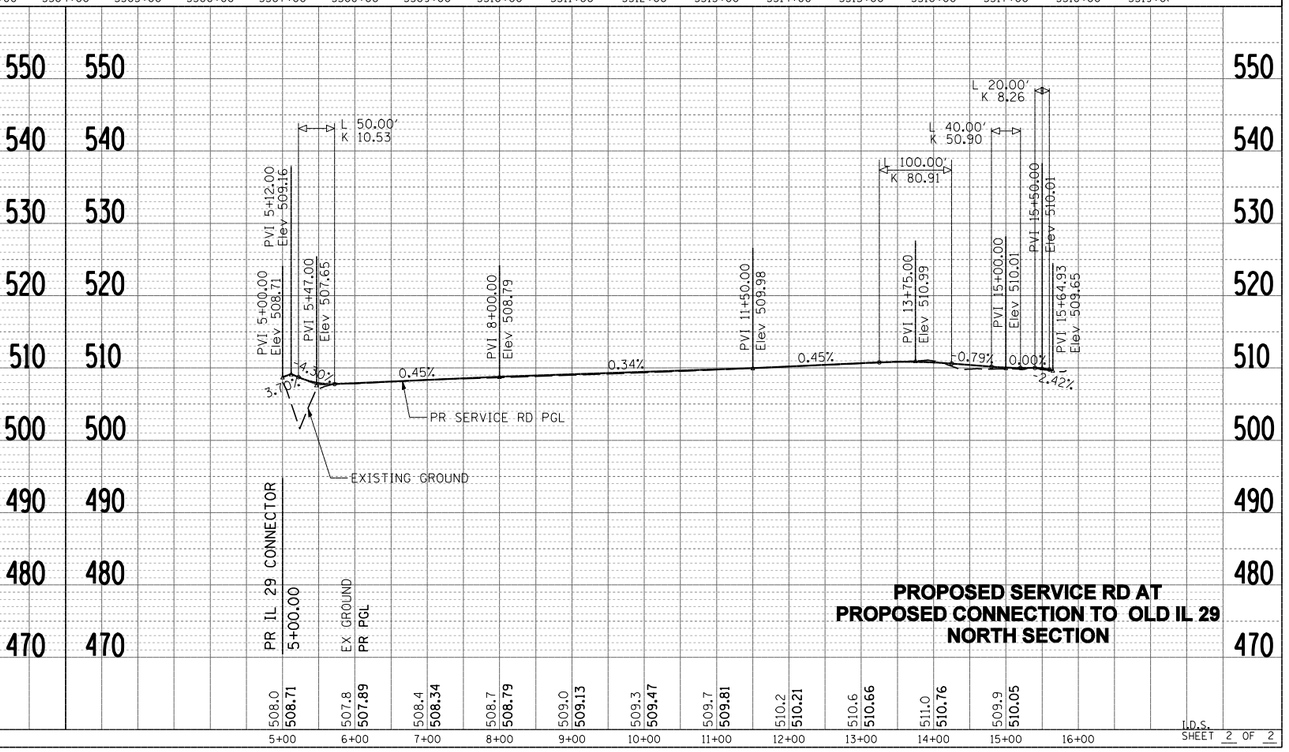

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NOTE BOOK NO.		

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21-APR-2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERSECTION DESIGN STUDY
IL 29 /PUTNAM AREA INTERSECTIONS

PREPARED BY : CH2MHILL

OCTOBER 2007

Illinois Department of Transportation
CH2MHILL

June 2010
Catalog No. 032469-00P

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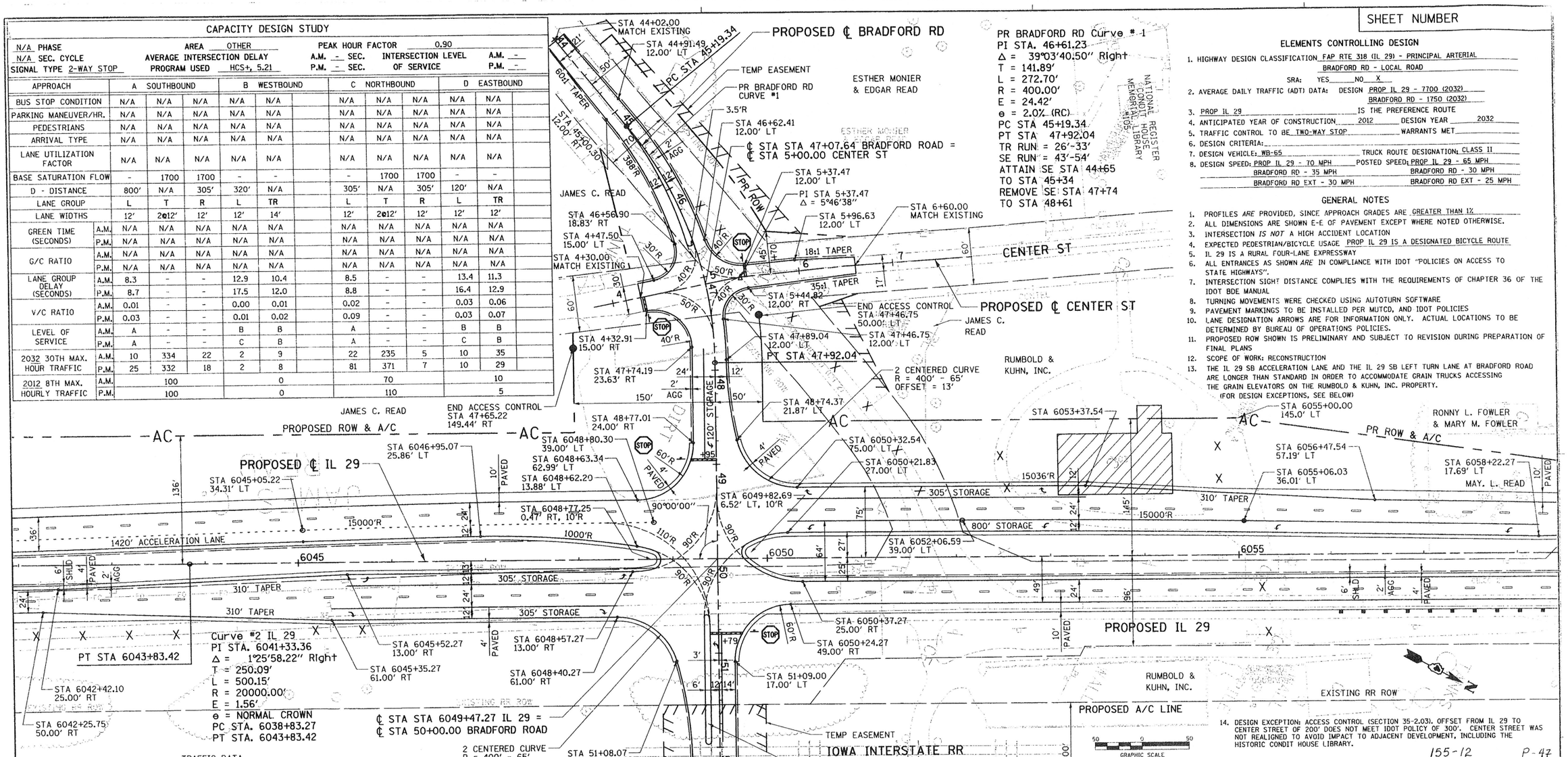
17-MAR-2009

SHEET NUMBER

CAPACITY DESIGN STUDY

N/A PHASE — AREA OTHER — PEAK HOUR FACTOR 0.90
N/A SEC. CYCLE — AVERAGE INTERSECTION DELAY A.M. – SEC. P.M. – SEC. — INTERSECTION LEVEL OF SERVICE A.M. – P.M. –
SIGNAL TYPE 2-WAY STOP — PROGRAM USED HCS+, 5.21

APPROACH		A SOUTHBOUND			B WESTBOUND			C NORTHBOUND			D EASTBOUND		
BUS STOP CONDITION		N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
PARKING MANEUVER/HR.		N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
PEDESTRIANS		N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
ARRIVAL TYPE		N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
LANE UTILIZATION FACTOR		N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
BASE SATURATION FLOW		-	1700	1700	-	-		-	1700	1700	-	-	
D - DISTANCE		800'	N/A	305'	320'	N/A		305'	N/A	305'	120'	N/A	
LANE GROUP		L	T	R	L	TR		L	T	R	L	TR	
LANE WIDTHS		12'	2@12'	12'	12'	14'		12'	2@12'	12'	12'	12'	
GREEN TIME (SECONDS)	A.M.	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
	P.M.	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
G/C RATIO	A.M.	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
	P.M.	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
LANE GROUP DELAY (SECONDS)	A.M.	8.3	-	-	12.9	10.4		8.5	-	-	13.4	11.3	
	P.M.	8.7	-	-	17.5	12.0		8.8	-	-	16.4	12.9	
V/C RATIO	A.M.	0.01	-	-	0.00	0.01		0.02	-	-	0.03	0.06	
	P.M.	0.03	-	-	0.01	0.02		0.09	-	-	0.03	0.07	
LEVEL OF SERVICE	A.M.	A	-	-	B	B		A	-	-	B	B	
	P.M.	A	-	-	C	B		A	-	-	C	B	
2032 30TH MAX. HOUR TRAFFIC	A.M.	10	334	22	2	9		22	235	5	10	35	
	P.M.	25	332	18	2	8		81	371	7	10	29	
2012 8TH MAX. HOURLY TRAFFIC	A.M.	100			0			70			10		
	P.M.	100			0			110			5		



ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION FAP RTE 318 (IL 29) - PRINCIPAL ARTERIAL
   BRADFORD RD - LOCAL ROAD
   SRA: YES ___ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN PROP IL 29 - 7700 (2032)
   BRADFORD RD - 1750 (2032)
3. PROP IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE TWO-WAY STOP WARRANTS MET
6. DESIGN CRITERIA:
7. DESIGN VEHICLE: WB-65 TRUCK ROUTE DESIGNATION: CLASS II
8. DESIGN SPEED: PROP IL 29 - 70 MPH POSTED SPEED: PROP IL 29 - 65 MPH
   BRADFORD RD - 35 MPH BRADFORD RD - 30 MPH
   BRADFORD RD EXT - 30 MPH BRADFORD RD EXT - 25 MPH

GENERAL NOTES

1. PROFILES *ARE* PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT EXCEPT WHERE NOTED OTHERWISE.
3. INTERSECTION *IS NOT* A HIGH ACCIDENT LOCATION
4. EXPECTED PEDESTRIAN/BICYCLE USAGE PROP IL 29 IS A DESIGNATED BICYCLE ROUTE
5. IL 29 IS A RURAL FOUR-LANE EXPRESSWAY
6. ALL ENTRANCES AS SHOWN *ARE* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
7. INTERSECTION SIGHT DISTANCE COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE IDOT BDE MANUAL
8. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE
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11. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS
12. SCOPE OF WORK: RECONSTRUCTION
13. THE IL 29 SB ACCELERATION LANE AND THE IL 29 SB LEFT TURN LANE AT BRADFORD ROAD ARE LONGER THAN STANDARD IN ORDER TO ACCOMMODATE GRAIN TRUCKS ACCESSING THE GRAIN ELEVATORS ON THE RUMBOLD & KUHN, INC. PROPERTY.
    (FOR DESIGN EXCEPTIONS, SEE BELOW)
14. DESIGN EXCEPTION: ACCESS CONTROL (SECTION 35-2.03). OFFSET FROM IL 29 TO CENTER STREET OF 200' DOES NOT MEET IDOT POLICY OF 300'. CENTER STREET WAS NOT REALIGNED TO AVOID IMPACT TO ADJACENT DEVELOPMENT, INCLUDING THE HISTORIC CONDIT HOUSE LIBRARY.

155-12 P-47

TRAFFIC DATA

MOVEMENT	YEAR 2001 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY 2012	YEAR 2012 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY 2032	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB	0	0	0/0	0	0	0	-/-	10	25
AD	9	8	33/25	22	11	10	82/80	20	18
AC	135	134	11/13	24	168	167	99/99	334	332
BA	0	0	0	0	0	0	-/-	7	6
BC	0	0	0	0	0	0	-/-	2	2
BD	0	0	0	0	0	0	-/-	2	2
CD	8	29	12/0	25	10	36	120/125	22	81
CA	89	126	18/9	25	111	157	112/136	235	371
CB	0	0	0	0	0	0	-/-	5	7
DC	14	9	0/0	14	16	10	56/90	25	19
DB	0	0	0	0	0	0	-/-	10	10
DA	0	0	0	0	0	0	-/-	10	10
TOTAL A	233	268			290	334		616	762
TOTAL B	0	0			0	0		36	52
TOTAL C	246	298			305	370		788	812
TOTAL D	31	46			0	56		89	140

LOCATION MAP
Thunderbird, Lake
BRADFORD RD, SENACHWINE VALLEY RD, CABIN HILL RD, PUTNAM COUNTY, BUREAU COUNTY, KENTVILLE RD
Putnam, Illinois River, Hennepin
INTERSECTION LOCATION

INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29) WITH
FAS ROUTE 247 (BRADFORD RD)
SEC. NO. ___ PROJ. NO. HPD-0133(012)
SCALE 1" = 50' COUNTY PUTNAM
SJN : P-94-009-01 REV. NO. ___
DESIGNED BY B. GANNIS CH2MHILL DATE 10/07
SATISFACTORY DISTRICT GEOMETRICS ENGINEER DATE 2-22-08
SATISFACTORY DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE 2-22-08
SATISFACTORY DISTRICT OPERATIONS ENGINEER DATE 2/25/08
APPROVED DISTRICT ENGINEER DATE 02/25/08
CADD FILE NAME : ...38912crd11.sht I.D.S. SHEET 1 OF 11

•DGN-SPEC• •DATE-TIME• •REF• •REF• •REF•

Plotted by: bgannis
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02/22/2007

℄ STA 46+50.34 CONNECTION TO CENTER ST =
℄ STA 50+00.00 CENTER ST

STA 49+32.41
MATCH EXISTING

3-CENTERED CURVE
R = 200′ - 40′ - 150′
OFFSETS = 8.1′ - 3.0′

STA 50+59.25
26.14′ RT

END ACCESS CONTROL
STA 47+20.30
50.00′ RT

STA 51+22.18
MATCH EXISTING

Curve #1 IL 29
PI STA. 6026+35.55
Δ = 1°36′48.55″ Left
T = 281.62′
L = 563.21′
R = 20000.00′
E = 1.98′
e = NORMAL CROWN
PC STA 6023+53.93
PT STA 6029+17.14

NORBERT H. LOUIS
& MARILYN A. LOUIS

STA 49+32.41
12.30′ RT

END ACCESS CONTROL
STA 46+85.55
60.00′ RT

60′ R

STA 46+98.79
23.44′ RT

10:1 TAPER

STA 48+17.96
12.00′ RT

EXISTING ROW

CENTER ST

STA 47+20.30
16.00′ LT

STA 47+55.08
12.00′ LT

STA 47+81.92
12.00′ LT

STA 51+22.18
15.44′ RT

PROPOSED ℄ CONNECTION
TO CENTER ST

CONNECTION TO
CENTER ST

STA 48+92.27
27.52′ LT

2-CENTERED CURVE
R=400′-65′
OFFSET=13.0′

BERT W. WEIR, JR
& ROSE M. WEIR

PROPOSED ℄ IL 29

PROPOSED ROW & A/C

STA 48+90.73
12.00′ RT

STA 6020+99.34
25.00′ LT

STA 6020+66.66
49.00′ LT

60′R

65′R

STA 6022+05.07
25.00′ LT

STA 6022+31.06
61.00′ LT

PC STA 6023+53.93

CURVE #1

STA 6025+34.04
61.00′ LT

STA 6028+44.80
49.00′ LT

PT STA 6029+17.14

PROPOSED IL 29

305′ STORAGE

310′ TAPER

40′R

90′R

EXISTING ROW

6015

6020

6025

310′ TAPER

305′ STORAGE

89°47′06″

90′R

STA 6014+33.78
25.00′ RT

STA 6017+43.78
13.00′ RT

STA 6020+48.78
13.00′ RT

STA 6020+99.37
15.00′ LT, 10′R

STA 6021+80.07
1.58′ LT, 10′R

STA 6022+28.83
25.00′ RT

EXISTING RR ROW

PROPOSED A/C LINE

IOWA INTERSTATE RR

℄ STA 6021+39.07 PROPOSED IL 29 =
℄ STA 50+00.00 CONNECTION TO CENTER ST

EXISTING RR ROW

WILLIAM D. GREEK

NORBERT H. LOUIS
& MARILYN A. LOUIS

2032 ADT

RICHARD K. MOTTER,
ZOE L. CLIMENHAGA
& CHARLOTTE K. MOTTER

D
N/A
C 7700 7700 A IL 29

GRAPHIC SCALE

CAPACITY ANALYSIS ADEQUATE
BY INSPECTION

INTERSECTION DESIGN STUDY

FA ROUTE 318 (IL 29)
___ ROUTE ___ WITH (CONNECTION TO CENTER ST)

SEC. NO. _____

SCALE 1″=50′ COUNTY PUTNAM

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

DATE 10/07 I.D.S. SHEET 2 OF 11

BDE-9906

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10/24/2007

Curve #1 IL 29
PI STA. 6026+35.55
Δ = 1°36'48.55" Left
T = 281.62'
L = 563.21'
R = 20000.00'
E = 1.98'
e = NORMAL CROWN
PC STA. 6023+53.93
PT STA. 6029+17.14

BERT W. WEIR, JR
& ROSE M. WEIR

JAMES C. READ

EXISTING ROW

CENTER ST

EXISTING ROW & A/C

PROPOSED ROW & A/C

STA 6028+63.59
25.00' LT

STA 6028+44.80
49.00' LT

PT STA 6029+17.14

℄ STA 6032+23.24 PROPOSED IL 29 =
STA 5+00.00 FIELD ENTRANCE

PROPOSED ℄ IL 29

STA 6034+63.67
13.00' LT

PROPOSED IL 29

CURVE #2

600' TAPER (50:1)

1500' ACCELERATION LANE

6030

6035

6040

EXISTING ROW

10' PAVED

6' SHLD

2' AGG

4' PAVED

CURVE #1

STA 6031+55.82
49.00' RT

STA 6+00.01
15.00' RT

STA 6032+85.86
49.00' RT

STA 5+96.84
15.00' LT

END ACCESS CONTROL
STA 6031+90.08
129.86' RT

END ACCESS CONTROL
STA 6032+50.05
131.61' RT

10:1 TAPER (TYP)

TEMP EASEMENT

EXISTING RR ROW

IOWA INTERSTATE RR

PC STA. 6038+83.27

PROPOSED A/C LINE

WILLIAM D. GREEK

READ FARMING PARTNERSHIP

Curve #2 IL 29
PI STA. 6041+33.36
Δ = 1°25'58.22" Right
T = 250.09'
L = 500.15'
R = 20000.00'
E = 1.56'
PC STA. 6038+83.27
PT STA. 6043+83.42
e = NORMAL CROWN

GRAPHIC SCALE

INTERSECTION DESIGN STUDY

FA ROUTE 318 (IL 29)

IN PUTNAM AREA

SEC. NO.

SCALE 1"=50'

COUNTY PUTNAM

SJN : P-94-009-01

PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 3 OF 11

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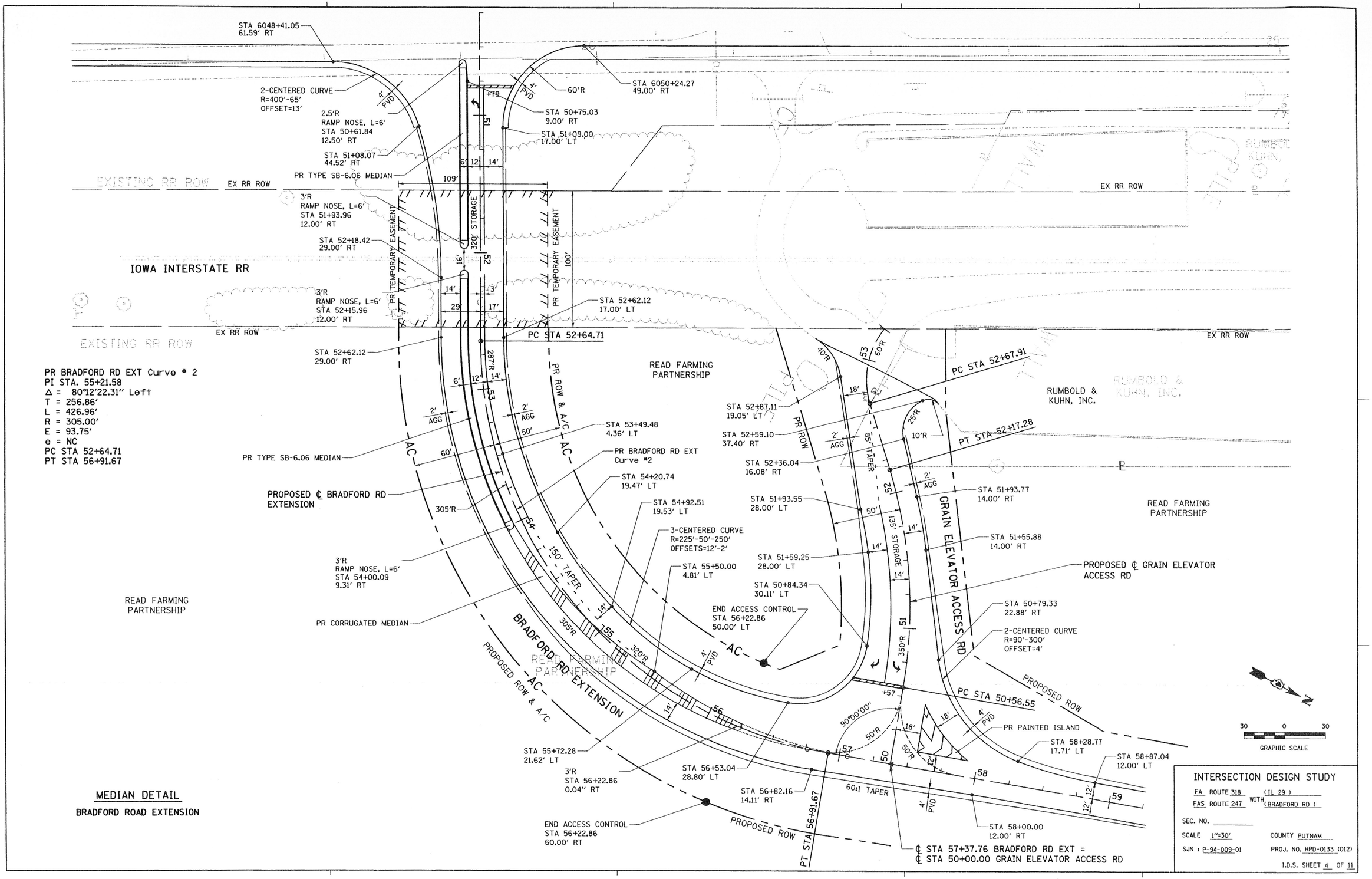
10/24/2007



MEDIAN DETAIL

BRADFORD ROAD EXTENSION

INTERSECTION DESIGN STUDY

FA ROUTE 318 (IL 29)
FAS ROUTE 247 WITH (BRADFORD RD)

SEC. NO. _____

SCALE 1"=30' COUNTY PUTNAM

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 4 OF 11

•DGN•SPEC•
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10/25/2007

RUMBOLD & KUHN, INC.

STA 52+46.60
51.28' RT

PROPOSED ℄ GRAIN ELEVATOR ACCESS ROAD

STA 53+02.68
71.45' LT

READ FARMING
PARTNERSHIP

GRAIN ELEVATOR
ACCESS ROAD

READ FARMING
PARTNERSHIP

PR TEMP EASEMENT

STA 50+84.29
48.30' RT

STA 58+87.04
50.00' LT

STA 50+82.74
50.00' LT

STA 56+37.89
50.00' LT

STA 60+43.18
12.00' LT

PROPOSED ROW

MATCH LINE STA 54+50.00

STA 61+71.22
12.00' LT

BRADFORD RD EXTENSION (FAS 247)

ELLEN M.
BRITTON

READ FARMING
PARTNERSHIP

LEONARD WRIGHT

PC STA 46+43.89

STA 47+01.89
36.37' RT

STA 46+82.64
30.35' RT

STA 47+13.70
27.11' RT

STA 47+26.72
40.00' RT

PR SENACHAWINE LAKE RD Curve # 2

2 - CENTERED CURVE
R = 200' - 60'
OFFSET = 8'

PT STA 48+37.06

STA 49+25.43
12.00' RT

PROPOSED ROW

SEE SHEET 6
MATCH LINE STA 46+00

STA 46+60.39
12.00' RT

STA 46+84.36
12.00' LT

STA 47+23.92
12.00' RT

STA 47+24.43
72.08' LT

PR TEMP EASEMENT

STA 47+60.35
40.07' LT

PROPOSED ℄ SENACHWINE LAKE RD

STA 47+98.80
12.00' LT

STA 48+83.05
12.00' LT

STA 49+64.49
29.33' LT

2 - CENTERED CURVE
R = 200' - 50'
OFFSET = 13'

STA 66+03.30
12.00' LT

90°00'00"

STA 61+75.80
12.00' RT

STA 61+58.18
50.00' RT

STA 64+43.41
12.00' LT

STA 64+99.08
25.00' LT

STA 60+43.18
12.00' RT

PR TEMP EASEMENT

PC STA 61+58.18

STA 56+91.67
60.00' RT

PT STA 56+91.67

PR BRADFORD RD EXT Curve # 2

FOR DETAILS OF THIS AREA,
SEE SHEET 4

PROPOSED ℄
BRADFORD RD EXTENSION

℄ STA 65+38.07 BRADFORD RD EXTENSION =
℄ STA 50+00.00 SENACHWINE LAKE RD

PR BRADFORD RD EXT Curve # 3

SENACHWINE LAKE RD (CH 13)

NORA WRIGHT

READ FARMING
PARTNERSHIP

PROPOSED ROW

PT STA 69+06.85

STA 69+06.85
12.00' LT

STA 69+26.78
12.00' LT

STA 69+06.85
12.00' RT

40:1 TAPER

40:1 TAPER

STA 69+72.81
MATCH EXISTING

EXISTING ROW

EXISTING ROW

N

GRAPHIC SCALE

PR BRADFORD RD EXT Curve # 2
PI STA. 55+21.58
Δ = 80°12'22.31" Left
T = 256.86'
L = 426.96'
R = 305.00'
E = 93.75'
e = NC
PC STA 52+64.71
PT STA 56+91.67

PR BRADFORD RD EXT Curve # 3
PI STA. 67+01.12
Δ = 107°14'20.62" Right
T = 542.93'
L = 748.67'
R = 400.00'
E = 274.37'
e = NC
PC STA 61+58.18
PT STA 69+06.85

PR SENACHAWINE LAKE RD Curve # 2
PI STA. 47+43.96
Δ = 36°53'32.49" Right
T = 100.07'
L = 193.17'
R = 300.00'
E = 16.25'
e = NC
PC STA 46+43.89
PT STA 48+37.06

INTERSECTION DESIGN STUDY

FA ROUTE 318 (IL 29)
WITH
FAS ROUTE 247 (BRADFORD RD)

SEC. NO. _____

SCALE 1"=50'
COUNTY PUTNAM

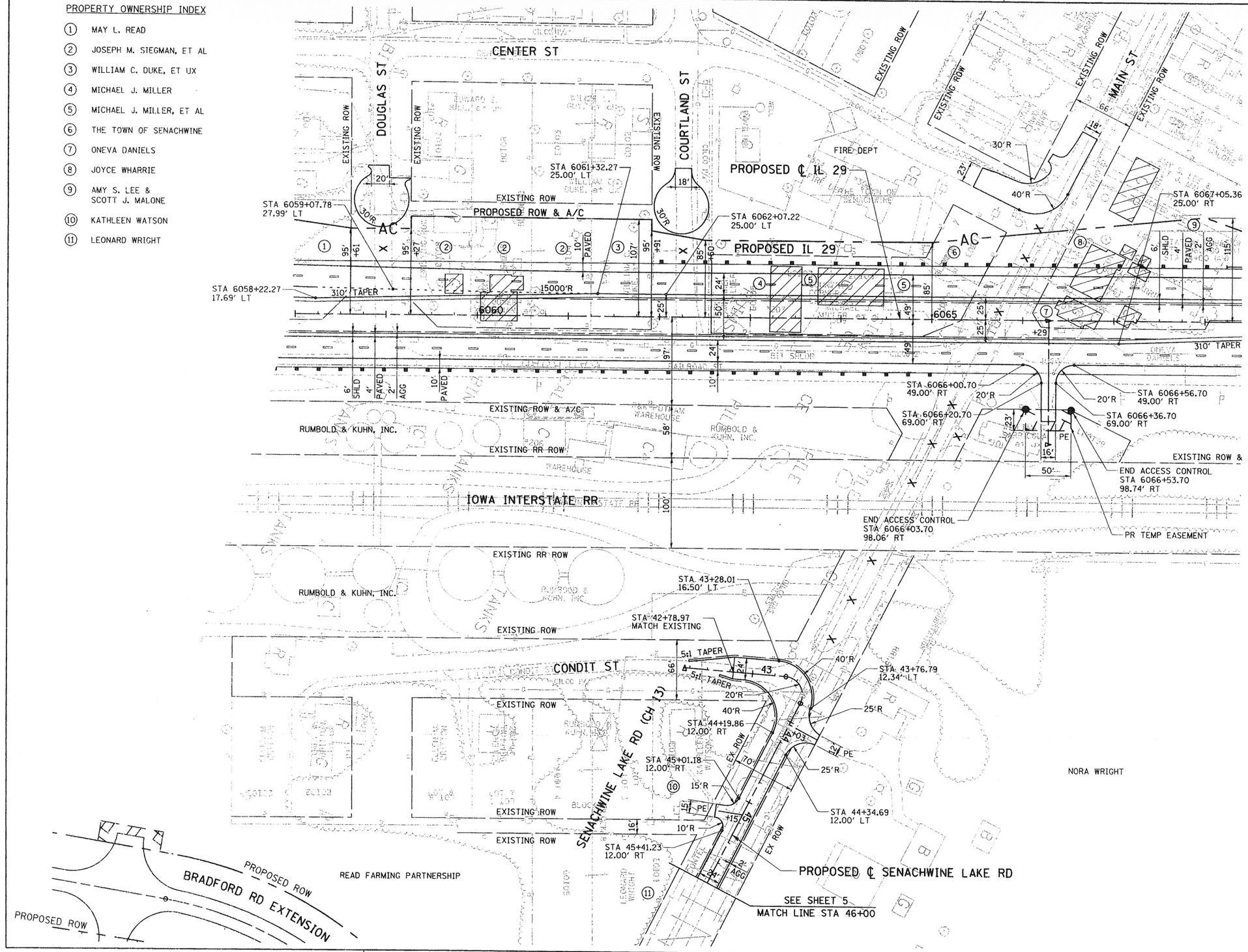
SJN : P-94-009-01
PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 5 OF 1

Plotted by bgarrisi
Wednesday, 11/08/2012
10:06:00 AM

PROPERTY OWNERSHIP INDEX

1. MAY L. READ
2. JOSEPH M. SIEGMAN, ET AL
3. WILLIAM C. DUKE, ET UX
4. MICHAEL J. MILLER
5. MICHAEL J. MILLER, ET AL
6. THE TOWN OF SENACHWINE
7. ONEVA DANIELS
8. JOYCE WHARRIE
9. AMY S. LEE & SCOTT J. MALONE
10. KATHLEEN WATSON
11. LEONARD WRIGHT



INTERSECTION DESIGN STUDY

FA ROUTE 318 (IL 29)
CH ROUTE 13 WITH (SENACHWINE LAKE RD)

SEC. NO. _____

SCALE 1"=50' COUNTY PUTNAM

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 6 OF 11

•DGN-SPEC•
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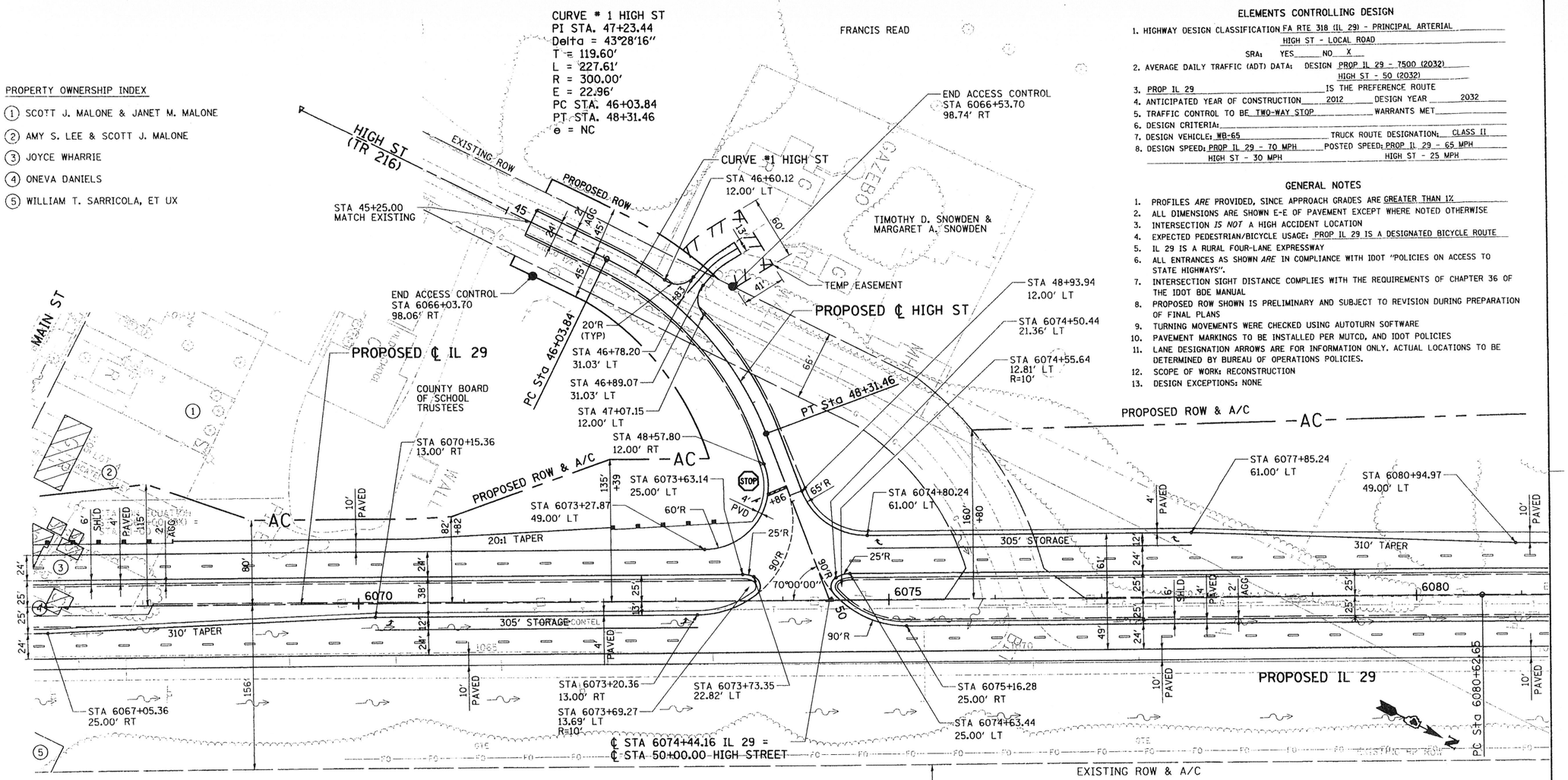
Plotted by bgannis
\\pw\proj\f18891\2_f28/89/12\dgn drawings\891\2ch7i13 s.pt
10/24/2001

SHEET NUMBER

PROPERTY OWNERSHIP INDEX

1. SCOTT J. MALONE & JANET M. MALONE
2. AMY S. LEE & SCOTT J. MALONE
3. JOYCE WHARRIE
4. ONEVA DANIELS
5. WILLIAM T. SARRICOLA, ET UX



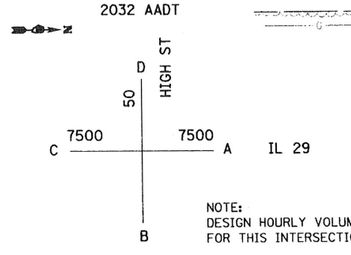
ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION FA RTE 318 (IL 29) - PRINCIPAL ARTERIAL
   HIGH ST - LOCAL ROAD
   SRA: YES ____ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: DESIGN PROP IL 29 - 7500 (2032)
   HIGH ST - 50 (2032)
3. PROP IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE TWO-WAY STOP WARRANTS MET
6. DESIGN CRITERIA:
7. DESIGN VEHICLE: WB-65 TRUCK ROUTE DESIGNATION: CLASS II
8. DESIGN SPEED: PROP IL 29 - 70 MPH POSTED SPEED: PROP IL 29 - 65 MPH
   HIGH ST - 30 MPH HIGH ST - 25 MPH

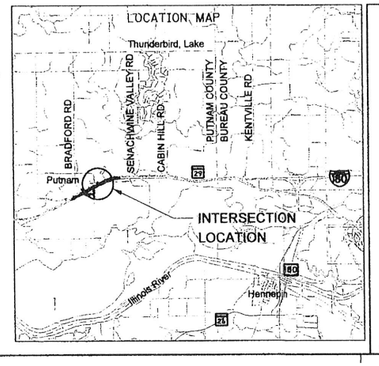
GENERAL NOTES

1. PROFILES *ARE* PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%
2. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT EXCEPT WHERE NOTED OTHERWISE
3. INTERSECTION *IS NOT* A HIGH ACCIDENT LOCATION
4. EXPECTED PEDESTRIAN/BICYCLE USAGE: PROP IL 29 IS A DESIGNATED BICYCLE ROUTE
5. IL 29 IS A RURAL FOUR-LANE EXPRESSWAY
6. ALL ENTRANCES AS SHOWN *ARE* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
7. INTERSECTION SIGHT DISTANCE COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE IDOT BDE MANUAL
8. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS
9. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE
10. PAVEMENT MARKINGS TO BE INSTALLED PER MUTCD, AND IDOT POLICIES
11. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY BUREAU OF OPERATIONS POLICIES.
12. SCOPE OF WORK: RECONSTRUCTION
13. DESIGN EXCEPTIONS: NONE

2032 AADT



NOTE:
DESIGN HOURLY VOLUMES ARE NOT AVAILABLE FOR THIS INTERSECTION DESIGN STUDY.



INTERSECTION DESIGN STUDY

FA ROUTE 318 (IL 29) WITH
TR ROUTE 216 (HIGH ST)

SEC. NO. ____ PROJ. NO. HPD-0133(012)
SCALE 1" = 50' COUNTY : PUTNAM
SJN : P-94-009-01 REV. NO. ____

DESIGNED BY B. GANNIS CH2MHILL DATE 10/07
SATISFACTORY ____ DISTRICT GEOMETRICS ENGINEER DATE 2-25-08
SATISFACTORY ____ DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE 2-25-08
SATISFACTORY ____ DISTRICT OPERATIONS ENGINEER DATE 2/26/08
APPROVED ____ DISTRICT ENGINEER DATE 2/26/08

CADD FILE NAME : ...88912cr6714.sht I.D.S. SHEET 7 OF 11

155-12

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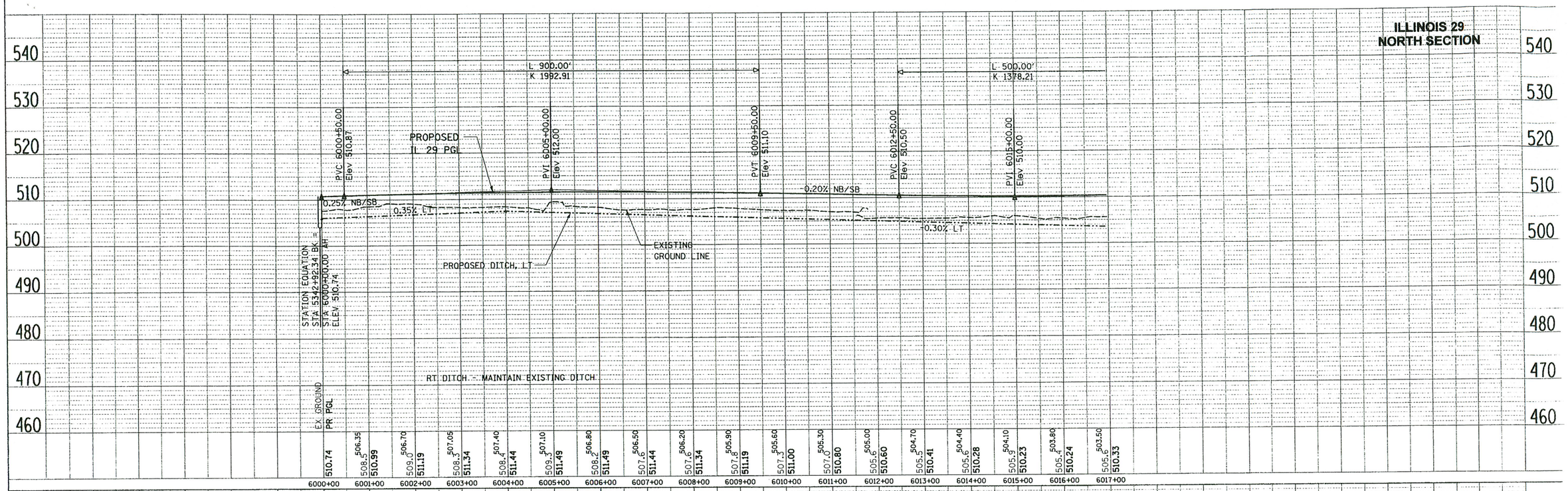
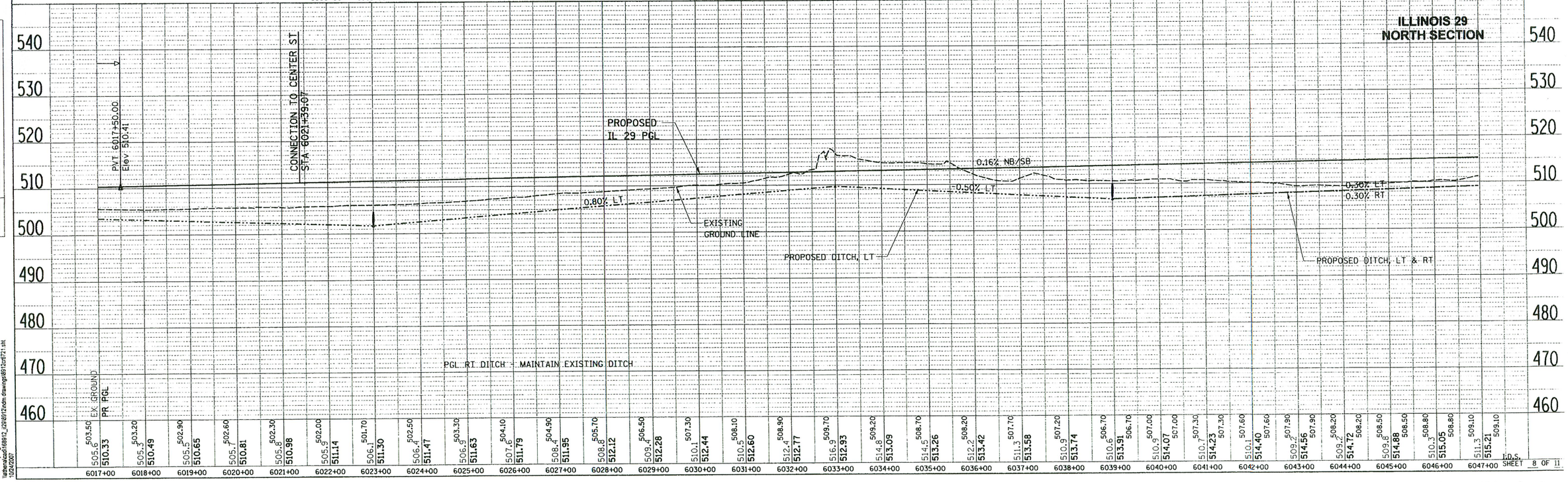
10/24/2007





PLAN

		BY	DATE
SURVEYED			
PLOTTED			
ALIGNMENT CHECKED			
RT. OF WAY CHECKED			
CADD FILE NAME			
NOTE BOOK			
NO.			

PROFILE

		BY	DATE
SURVEYED			
PLOTTED			
GRADES CHECKED			
B.M. NOTED			
STRUCTURE NOTATNS CHKD			
NOTE BOOK			
NO.			

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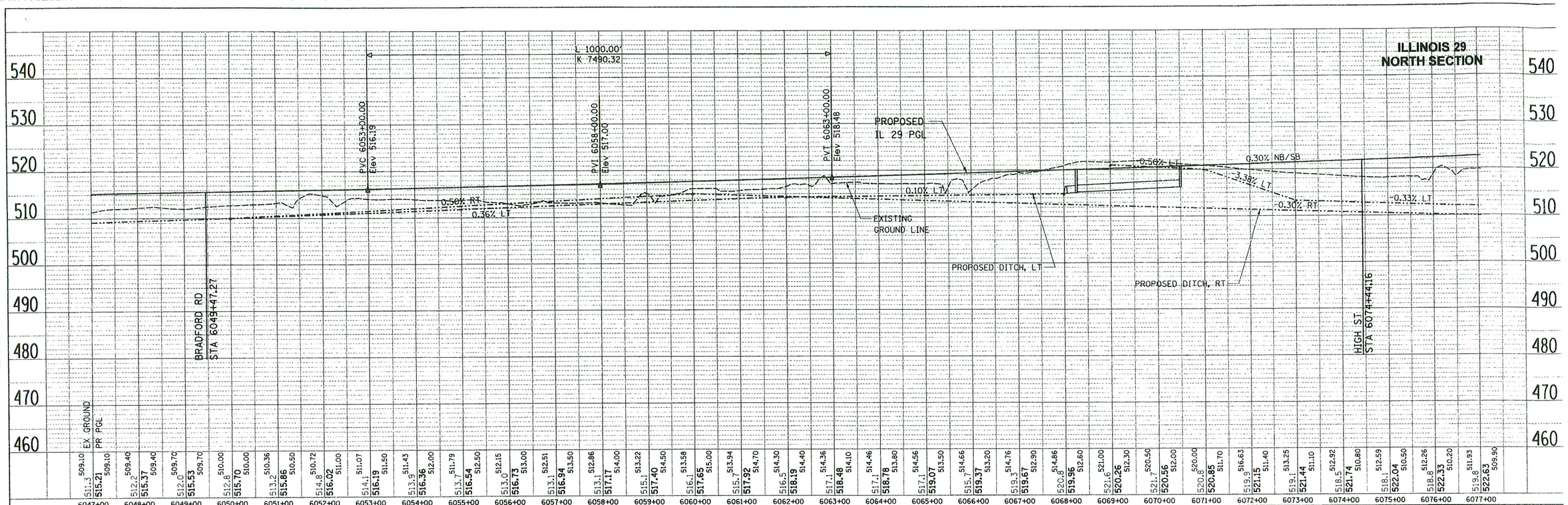
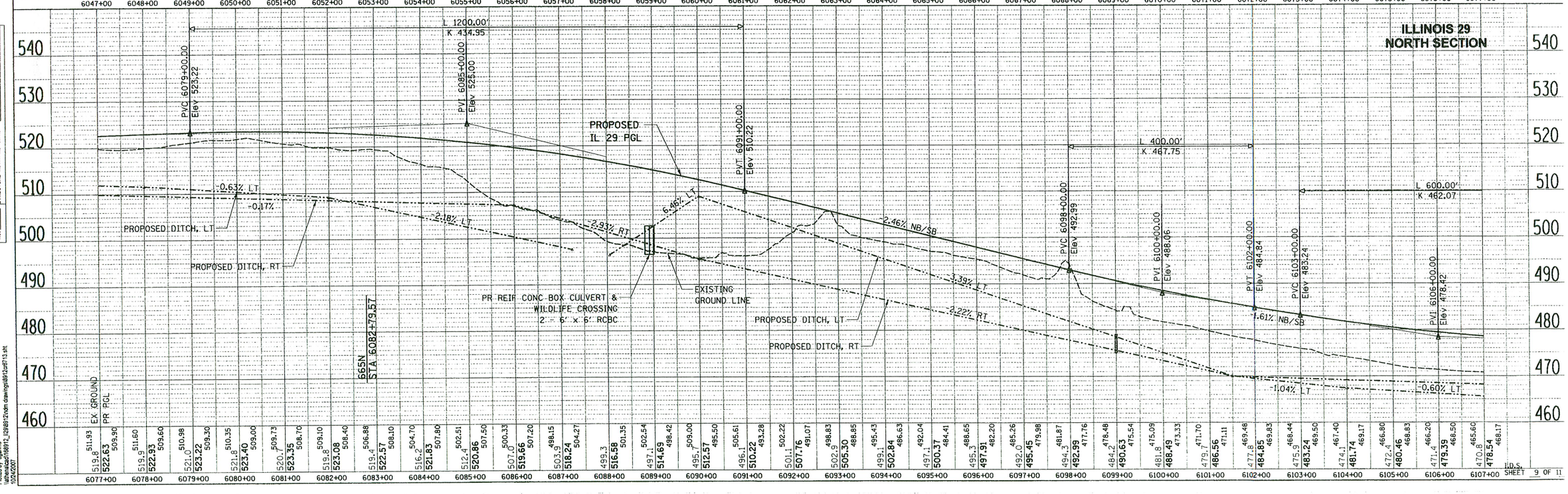
10/24/2007

I.D.S.
SHEET 8 OF 11





PLAN
NOTE BOOK NO.
SURVEYED
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HORIZ. CHECKED
RT. OF WAY CHECKED
ADD FILE NAME
BY
DATE

PROFILE
NOTE BOOK NO.
SURVEYED
PLOTTED
GRADES CHECKED
HYDRAULICS
STRUCTURE NOTATIONS CHKD
BY
DATE

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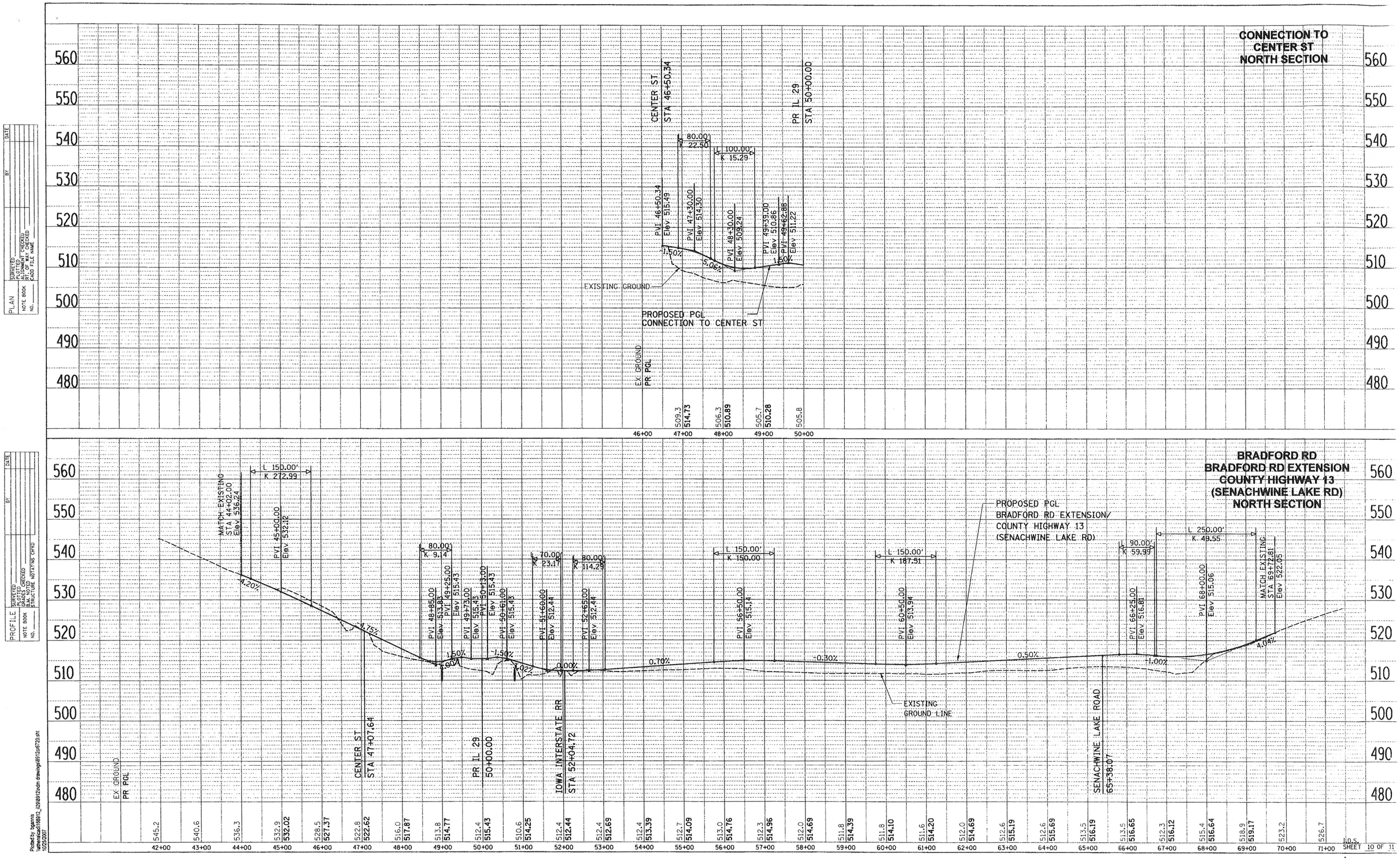
CONNECTION TO
CENTER ST
NORTH SECTION
CENTER ST.
STA 46+50.34
PR IL 29
STA 50+00.00
L 80.00'
R 22.50
L 100.00'
K 15.29
PVI 46+50.34
Elev 515.49
PVI 47+30.00
Elev 514.30
PVI 48+30.00
Elev 509.24
PVI 49+39.00
Elev 510.86
PVI 49+62.88
Elev 511.22
-1.50%
-5.06%
-1.90%
EXISTING GROUND
PROPOSED PGL
CONNECTION TO CENTER ST
EX. GROUND
PR PGL
509.3
514.73
506.3
510.89
505.7
510.28
505.8
46+00
47+00
48+00
49+00
50+00
PLAN
NOTE BOOK NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
BY
DATE
PROFILE
NOTE BOOK NO.
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATIONS CHKD
BRADFORD RD
BRADFORD RD EXTENSION
COUNTY HIGHWAY 13
(SENACHWINE LAKE RD)
NORTH SECTION
MATCH EXISTING
STA 44+02.00
Elev 536.24
L 150.00'
K 272.99
PVI 45+00.00
Elev 532.12
4.20%
4.15%
PVI 48+85.00
Elev 513.83
L 80.00'
K 9.4
PVI 49+26.00
Elev 515.43
PVI 49+73.00
Elev 515.43
PVI 50+13.00
Elev 515.43
PVI 50+61.00
Elev 515.43
L 70.00'
K 23.17
PVI 51+60.00
Elev 512.41
L 80.00'
K 114.29
PVI 52+65.00
Elev 512.44
-1.50%
-1.90%
-1.02%
0.00%
0.70%
L 150.00'
K 150.00
PVI 56+50.00
Elev 515.14
-0.30%
L 150.00'
K 187.51
PVI 60+50.00
Elev 513.94
0.50%
PROPOSED PGL
BRADFORD RD EXTENSION/
COUNTY HIGHWAY 13
(SENACHWINE LAKE RD)
L 90.00'
K 59.99
PVI 66+25.00
Elev 516.81
-1.00%
L 250.00'
K 49.55
PVI 68+00.00
Elev 515.06
4.04%
MATCH EXISTING
STA 69+72.81
Elev 522.05
EXISTING
GROUND LINE
EX. GROUND
PR PGL
CENTER ST
STA 47+07.64
PR IL 29
50+00.00
IOWA INTERSTATE RR
STA 52+04.72
SENACHWINE LAKE ROAD
65+38.07
545.2
540.6
536.3
532.9
532.02
528.5
527.37
522.8
522.62
516.0
517.87
513.8
514.77
512.4
515.43
510.6
514.25
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512.4
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515.4
516.64
518.9
519.17
523.2
526.7
42+00
43+00
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70+00
71+00
T.O.S.
SHEET 10 OF 11
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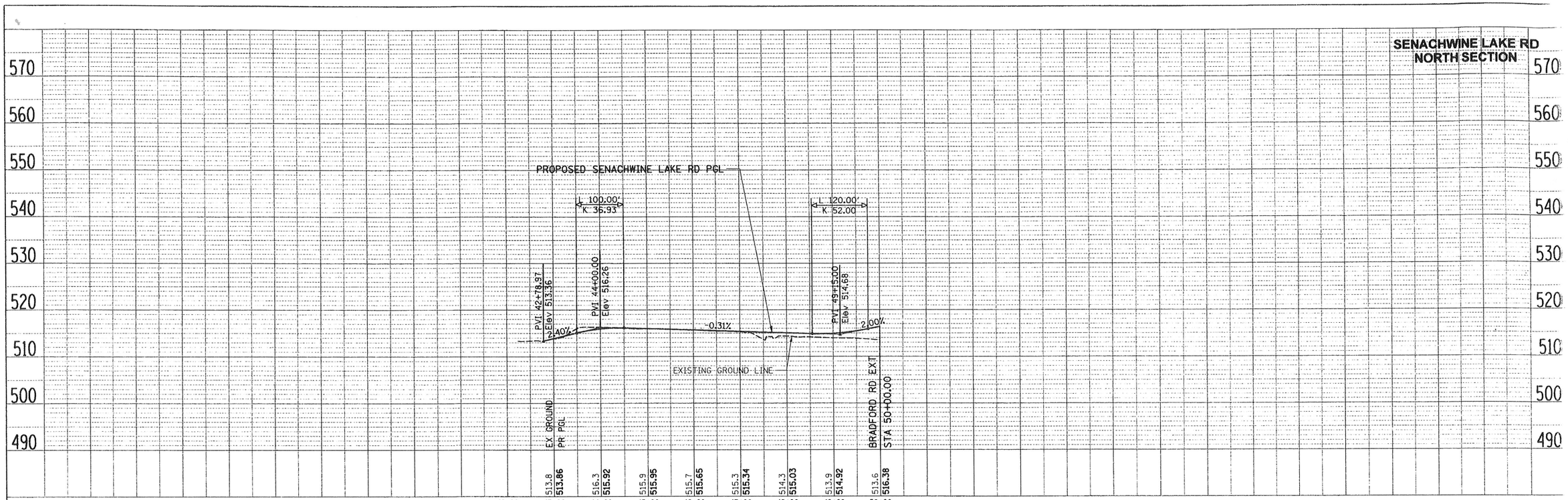
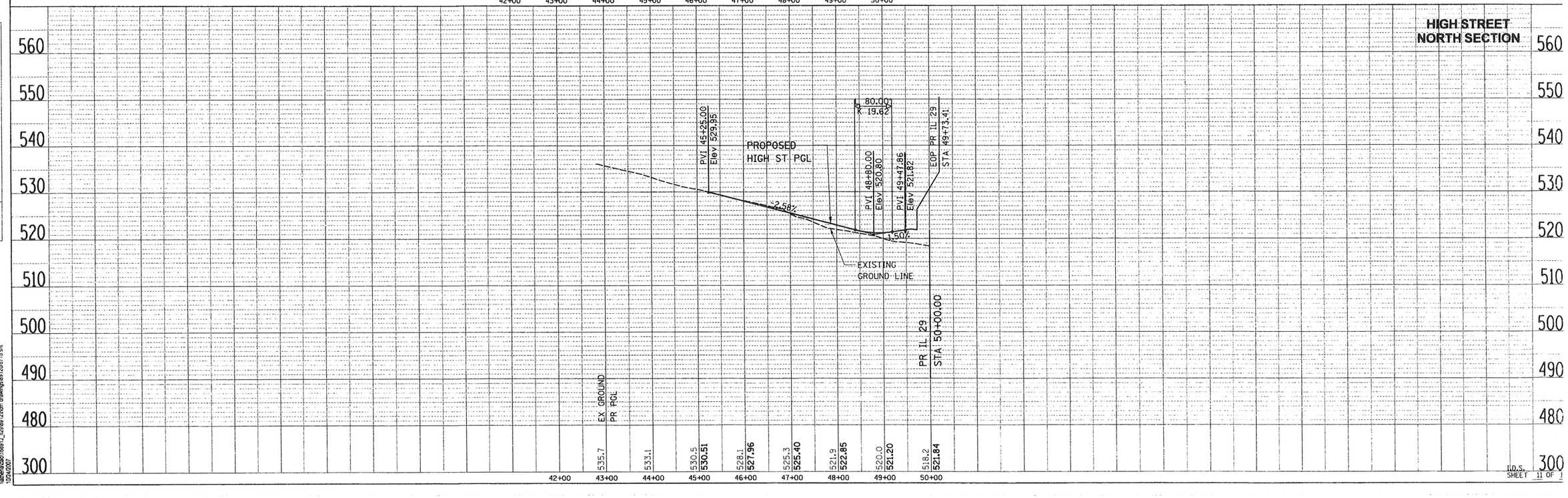
10/25/2007





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	DRAWN		
	ALIGNMENT CHECKED		
NOTE BOOK	GRADES WERE PROFILED		
NO.	CADD FILE NAME		

PROFILE	SURVEYED	BY	DATE
	DRAWN		
	GRADES CHECKED		
NOTE BOOK	SIM. NO.		
NO.	STRUCTURE NOTATNS CHKD		

Plotted by bgiannis
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10/24/2007

U.O.S.
SHEET 11 OF 1

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERSECTION DESIGN STUDY
IL 29 /SENACHWINE VALLEY ROAD INTERSECTION

PREPARED BY : CH2MHILL

JULY 2007

Illinois Department of Transportation
CH2MHILL

June 2010
Catalog No. 032469-00P

mfox
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17-MAR-2009

CAPACITY DESIGN STUDY

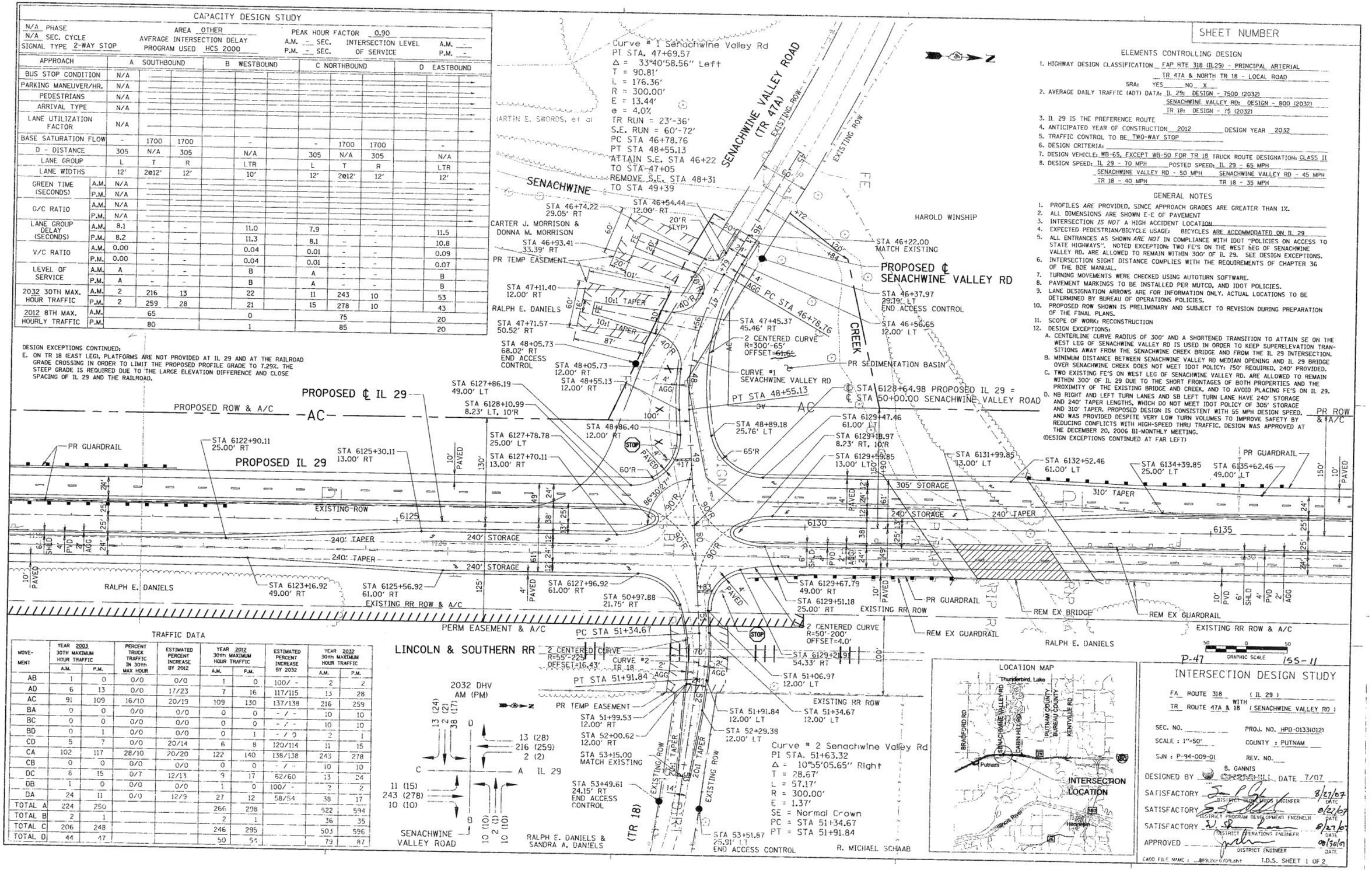
N/A PHASE
N/A SEC. CYCLE
SIGNAL TYPE 2-WAY STOP

AREA OTHER
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS 2000

PEAK HOUR FACTOR 0.90
A.M. __ SEC. INTERSECTION LEVEL A.M. __
P.M. __ SEC. OF SERVICE P.M. __

APPROACH		A SOUTHBOUND			B WESTBOUND		C NORTHBOUND			D EASTBOUND	
BUS STOP CONDITION		N/A									
PARKING MANEUVER/HR.		N/A									
PEDESTRIANS		N/A									
ARRIVAL TYPE		N/A									
LANE UTILIZATION FACTOR		N/A									
BASE SATURATION FLOW		-	1700	1700	-		-	1700	1700	-	
D - DISTANCE		305	N/A	305	N/A		305	N/A	305	N/A	
LANE GROUP		L	T	R	LTR		L	T	R	LTR	
LANE WIDTHS		12'	2@12'	12'	10'		12'	2@12'	12'	12'	
GREEN TIME (SECONDS)	A.M.	N/A									
	P.M.	N/A									
G/C RATIO	A.M.	N/A									
	P.M.	N/A									
LANE GROUP DELAY (SECONDS)	A.M.	8.1	-	-	11.0		7.9	-	-	11.5	
	P.M.	8.2	-	-	11.3		8.1	-	-	10.8	
V/C RATIO	A.M.	0.00	-	-	0.04		0.01	-	-	0.09	
	P.M.	0.00	-	-	0.04		0.01	-	-	0.07	
LEVEL OF SERVICE	A.M.	A	-	-	B		A	-	-	B	
	P.M.	A	-	-	B		A	-	-	B	
2032 30TH MAX. HOUR TRAFFIC	A.M.	2	216	13	22		11	243	10	53	
	P.M.	2	259	28	21		15	278	10	43	
2012 8TH MAX. HOURLY TRAFFIC	A.M.	65			0		75			20	
	P.M.	80			1		85			20	

DESIGN EXCEPTIONS CONTINUED:
E. ON TR 18 (EAST LEG), PLATFORMS ARE NOT PROVIDED AT IL 29 AND AT THE RAILROAD GRADE CROSSING IN ORDER TO LIMIT THE PROPOSED PROFILE GRADE TO 7.29%. THE STEEP GRADE IS REQUIRED DUE TO THE LARGE ELEVATION DIFFERENCE AND CLOSE SPACING OF IL 29 AND THE RAILROAD.



TRAFFIC DATA

MOVEMENT	YEAR 2003 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY 2012	YEAR 2012 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY 2032	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB	1	0	0/0	0/0	1	0	100/ -	2	2
AD	6	13	0/0	17/23	7	16	117/115	13	28
AC	91	109	16/10	20/19	109	130	137/138	216	259
BA	0	0	0/0	0/0	0	0	- / -	10	10
BC	0	0	0/0	0/0	0	0	- / -	10	10
BD	0	1	0/0	0/0	0	1	- / 0	2	1
CD	5	7	0/0	20/14	6	8	120/114	11	15
CA	102	117	28/10	20/20	122	140	138/138	243	278
CB	0	0	0/0	0/0	0	0	- / -	10	10
DC	8	15	0/7	12/13	9	17	62/60	13	24
DB	1	0	0/0	0/0	1	0	100/ -	2	2
DA	24	11	0/0	12/9	27	12	58/54	38	17
TOTAL A	224	250			266	298		522	594
TOTAL B	2	1			2	1		36	35
TOTAL C	206	248			246	295		503	596
TOTAL D	44	47			50	54		79	87

SHEET NUMBER

ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION FAP RTE 318 (IL29) - PRINCIPAL ARTERIAL
   TR 47A & NORTH TR 18 - LOCAL ROAD
   SRA: YES ___ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: IL 29: DESIGN - 7500 (2032)
   SENACHWINE VALLEY RD: DESIGN - 800 (2032)
   TR 18: DESIGN - 75 (2032)
3. IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE TWO-WAY STOP
6. DESIGN CRITERIA: ___
7. DESIGN VEHICLE: WB-65, EXCEPT WB-50 FOR TR 18 TRUCK ROUTE DESIGNATION: CLASS II
8. DESIGN SPEED: IL 29 - 70 MPH POSTED SPEED: IL 29 - 65 MPH
   SENACHWINE VALLEY RD - 50 MPH SENACHWINE VALLEY RD - 45 MPH
   TR 18 - 40 MPH TR 18 - 35 MPH

GENERAL NOTES

1. PROFILES *ARE* PROVIDED. SINCE APPROACH GRADES ARE GREATER THAN 1%.
2. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT
3. INTERSECTION *IS NOT* A HIGH ACCIDENT LOCATION
4. EXPECTED PEDESTRIAN/BICYCLE USAGE: BICYCLES ARE ACCOMMODATED ON IL 29
5. ALL ENTRANCES AS SHOWN *ARE NOT* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS". NOTED EXCEPTION: TWO FE'S ON THE WEST LEG OF SENACHWINE VALLEY RD. ARE ALLOWED TO REMAIN WITHIN 300' OF IL 29. SEE DESIGN EXCEPTIONS.
6. INTERSECTION SIGHT DISTANCE COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE BDE MANUAL.
7. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE.
8. PAVEMENT MARKINGS TO BE INSTALLED PER MUTCD, AND IDOT POLICIES.
9. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY BUREAU OF OPERATIONS POLICIES.
10. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF THE FINAL PLANS.
11. SCOPE OF WORK: RECONSTRUCTION
12. DESIGN EXCEPTIONS:
    A. CENTERLINE CURVE RADIUS OF 300' AND A SHORTENED TRANSITION TO ATTAIN SE ON THE WEST LEG OF SENACHWINE VALLEY RD IS USED IN ORDER TO KEEP SUPERELEVATION TRANSITIONS AWAY FROM THE SENACHWINE CREEK BRIDGE AND FROM THE IL 29 INTERSECTION.
    B. MINIMUM DISTANCE BETWEEN SENACHWINE VALLEY RD MEDIAN OPENING AND IL 29 BRIDGE OVER SENACHWINE CREEK DOES NOT MEET IDOT POLICY: 750' REQUIRED, 240' PROVIDED.
    C. TWO EXISTING FE'S ON WEST LEG OF SENACHWINE VALLEY RD. ARE ALLOWED TO REMAIN WITHIN 300' OF IL 29 DUE TO THE SHORT FRONTAGES OF BOTH PROPERTIES AND THE PROXIMITY OF THE EXISTING BRIDGE AND CREEK, AND TO AVOID PLACING FE'S ON IL 29.
    D. NB RIGHT AND LEFT TURN LANES AND SB LEFT TURN LANE HAVE 240' STORAGE AND 240' TAPER LENGTHS, WHICH DO NOT MEET IDOT POLICY OF 305' STORAGE AND 310' TAPER. PROPOSED DESIGN IS CONSISTENT WITH 55 MPH DESIGN SPEED, AND WAS PROVIDED DESPITE VERY LOW TURN VOLUMES TO IMPROVE SAFETY BY REDUCING CONFLICTS WITH HIGH-SPEED THRU TRAFFIC. DESIGN WAS APPROVED AT THE DECEMBER 20, 2006 BI-MONTHLY MEETING.

(DESIGN EXCEPTIONS CONTINUED AT FAR LEFT)

LOCATION MAP

INTERSECTION DESIGN STUDY

FA ROUTE 318 (IL 29) WITH
TR ROUTE 47A & 18 (SENACHWINE VALLEY RD)

SEC. NO. ___ PROJ. NO. HPD-0133(012)
SCALE : 1"=50' COUNTY : PUTNAM
SJN : P-94-009-01 REV. NO. ___

DESIGNED BY B. GANNIS DATE 7/07
SATISFACTORY DISTRICT GEOMETRICS ENGINEER DATE 8/27/07
SATISFACTORY DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE 8/27/07
SATISFACTORY DISTRICT OPERATIONS ENGINEER DATE 8/27/07
APPROVED DISTRICT ENGINEER DATE 08/30/07

CADD FILE NAME : ...8B9120-0709.sht T.D.S. SHEET 1 OF 2

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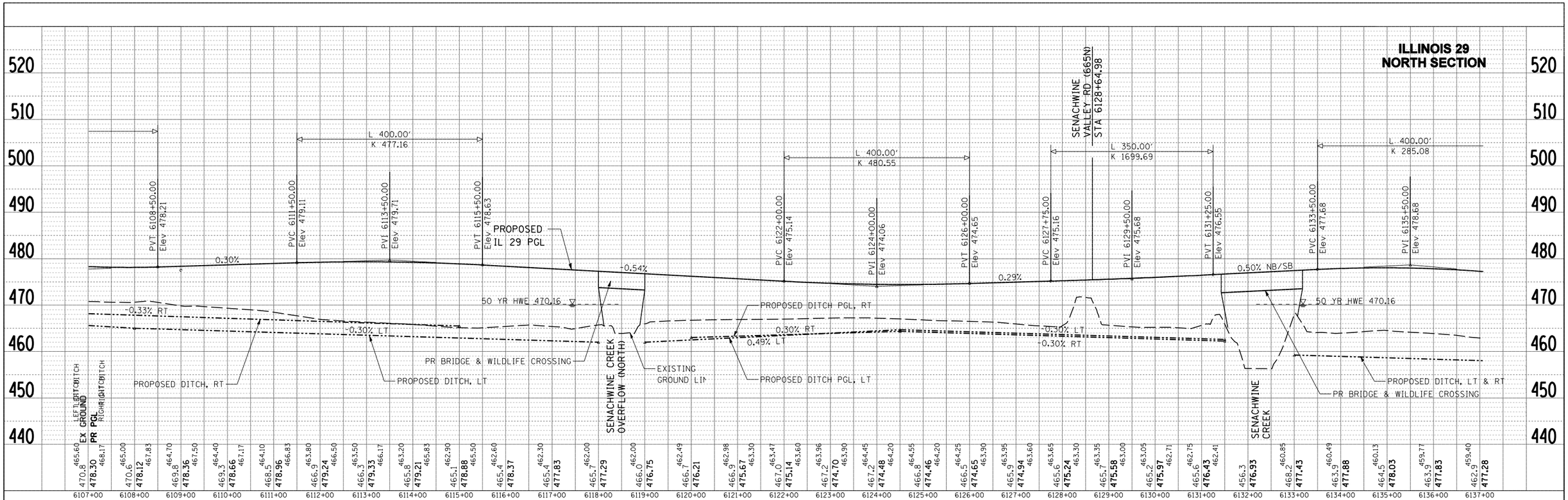
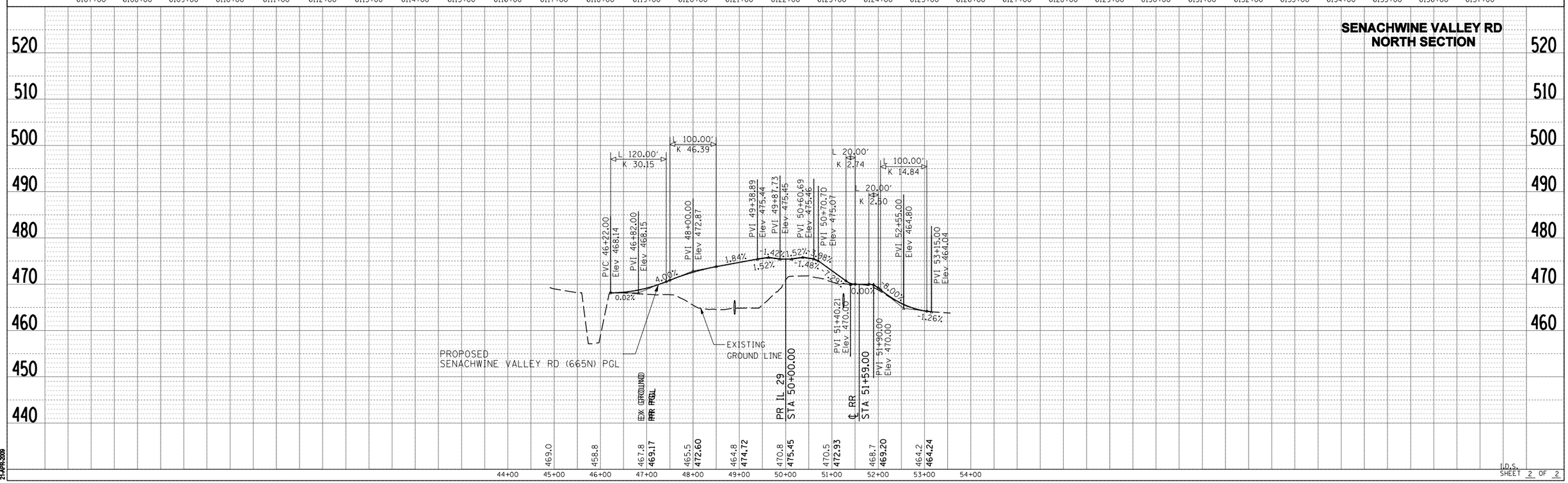
Plotted by bgannis
USER NAME = bgannis
7/30/2007





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NOTE BOOK
NO.
BY
DATE

PROFILE
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GRADES CHECKED
B.M. NOTED
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DATE

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21-APR-2009

I.D.S.
SHEET 2 OF 2

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERSECTION DESIGN STUDY
IL 29 / CABIN HILL ROAD INTERSECTION

PREPARED BY : CH2MHILL

MARCH 2007

June 2010
Catalog No. 032469-00P

Illinois Department of Transportation
CH2MHILL

mfox
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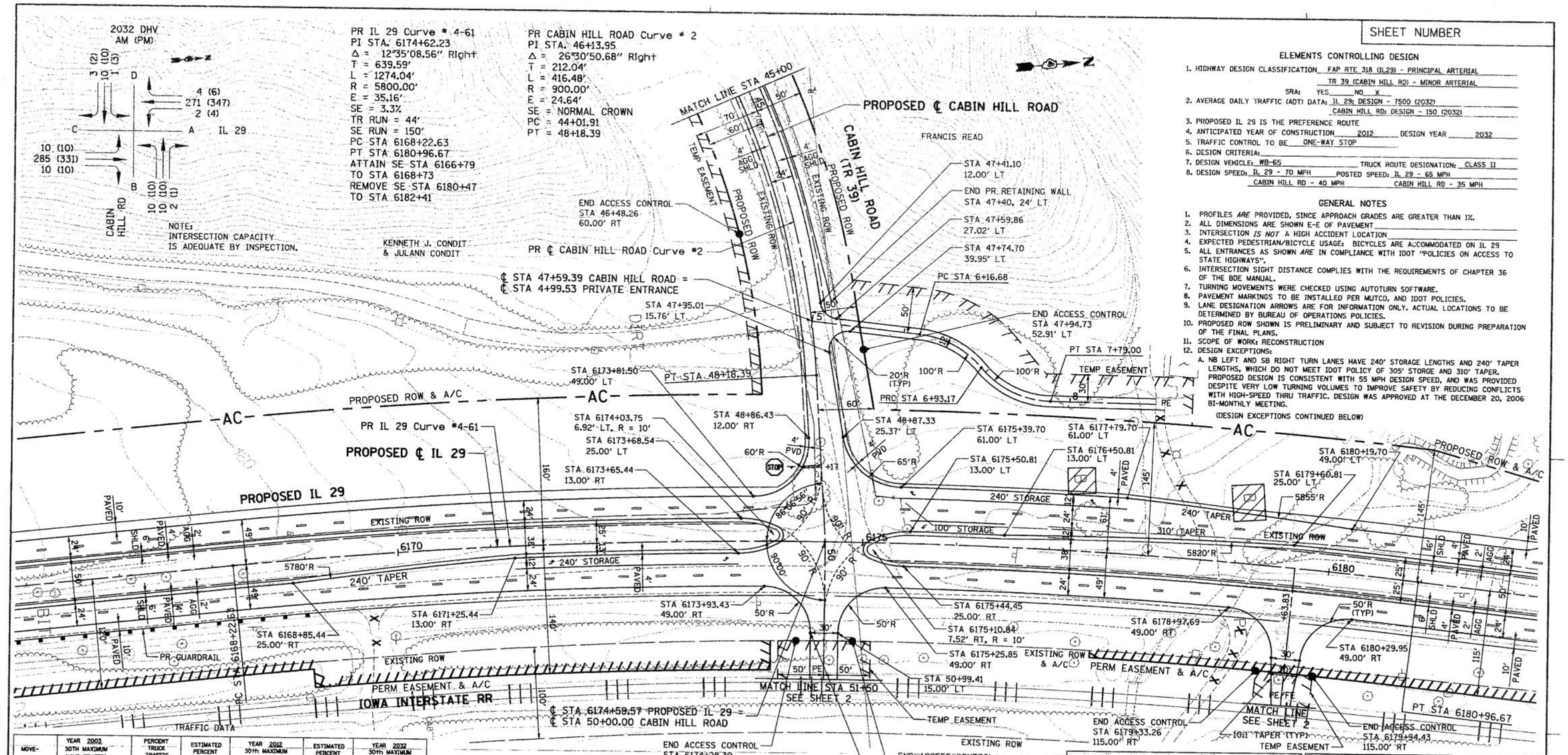
17-MAR-2009

SHEET NUMBER



ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION FAP RTE 318 (IL29) - PRINCIPAL ARTERIAL
   TR 39 (CABIN HILL RD) - MINOR ARTERIAL
   SRA: YES ____ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: IL 29: DESIGN - 7500 (2032)
   CABIN HILL RD: DESIGN - 150 (2032)
3. PROPOSED IL 29 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE ONE-WAY STOP
6. DESIGN CRITERIA: ____
7. DESIGN VEHICLE: WB-65 TRUCK ROUTE DESIGNATION: CLASS II
8. DESIGN SPEED: IL 29 - 70 MPH POSTED SPEED: IL 29 - 65 MPH
   CABIN HILL RD - 40 MPH CABIN HILL RD - 35 MPH

GENERAL NOTES

1. PROFILES *ARE* PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%.
2. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT.
3. INTERSECTION *IS NOT* A HIGH ACCIDENT LOCATION.
4. EXPECTED PEDESTRIAN/BICYCLE USAGE: BICYCLES ARE ACCOMMODATED ON IL 29
5. ALL ENTRANCES AS SHOWN *ARE* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
6. INTERSECTION SIGHT DISTANCE COMPLIES WITH THE REQUIREMENTS OF CHAPTER 36 OF THE BDE MANUAL.
7. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE.
8. PAVEMENT MARKINGS TO BE INSTALLED PER MUTCD, AND IDOT POLICIES.
9. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY BUREAU OF OPERATIONS POLICIES.
10. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF THE FINAL PLANS.
11. SCOPE OF WORK: RECONSTRUCTION
12. DESIGN EXCEPTIONS:

A. NB LEFT AND SB RIGHT TURN LANES HAVE 240' STORAGE LENGTHS AND 240' TAPER LENGTHS, WHICH DO NOT MEET IDOT POLICY OF 305' STORGE AND 310' TAPER. PROPOSED DESIGN IS CONSISTENT WITH 55 MPH DESIGN SPEED, AND WAS PROVIDED DESPITE VERY LOW TURNING VOLUMES TO IMPROVE SAFETY BY REDUCING CONFLICTS WITH HIGH-SPEED THRU TRAFFIC. DESIGN WAS APPROVED AT THE DECEMBER 20, 2006 BI-MONTHLY MEETING.

(DESIGN EXCEPTIONS CONTINUED BELOW)

MOVEMENT	YEAR 2003 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY 2012	YEAR 2012 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY 2032	YEAR 2032 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB	0	2	0/0	-/0	0	2	-/100	2	4
AD	2	3	0/0	0/33	2	4	100/50	4	6
AC	114	146	23/12	19/19	136	174	99/99	271	347
BA	0	1	0/0	-/10	0	1	-/0	2	1
BC	0	0	0	-	0	0	-	10	10
BD	0	0	0	-	0	0	-	10	10
CD	0	0	0	-	0	0	-	10	10
CA	120	139	20/8	19/19	143	166	99/99	285	331
CB	0	0	0	-	0	0	-	10	10
DC	2	0	0/0	0/-	2	0	50/-	3	2
DB	0	0	0	-	0	0	-	10	10
DA	1	2	0/0	0/0	1	2	0/50	1	3
TOTAL A	237	293			283	350		565	692
TOTAL B	0	3			0	3		44	45
TOTAL C	236	285			282	341		589	710
TOTAL D	5	5			6	6		38	41

DESIGN EXCEPTIONS CONTINUED:

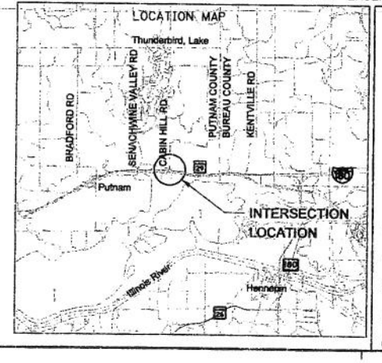
B. SB LEFT TURN LANE HAS 100' STORAGE LENGTH, WHICH DOES NOT MEET IDOT POLICY OF 305' STORAGE. PROPOSED DESIGN WAS PROVIDED DUE TO VERY LOW TURNING VOLUMES AND BECAUSE PREDOMINANT USERS WILL BE FAMILIAR WITH THE AREA. THE TURN LANE IMPROVES SAFETY BY REDUCING CONFLICTS WITH HIGH-SPEED THRU TRAFFIC. THE TURN LANE DESIGN WAS APPROVED AT THE DECEMBER 20, 2006 BI-MONTHLY MEETING.

C. THE ENTRANCES ON IL 29 NEAR STA 6175 AND STA 6180 DO NOT FOLLOW THE IDOT POLICY OF COMBINING CLOSELY SPACED ENTRANCES, HOWEVER THE SPACING EXCEEDS THE MINIMUM REQUIRED 500' WHEN MEASURED ℄ TO ℄. THE ENTRANCES ARE NOT COMBINED BECAUSE THE SERVICE DRIVE WOULD CROSS A CREEK NEAR STA 6178 CAUSING UNDESIRABLE BACKWATER ISSUES.

D. OFFSET FROM IL 29 OF PE ON CABIN HILL RD DOES NOT MEET IDOT POLICY: 155' PROVIDED, 300' REQUIRED. DESIRABLE OFFSET IS NOT FEASIBLE DUE TO RUGGED TERRAIN TO THE WEST. PROPOSED PE REPLACES AN EXISTING PE ACCESSED FROM IL 29.

E. ON THE PRIVATE ENTRANCE AT STA 6175, PLATFORMS ARE NOT PROVIDED AT IL 29 AND AT THE RAILROAD GRADE CROSSING IN ORDER TO REDUCE THE REQUIRED PROFILE GRADE. STEEP GRADES ARE REQUIRED DUE TO THE LARGE ELEVATION DIFFERENCE AND CLOSE SPACING OF IL 29 AND THE RAILROAD.

LOCATION MAP



INTERSECTION DESIGN STUDY

P47, 09

FA ROUTE 318 (IL 29)
WITH
TR ROUTE 39 (CABIN HILL RD)

SEC. NO. ____ PROJ. NO. HPD-0133(012)
SCALE: 1"=50' COUNTY: PUTNAM
SJN: P-94-009-01 REV. NO. ____

DESIGNED BY B. GANNIS CH2MHILL DATE 3/07
SATISFACTORY ____ DISTRICT GEOMETRICS ENGINEER DATE 8/30/07
SATISFACTORY ____ DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE 8-30-07
SATISFACTORY ____ DISTRICT OPERATIONS ENGINEER DATE 8/30/07
APPROVED ____ DISTRICT ENGINEER DATE 08/31/07

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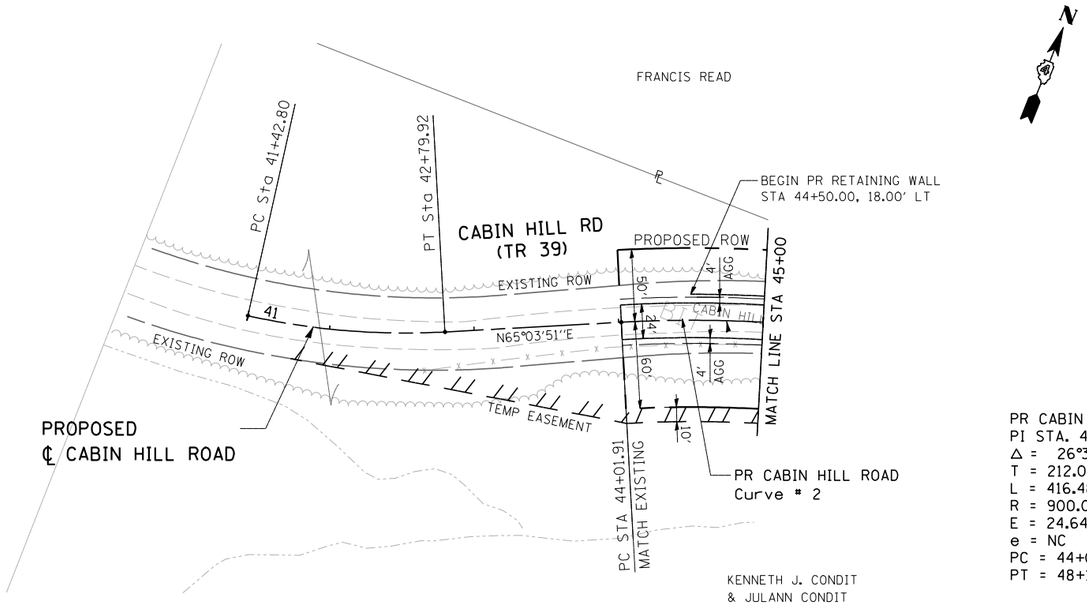
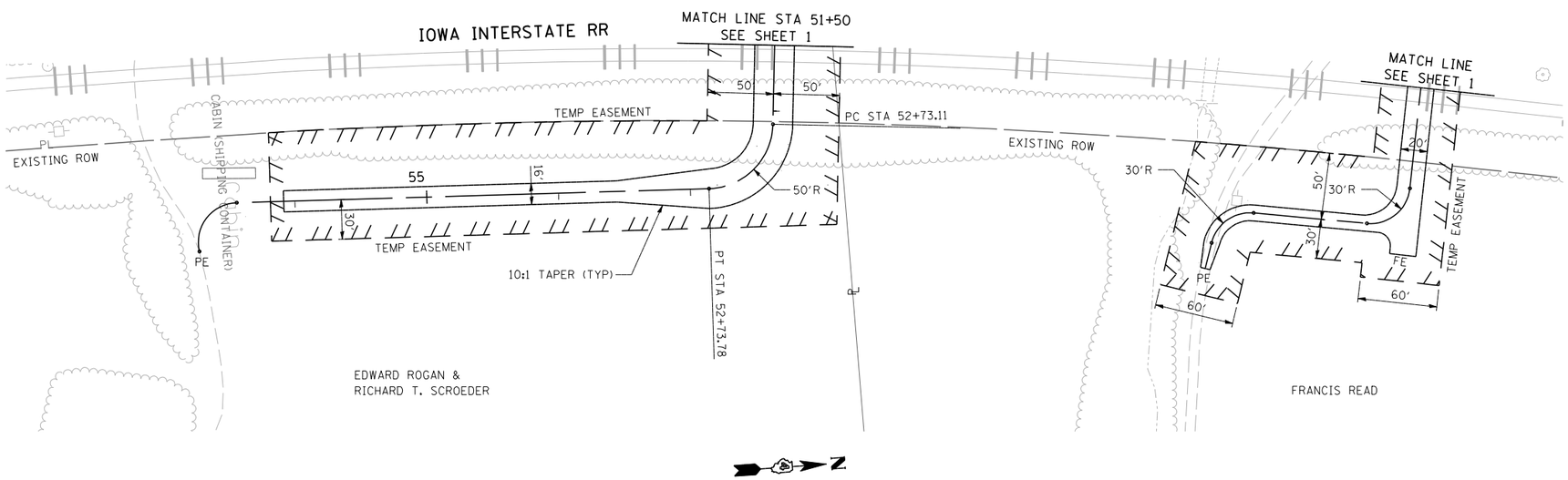


PR CABIN HILL ROAD Curve # 2
PI STA. 46+13.95
Δ = 26°30'50.68" Right
T = 212.04'
L = 416.48'
R = 900.00'
E = 24.64'
e = NC
PC = 44+01.91
PT = 48+18.39



INTERSECTION DESIGN STUDY

FA ROUTE 318 (IL 29)
WITH
TR ROUTE 39 (CABIN HILL RD)

SEC. NO. _____

SCALE 1"=50' COUNTY PUTNAM

SJN : P-94-009-01 PROJ. NO. HPD-0133(012)

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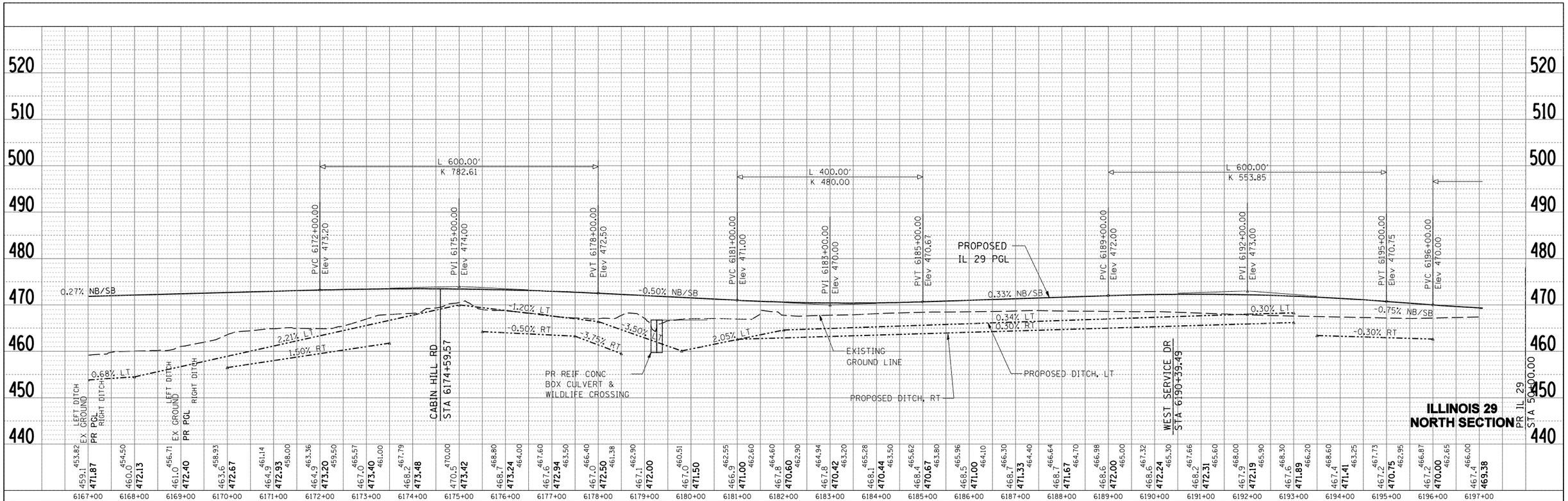

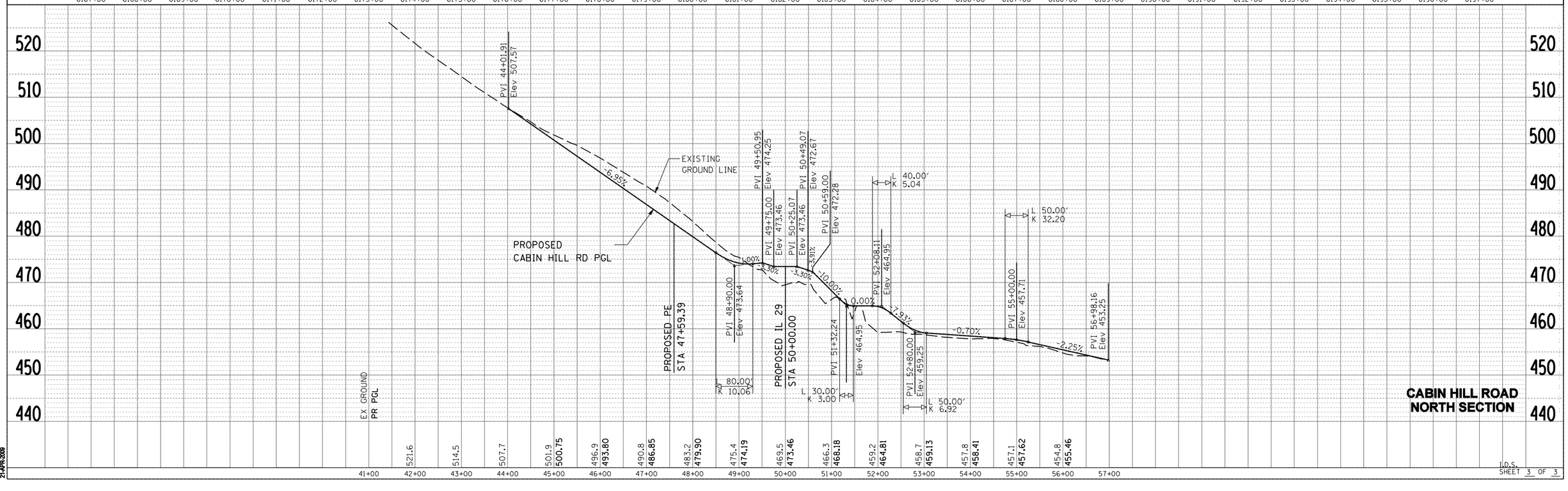

PLAN

NOTE BOOK NO.	SURVEYED 01/01/70 ALIGNMENT CHECKED RT. OF WAY CHECKED D-80 FILE NAME	BY	DATE

PROFILE

NOTE BOOK NO.	SURVEYED 01/01/70 GRADES CHECKED S.M. NOTED STRUCTURE NOTAT'NS CH'KD	BY	DATE

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21-APR-2009

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SHEET 3 OF 3

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FAP ROUTE 318 (IL 29)
PEORIA, MARSHALL, PUTNAM & BUREAU COUNTIES

INTERSECTION DESIGN STUDY
IL 29 / KENTVILLE ROAD INTERSECTION

PREPARED BY : CH2MHILL

JUNE 2007

Illinois Department of Transportation
CH2MHILL

June 2010
Catalog No. 032469-00P

mfox
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17-MAR-2009

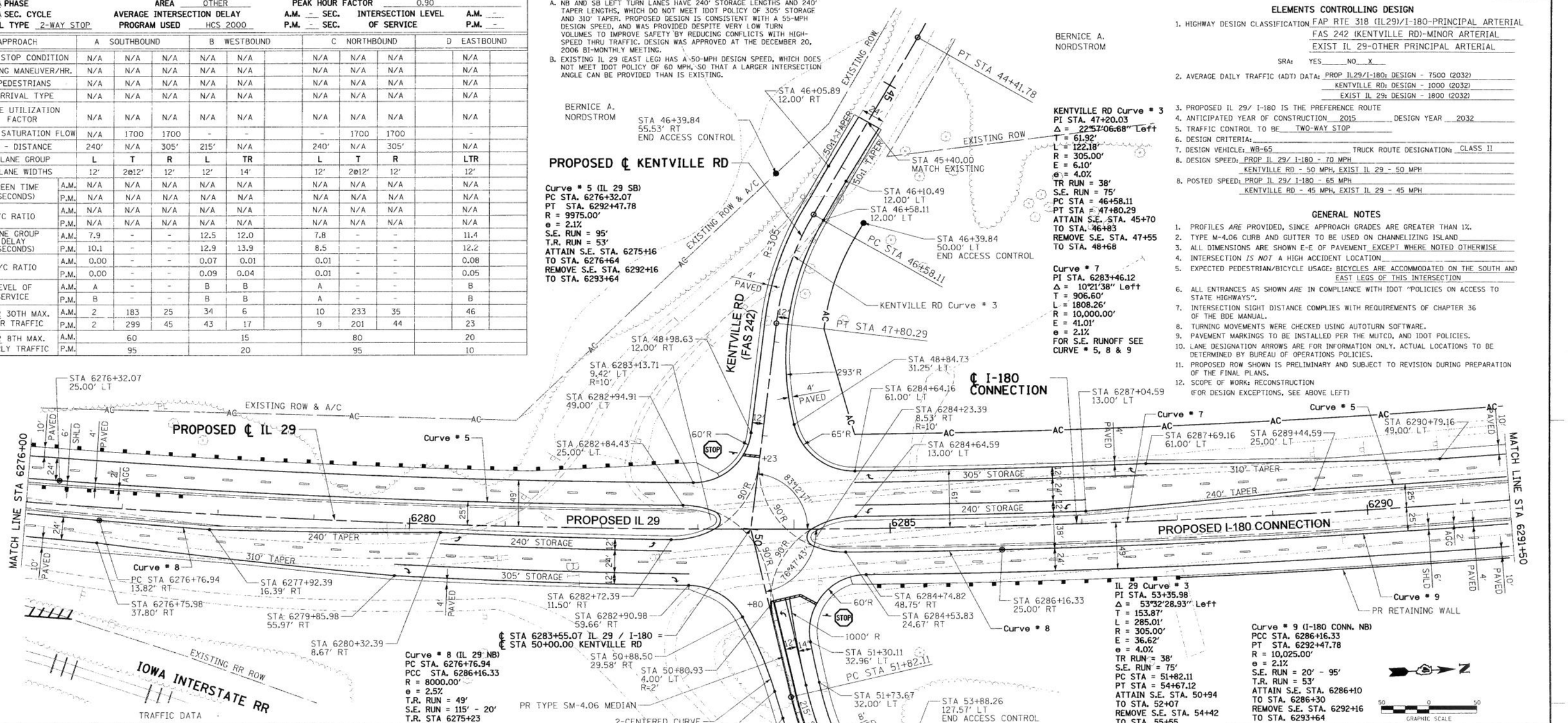
SHEET NUMBER

CAPACITY DESIGN STUDY

N/A PHASE — AREA OTHER — PEAK HOUR FACTOR 0.90
N/A SEC. CYCLE — AVERAGE INTERSECTION DELAY — A.M. – SEC. — INTERSECTION LEVEL OF SERVICE — A.M. –
SIGNAL TYPE 2-WAY STOP — PROGRAM USED HCS 2000 — P.M. – SEC. — P.M. –

APPROACH		A SOUTHBOUND			B WESTBOUND		C NORTHBOUND			D EASTBOUND
BUS STOP CONDITION		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PARKING MANEUVER/HR.		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PEDESTRIANS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ARRIVAL TYPE		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LANE UTILIZATION FACTOR		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
BASE SATURATION FLOW		N/A	1700	1700	-	-	-	1700	1700	-
D - DISTANCE		240'	N/A	305'	215'	N/A	240'	N/A	305'	N/A
LANE GROUP		L	T	R	L	TR	L	T	R	LTR
LANE WIDTHS		12'	2@12'	12'	12'	14'	12'	2@12'	12'	12'
GREEN TIME (SECONDS)	A.M.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	P.M.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
G/C RATIO	A.M.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	P.M.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LANE GROUP DELAY (SECONDS)	A.M.	7.9	-	-	12.5	12.0	7.8	-	-	11.4
	P.M.	10.1	-	-	12.9	13.9	8.5	-	-	12.2
V/C RATIO	A.M.	0.00	-	-	0.07	0.01	0.01	-	-	0.08
	P.M.	0.00	-	-	0.09	0.04	0.01	-	-	0.05
LEVEL OF SERVICE	A.M.	A	-	-	B	B	A	-	-	B
	P.M.	B	-	-	B	B	A	-	-	B
2032 30TH MAX. HOUR TRAFFIC	A.M.	2	183	25	34	6	10	233	35	46
	P.M.	2	299	45	43	17	9	201	44	23
2012 8TH MAX. HOURLY TRAFFIC	A.M.	60			15		80			20
	P.M.	95			20		95			10

13. DESIGN EXCEPTIONS:
A. NB AND SB LEFT TURN LANES HAVE 240' STORAGE LENGTHS AND 240' TAPER LENGTHS, WHICH DO NOT MEET IDOT POLICY OF 305' STORAGE AND 310' TAPER. PROPOSED DESIGN IS CONSISTENT WITH A 55-MPH DESIGN SPEED, AND WAS PROVIDED DESPITE VERY LOW TURN VOLUMES TO IMPROVE SAFETY BY REDUCING CONFLICTS WITH HIGH-SPEED THRU TRAFFIC. DESIGN WAS APPROVED AT THE DECEMBER 20, 2006 BI-MONTHLY MEETING.
B. EXISTING IL 29 (EAST LEG) HAS A 50-MPH DESIGN SPEED, WHICH DOES NOT MEET IDOT POLICY OF 60 MPH, SO THAT A LARGER INTERSECTION ANGLE CAN BE PROVIDED THAN IS EXISTING.



TRAFFIC DATA

MOVEMENT	YEAR 2001 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY 2012	YEAR ___ 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY 2032	YEAR ___ 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB	1	1	0/100	0/0	1	1	100/100	2	2
AD	10	18	40/11	20/22	12	22	150/150	25	45
AC	74	121	13/13	24/24	92	150	147/147	183	299
BA	1	1	0/0	0/0	1	1	100/100	2	2
BC	18	23	33/9	17/13	21	26	89/87	34	43
BD	2	8	50/25	0/12	2	9	100/88	4	15
CD	4	5	0/20	25/20	5	6	150/140	10	12
CA	94	109	14/16	24/25	117	136	148/148	233	270
CB	14	24	7/4	21/25	17	30	150/146	35	59
DC	6	5	17/20	17/20	7	6	67/80	10	9
DB	3	3	67/67	0/0	3	3	67/67	5	5
DA	18	5	11/0	17/20	21	6	72/80	31	9
TOTAL A	198	255			244	316		476	627
TOTAL B	39	60			46	71		82	126
TOTAL C	210	287			259	354		505	692
TOTAL D	43	44			51	53		85	95

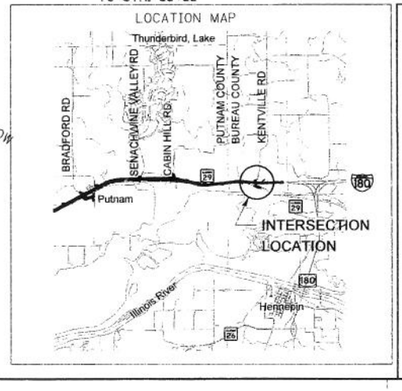
ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION FAP RTE 318 (IL29)/I-180-PRINCIPAL ARTERIAL
FAS 242 (KENTVILLE RD)-MINOR ARTERIAL
EXIST IL 29-OTHER PRINCIPAL ARTERIAL
SRA: YES ___ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA: PROP IL29/I-180: DESIGN - 7500 (2032)
KENTVILLE RD: DESIGN - 1000 (2032)
EXIST IL 29: DESIGN - 1800 (2032)
3. PROPOSED IL 29/ I-180 IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2015 DESIGN YEAR 2032
5. TRAFFIC CONTROL TO BE TWO-WAY STOP
6. DESIGN CRITERIA:
7. DESIGN VEHICLE: WB-65 TRUCK ROUTE DESIGNATION: CLASS II
8. DESIGN SPEED: PROP IL 29/ I-180 - 70 MPH
KENTVILLE RD - 50 MPH, EXIST IL 29 - 50 MPH
8. POSTED SPEED: PROP IL 29/ I-180 - 65 MPH
KENTVILLE RD - 45 MPH, EXIST IL 29 - 45 MPH

GENERAL NOTES

1. PROFILES *ARE* PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1%.
2. TYPE M-4.06 CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND
3. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT EXCEPT WHERE NOTED OTHERWISE
4. INTERSECTION *IS NOT* A HIGH ACCIDENT LOCATION
5. EXPECTED PEDESTRIAN/BICYCLE USAGE: BICYCLES ARE ACCOMMODATED ON THE SOUTH AND EAST LEGS OF THIS INTERSECTION
6. ALL ENTRANCES AS SHOWN *ARE* IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
7. INTERSECTION SIGHT DISTANCE COMPLIES WITH REQUIREMENTS OF CHAPTER 36 OF THE BDE MANUAL.
8. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SOFTWARE.
9. PAVEMENT MARKINGS TO BE INSTALLED PER THE MUTCD, AND IDOT POLICIES.
10. LANE DESIGNATION ARROWS ARE FOR INFORMATION ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY BUREAU OF OPERATIONS POLICIES.
11. PROPOSED ROW SHOWN IS PRELIMINARY AND SUBJECT TO REVISION DURING PREPARATION OF THE FINAL PLANS.
12. SCOPE OF WORK: RECONSTRUCTION
(FOR DESIGN EXCEPTIONS, SEE ABOVE LEFT)

LOCATION MAP



INTERSECTION DESIGN STUDY

FAP ROUTE 318 (IL 29 / I-180 CONN.)
WITH
FAS ROUTE 242 (KENTVILLE RD)

SEC. NO. ___ PROJ. NO. HPD-0133 (012)
SCALE 1" = 50' COUNTY BUREAU
SJN : P-94-009-01 REV. NO. ___

DESIGNED BY B. GANNIS DATE 06/07
SATISFACTORY DISTRICT GEOMETRIC ENGINEER 6-27-07 DATE
SATISFACTORY DISTRICT PROGRAM DEVELOPMENT ENGINEER 6-27-07 DATE
SATISFACTORY DISTRICT OPERATIONS ENGINEER 7/16/07 DATE
APPROVED DISTRICT ENGINEER 7/16/07 DATE

CADD FILE NAME : ...68912cr6701.sht I.D.S. SHEET 1 OF 5

Curve # 4 (IL 29 SB)
PC STA. 6259+36.71
PT STA. 6267+75.45
R = 3461.00'
e = 4.9%
T.R. RUN = 56'-40'
S.E. RUN = 220'
ATTAIN S.E. STA. 6257+34
TO STA. 6260+10
REMOVE S.E. STA. 6267+02
TO STA. 6269+62

STA 6266+54.95
81.42' LT
END ACCESS CONTROL

STA 6267+06.13
82.48' LT
END ACCESS CONTROL

MILLER ANDERSON WOODS
NATURE PRESERVE / NATURAL AREA

PT STA 6267+75.45
11.00' LT

PROPOSED CONCRETE
MEDIAN BARRIER

PR BRIDGES AND
WILDLIFE CROSSING LOCATION

BERNICE A. NORDSTROM

Curve # 6
PC STA. 6259+36.71
PT STA. 6268+41.88
Δ = 15°01'57" Right
T = 455.20'
L = 905.17'
R = 3450.00'
E = 29.90'
e = 4.9%
NB ROADWAY:
T.R. RUN = 40'
S.E. RUN = 130'-220'
ATTAIN S.E. STA. 6258+50
TO STA. 6259+80
REMOVE S.E. STA. 6267+69
TO STA. 6270+29

CURVE #4
CURVE #6
CURVE #7
PR RETAINING WALL
PROPOSED ℄ IL 29
PROPOSED IL 29
PROPOSED A/C LINE
EXISTING ROW & PROPOSED A/C LINE
PC STA. 6274+39.52
MATCH LINE STA 6276+00
EXISTING ROW
PERM EASEMENT & A/C
IOWA INTERSTATE RR
PR RETAINING WALL
STA 6264+09.00
70.00' RT
END ACCESS CONTROL
TEMP EASEMENT
PT STA 6268+41.88
STA 6269+00.00
70.00' RT
END ACCESS CONTROL
DRAKES GROUNDS, INC.
CARMI R. MILLER

Curve # 7
PI STA. 6283+46.12
Δ = 10°21'38" Left
T = 906.60'
L = 1808.26'
R = 10,000.00'
E = 41.01'
e = 2.1%
FOR S.E. RUNOFF SEE
CURVE # 5, 8 & 9

Curve # 5 (IL 29 SB)
PC STA. 6276+32.07
PT STA. 6292+47.78
R = 9975.00'
e = 2.1%
S.E. RUN = 95'
T.R. RUN = 53'
ATTAIN S.E. STA. 6275+16
TO STA. 6276+64
REMOVE S.E. STA. 6292+16
TO STA. 6293+64

CURVE #5
CURVE #7
CURVE #9
PT STA 6292+47.78
PROPOSED ℄ I-180 CONNECTION
PROPOSED I-180 CONNECTION
MATCH LINE STA 6291+50
PR RETAINING WALL

Curve # 9 (I-180 CONN. NB)
PCC STA. 6286+16.33
PT STA. 6292+47.78
R = 10,025.00'
e = 2.1%
S.E. RUN = 20' - 95'
T.R. RUN = 53'
ATTAIN S.E. STA. 6286+10
TO STA. 6286+30
REMOVE S.E. STA. 6292+16
TO STA. 6293+64

Curve # 7
PI STA. 6283+46.12
Δ = 10°21'38" Left
T = 906.60'
L = 1808.26'
R = 10,000.00'
E = 41.01'
e = 2.1%
FOR S.E. RUNOFF SEE
CURVE # 5, 8 & 9

EXISTING ROW & PROPOSED A/C LINE

GRAPHIC SCALE

INTERSECTION DESIGN STUDY

FA ROUTE 318 ((IL 29) / I-180 CONN.
FAS ROUTE 242 WITH (KENTVILLE RD)

SEC. NO. _____
SCALE 1"=50'
SJN : _____
COUNTY BUREAU
PROJ. NO. _____
I.D.S. SHEET 2 OF 5

•DGN-SPEC•
•DATE-TIME•
•REF-
•REF-
•REF-

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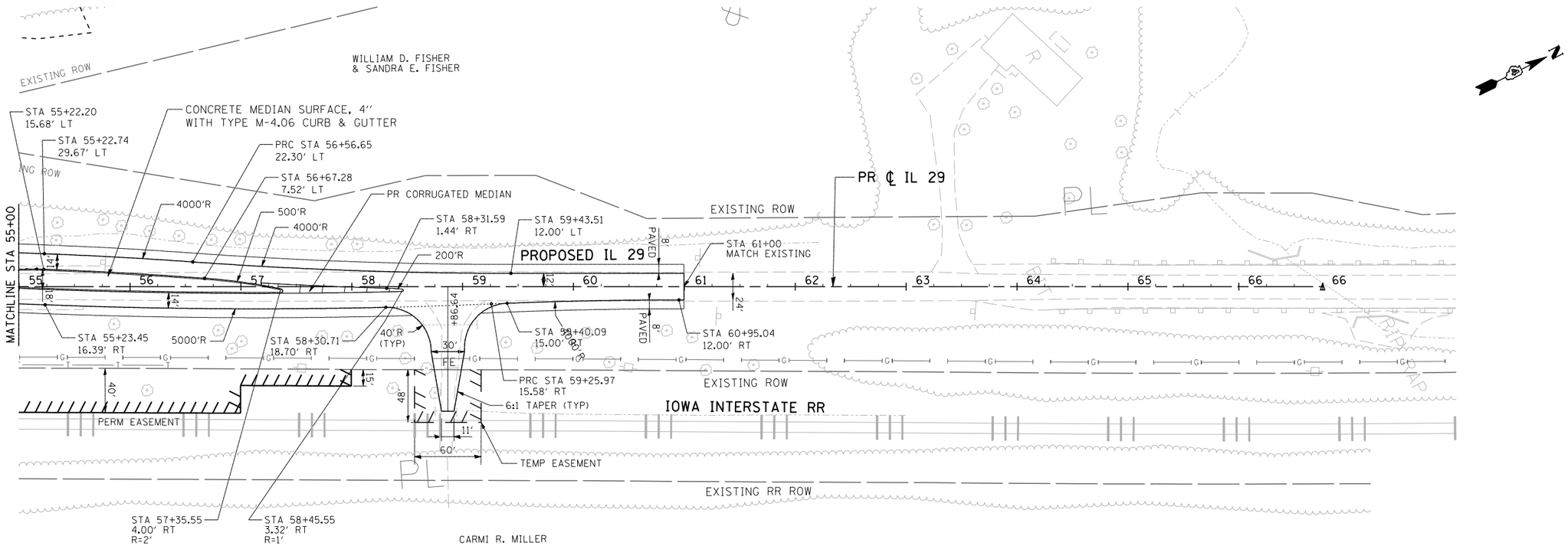

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GRAPHIC SCALE

INTERSECTION DESIGN STUDY

FA ROUTE 318 (IL 29) / I-180 CONN.
FAS ROUTE 242 WITH (KENTVILLE RD)

SEC. NO. _____

SCALE 1"=50' COUNTY BUREAU

SJN : P-94-009-01 PROJ. NO. HPD-0133 (012)

I.D.S. SHEET 3 OF 5

BDE-9808

•DGN-SPEC•
•DATE-TIME•
•REF-
•REF-
•REF-
•REF-

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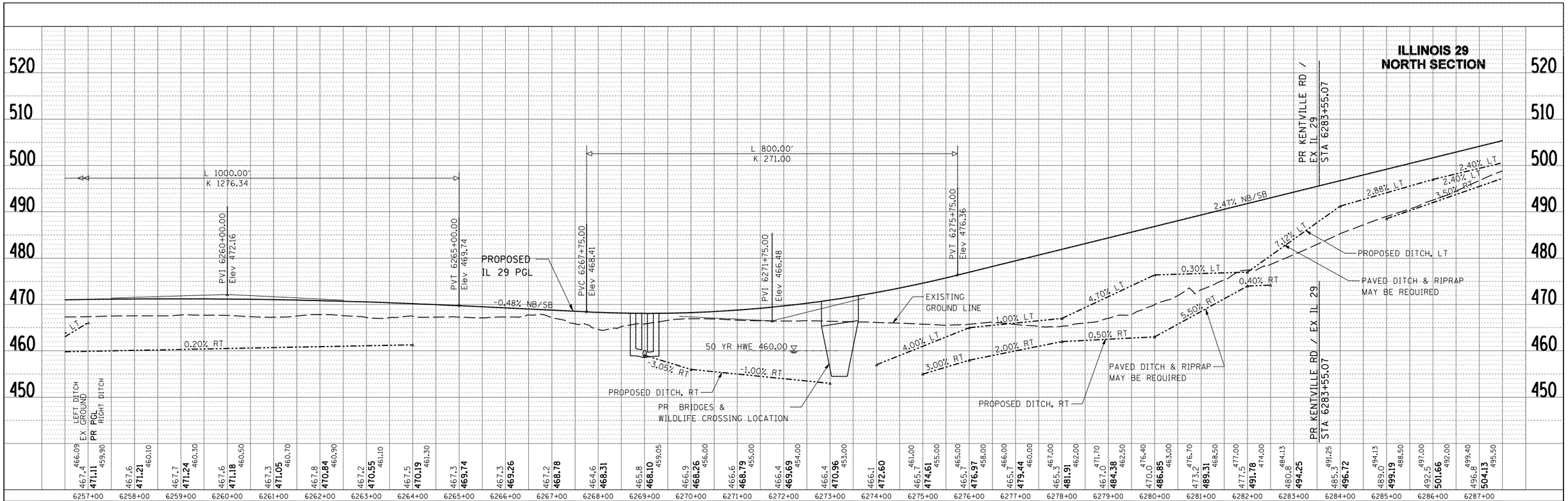

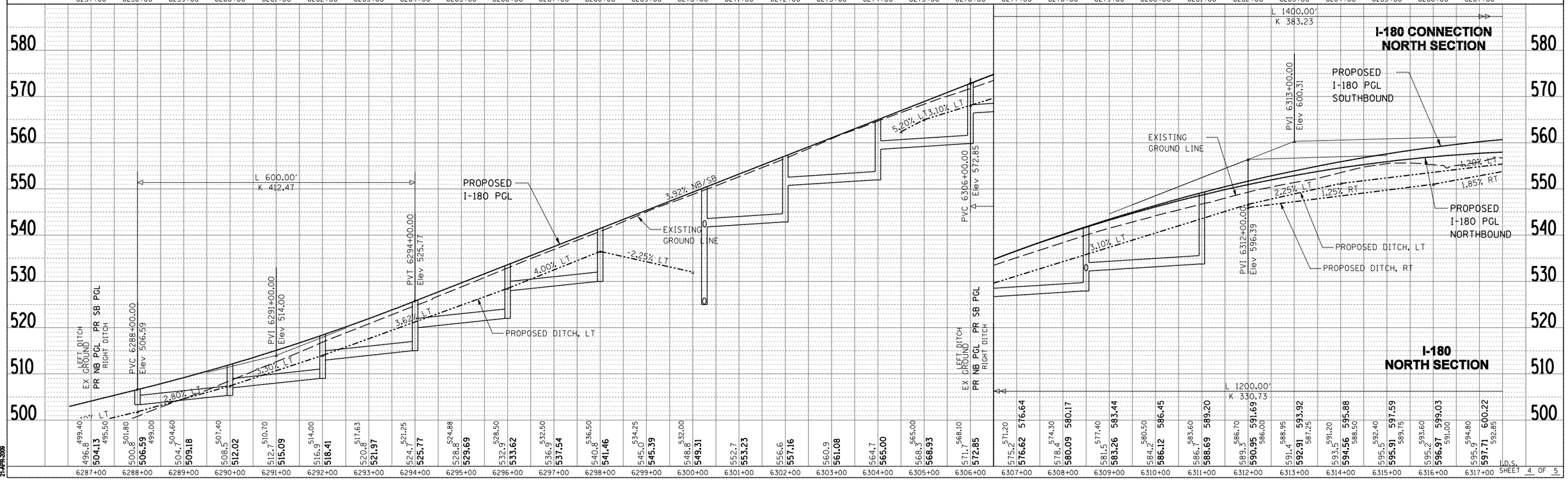

PLAN		BY	DATE
SURVEYED			
PLOTTED			
ALIGNMENT CHECKED			
RT. OF WAY CHECKED			
NOTE BOOK	CADD FILE NAME		
NO.			

PROFILE		BY	DATE
SURVEYED			
PLOTTED			
GRADES CHECKED			
B.M. NOTED			
NOTE BOOK	STRUCTURE NOTATNS CH'KD		
NO.			

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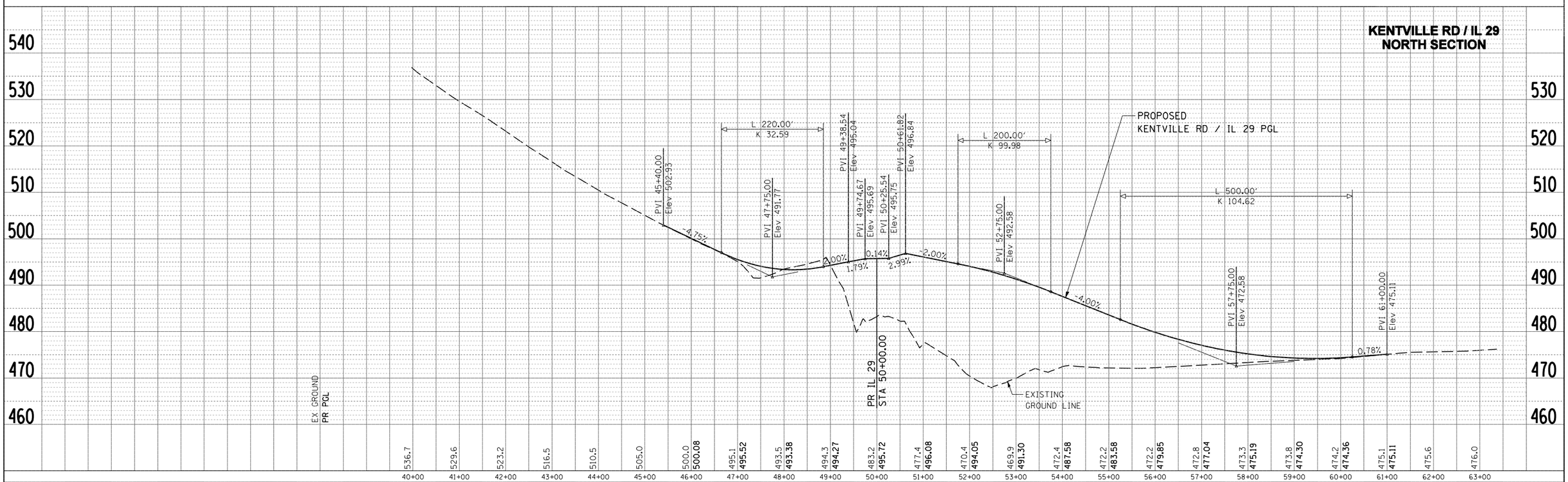
SHEET 4 OF 5

KENTVILLE RD / IL 29
NORTH SECTION



PLAN

		BY	DATE
SURVEYED			
PLOTTED			
ALIGNMENT CHECKED			
RT. OF WAY CHECKED			
NOTE BOOK	PLAN FILE NAME		
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PROFILE

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GRADES CHECKED			
B.M. NOTED			
NOTE BOOK	STRUCTURE NOTATNS CH'KD		
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SHEET 5 OF 5