



Illinois Department of Transportation

To: Keith Roberts Attn: Carrie Nelsen
From: Jack A. Elston By: Michael Brand *msb*
Subject: Pavement Design Approval
Date: April 26, 2019

Route: IL 13 / IL 127 Job No.:
Section: 13N-1,(13-1)N-2 Contract No.: 78660
County: Jackson Target Letting:
Limits: South of Ava Road to 2000 feet north of Grange Hall Road

On April 24, 2019, the Pavement Selection Committee met to review the pavement design for the above referenced project which was submitted on April 2, 2019. The scope of the project is to reconstruct the existing roadway/intersections to provide a 4-lane section and convert the two intersections to restricted U-turn crossings (RCUTs) and it involves approximately 29,000 square yards of new pavement and widening.

The Pavement Selection Committee concurred with the District that the life cycle cost analysis did not favor any option by more than ten percent and that alternate bidding was not a viable option.

In summary, the pavement design selected by the Committee is as follows:

<u>New Pavement</u>	<u>Pavement Widening</u>
11.5" Full-Depth HMA Pavement	9.5" HMA Widening with HMA Overlay
8" HMA Shoulders	8" HMA Shoulders
12" Improved Subgrade	12" Improved Subgrade

If you have any questions, please contact Mike Brand at (217) 782-7651.

- HMA has lower initial cost and lower life-cycle cost analysis

The Mechanistic design resulted in a Full Depth HMA Design Thickness of 11 ½" inches or a Jointed Plain Concrete Pavement design thickness of 9 inches with 4" of stabilized subbase. Both designs require 12 inches of improved subgrade.

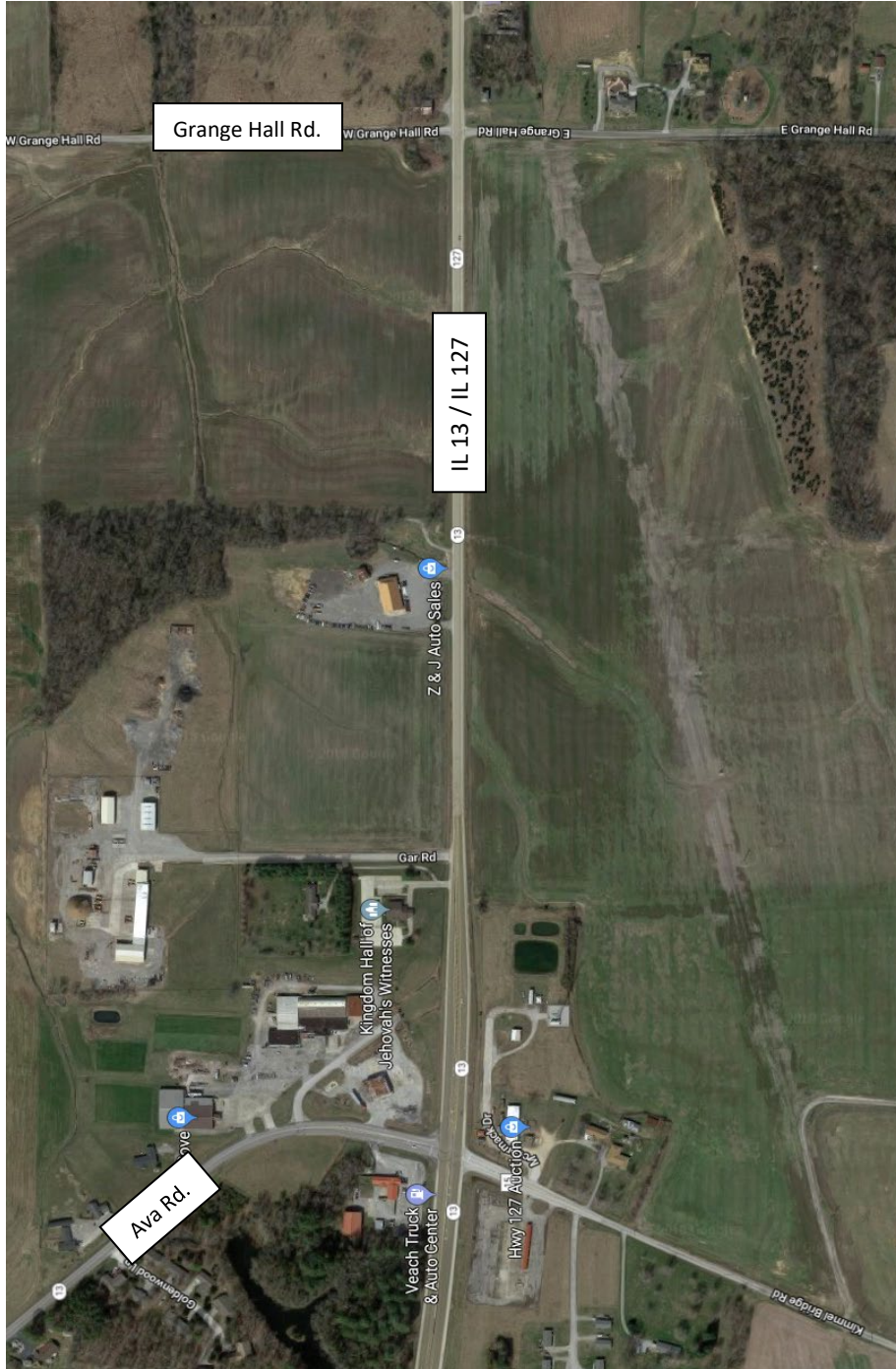
Chapter 54 in the BDE Manual suggests Alternate Bid Consideration with review by the Pavement Selection Committee due to the Life-Cycle Cost difference being less than 10%. However, for the above stated reasons, the District recommends HMA pavement for the entire project.

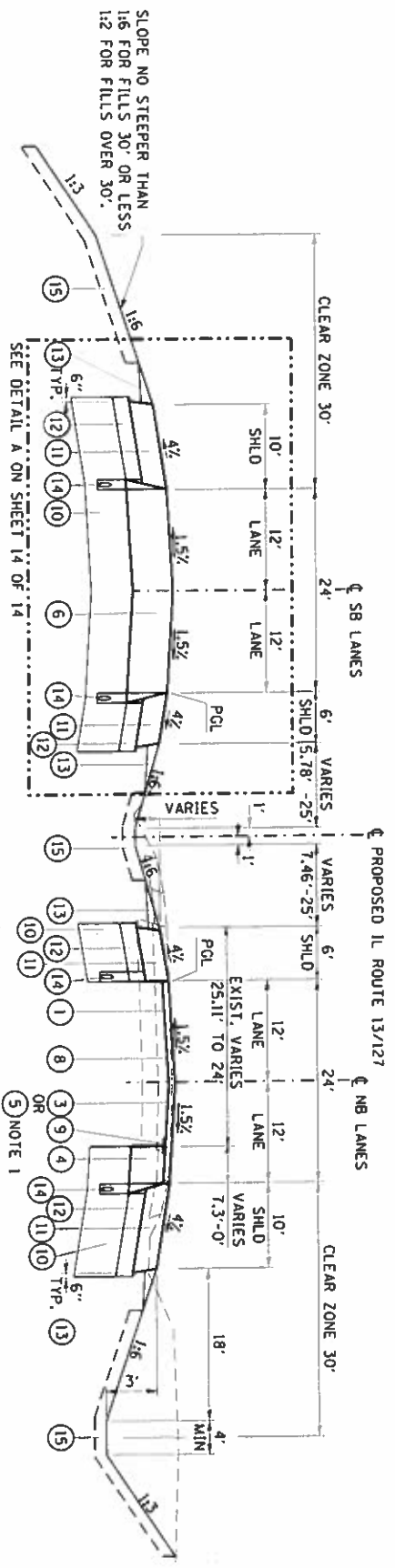
This project is scheduled for the March 6, 2020 letting. The PS&E submittal is December 13, 2019.

Please review the attached Report and approve or provide comments. If you have any questions, please contact Sean Greenlee at (618) 351-5310 or Susan Poe at (618) 351-5213.

LOCATION MAP

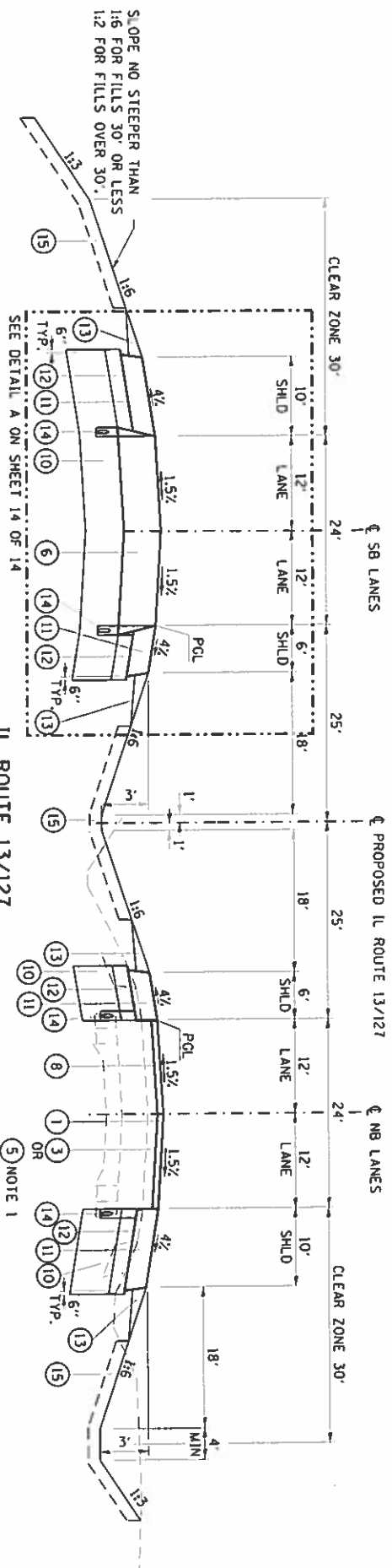
Intersection of IL 13/127 with Ava Rd. and Grange Hall Rd.





PROPOSED TANGENT TYPICAL SECTION
 IL ROUTE 13/127
 STA 2529+45.38 TO STA 2542+25.02

MEDIAN WIDTH: 25'
 STA. 2538+29.41 LT.
 STA. 2540+04.68 RT



PROPOSED TANGENT TYPICAL SECTION
 IL ROUTE 13/127
 STA 2542+25.02 TO STA 2761+62.33

STA 2542+25.02 TO STA 2546+43.00
 STA 2560+60.47 TO STA 2575+06.73
 STA 2660+00.00 TO STA 2670+03.63
 STA 2693+30.24 TO STA 2705+82.27
 STA 2719+50.47 TO STA 2728+04.73
 STA 2759+09.93 TO STA 2761+62.33

LEGEND

- 1 PROPOSED HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N90, 1 1/2"
- 2 PROPOSED LEVELING BINDER (MACHINE METHOD), IL-9.5FG, N90, 3/4"
- 3 PROPOSED LEVELING BINDER (MACHINE METHOD), IL-9.5FG, N90, VARIABLE DEPTH
- 4 PROPOSED HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N90, 9 1/2"
- 5 PROPOSED HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N90, VARIABLE DEPTH
- 6 PROPOSED HOT-MIX ASPHALT PAVEMENT, FULL DEPTH, 11 1/2"
- 7 PROPOSED HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N90, 2"
- 8 HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N90, 9 1/2"
- 9 PROPOSED PAVEMENT CONNECTOR (GMA) FOR BRIDGE APPROACH SLAB
- 10 PROPOSED BITUMINOUS MATERIALS (TACK COAT)
- 11 PROPOSED STRIP REFLECTIVE CRACK CONTROL TREATMENT
- 12 PROPOSED LIME MODIFIED SOIL, 12"
- 13 PROPOSED HOT-MIX ASPHALT SHOULDER, 8"
- 14 PROPOSED SUBBASE GRANULAR MATERIAL, TYPE C
- 15 PROPOSED AGGREGATE WEDGE SHOULDER, TYPE B
- 16 PROPOSED PIPE UNDERDRAINS 4"
- 17 PROPOSED TOPSOIL EXCAVATION AND PLACEMENT, 6"

NOTE 1: SEE RESURFACING TABLE FOR THICKNESSES.

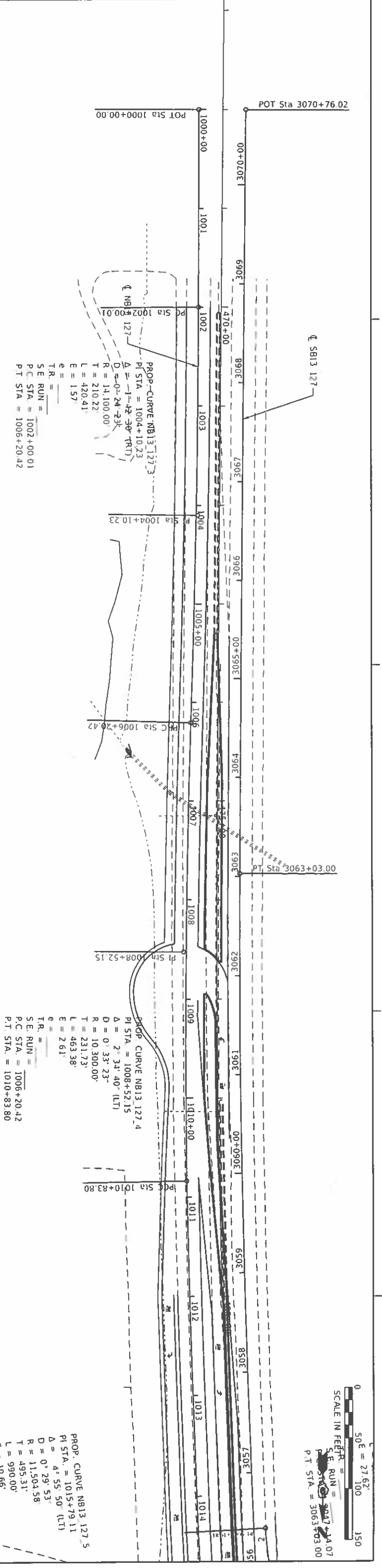
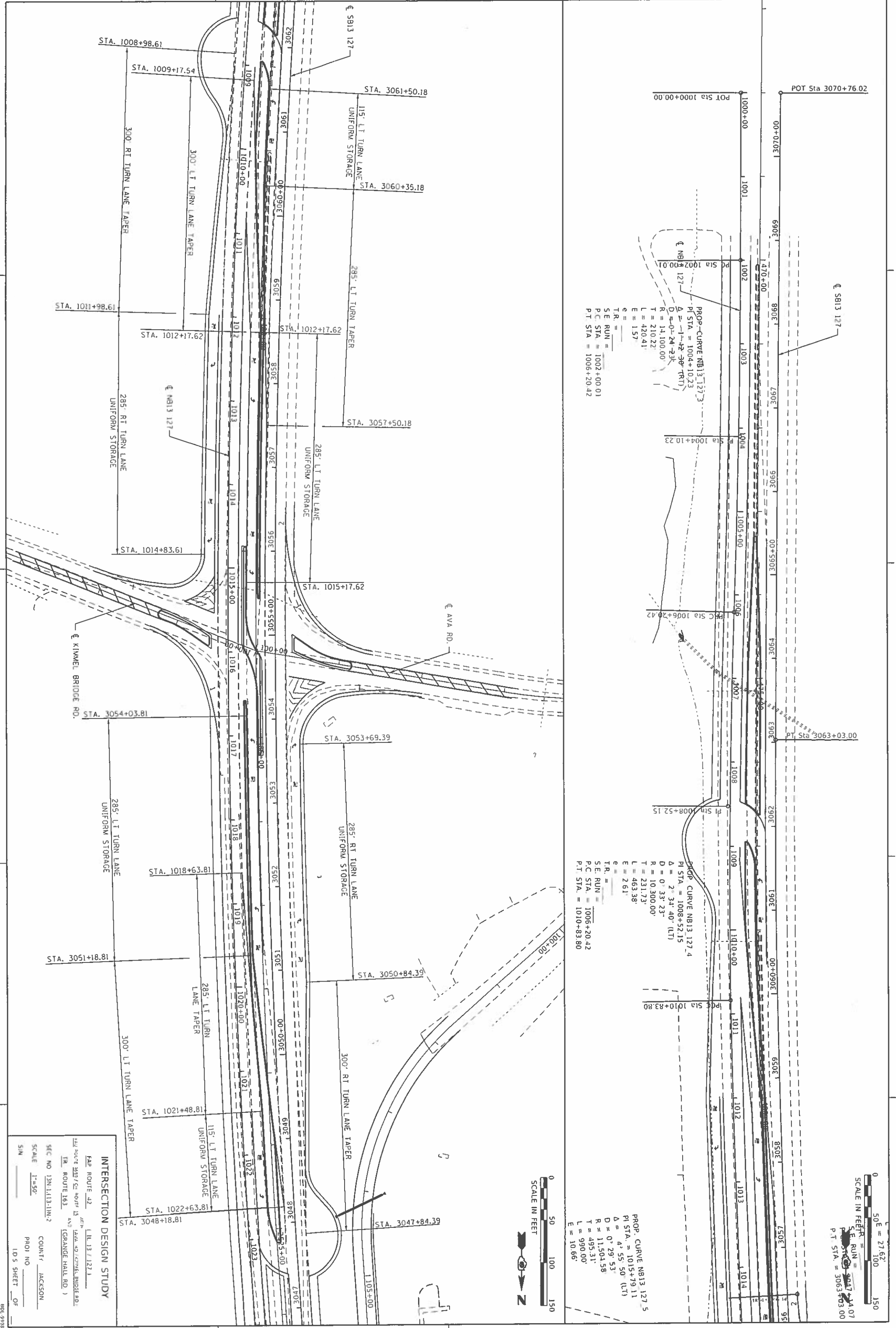


DESIGNED	ESW	REVISION	
DRAWN	PJB	REVISION	
CHECKED	CLW	REVISION	
DATE	01-11-16	REVISION	

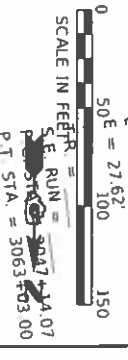
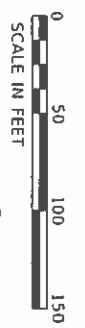
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

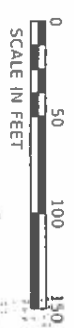
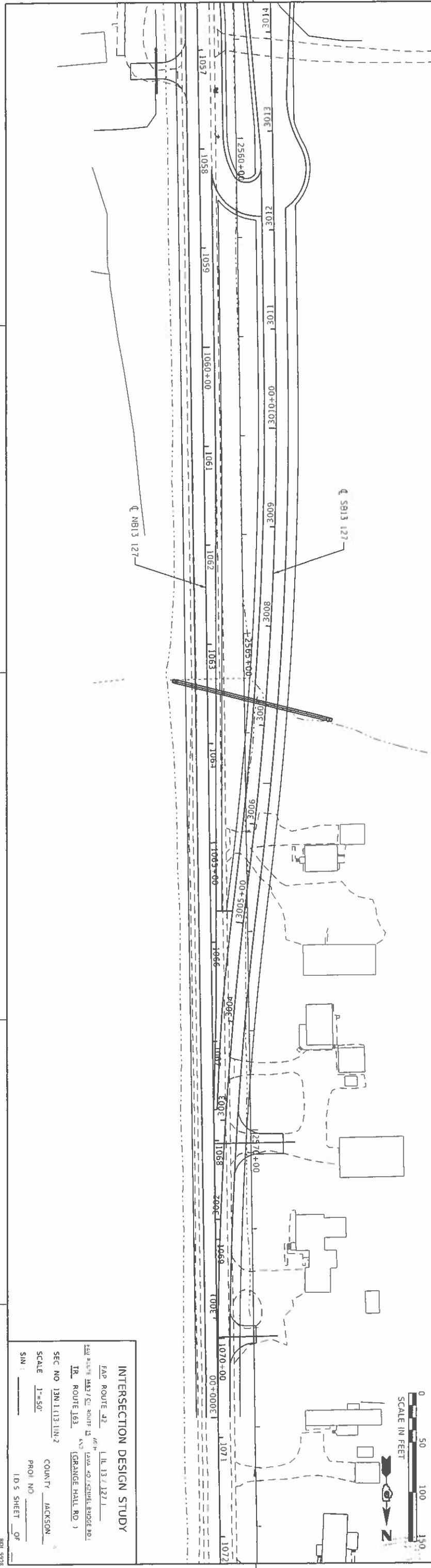
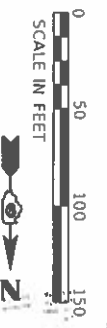
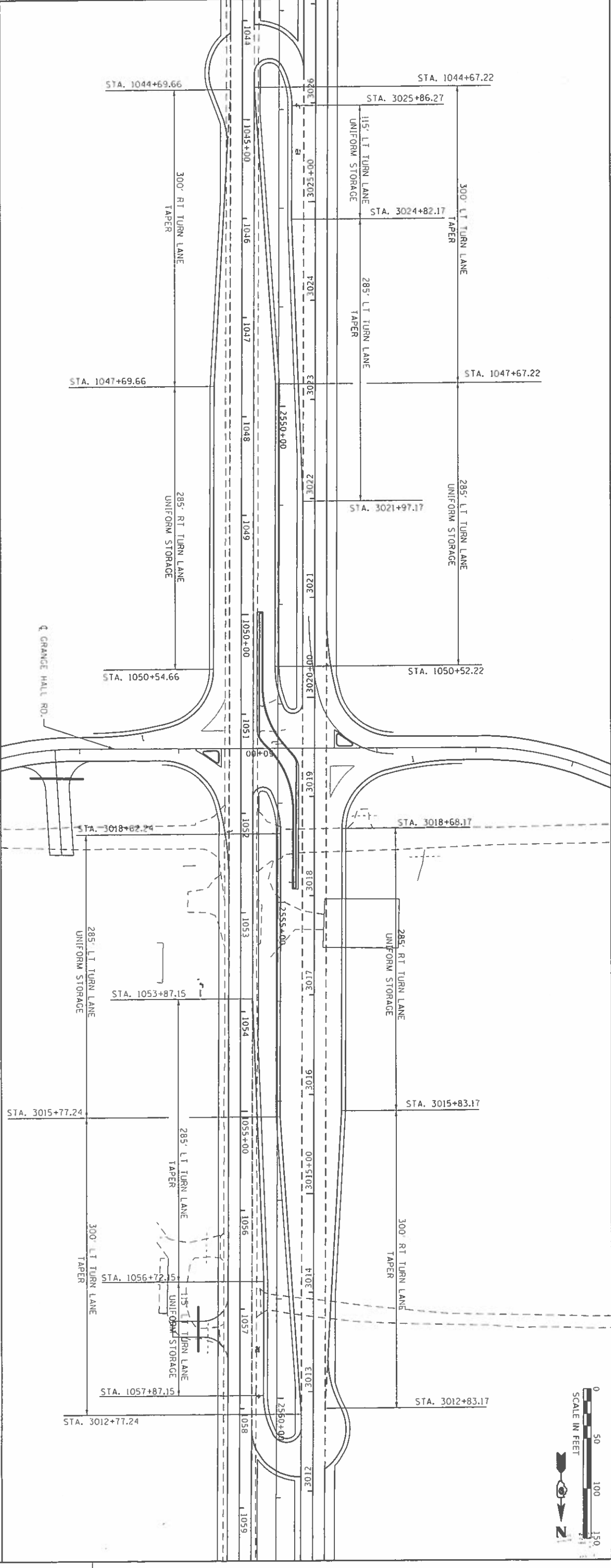
10 SCALE SHEET 2 OF 14 SHEETS

PROPOSED TYPICAL SECTION			
IL ROUTE 13/127			
F&P RITE	SECTION	COUNTY	TOTAL SHEET NO.
42		JACKSON	506
		CONTRACT NO.	28
ILLINOIS FED. AID PROJECT			



INTERSECTION DESIGN STUDY
 I-17 ROUTE 163 / I-17 ROUTE 15 AVENUE
 (GRANGE HALL RD.)
 SEC NO 13N,11E,11N,2
 COUNTY JACKSON
 PROJ NO
 I.D.S SHEET OF





INTERSECTION DESIGN STUDY

FAD ROUTE 163 (L.B. 13.1, 127.1)
 IR ROUTE 163 (GRANGE HALL RD.)
 SEC NO 13N.11E.13.1
 SCALE 1"=50'
 COUNTY JACKSON
 PROJ NO
 D.S. SHEET OF

LIFE-CYCLE COST ANALYSIS: NEW CONSTRUCTION / RECONSTRUCTION

FULL-DEPTH HMA PAVEMENT

Standard Design

ROUTE IL 13 / IL 127
 SECTION 13N-1,(13-1)N-2
 COUNTY Jackson
 LOCATION RCUT at Ava Rd. and Grange Hall Rd.

FACILITY TYPE NON-INTERSTATE

PROJECT LENGTH 7000 FT ==> 1.33 Miles **USER OVERRIDE COLUMN**
 # OF CENTERLINES 2 CL
 # OF LANES 4 LANES
 # OF EDGES 4 EP
 LANE WIDTH - AVERAGE 12 FT
 SHOULDER WIDTH HMA Inside 6 FT
 HMA Outside 10 FT
 Total Width of Paved Shoulders 32 FT

PAVEMENT THICKNESS (FLEXIBLE) 11.50 IN 16.75 IN MAX
 SHOULDER THICKNESS 8.00 IN HMA_SD Standard Design
 POLICY OVERLAY THICKNESS 2.25 IN

FLEX PAVEMENT	TRAFFIC FACTORS	MINIMUM	ACTUAL	USE	On User Override
		3.56	1.80	3.56	

Read Me!

HMA COST PER TON	UNIT PRICE
HMA SURFACE	\$102.00 / TON
HMA TOP BINDER	\$98.00 / TON
HMA LOWER BINDER	\$78.00 / TON
HMA BINDER (LEVELING)	\$0.00 / TON
HMA SHOULDER	\$86.00 / TON

INITIAL COSTS	THICKNESS	100% QUANTITY	UNIT	UNIT PRICE	COST	USER SUPPLIED QUANTITY	USER SUPPLIED UNIT PRICE
HMA PAVEMENT (FULL-DEPTH)	(11.50")	28667	28,667 SQ YD *	\$57.52 / SQ YD	\$1,648,901	28,667	
HMA SURFACE COURSE	(2.00")	1.0069	3,210 TONS *	\$102.00 / TON	\$0	3,210	
HMA TOP BINDER COURSE	(2.25")	1.0217	3,612 TONS *	\$98.00 / TON	\$0	3,612	
HMA LOWER BINDER COURSE	(7.25")	1.0547	11,639 TONS *	\$78.00 / TON	\$0	11,639	
HMA SHOULDER	(8.00")	15365	15,365 SQ YD *	\$38.53 / SQ YD	\$591,983	15,365	
CURB & GUTTER			0 LIN FT	\$30.00 / LIN FT	\$0		
SUBBASE GRAN MATL TY C (TONS)			2,758 TONS	\$26.00 / TON	\$71,708		
IMPROVED SUBGRADE:	Modified Soil Width = 51.4'		40,000 SQ YD *	\$1.85 / SQ YD	\$74,000	40,000	
Reserved For User Supplied Item			0 UNITS	\$0.00 / UNITS	\$0		
Reserved For User Supplied Item			0 UNITS	\$0.00 / UNITS	\$0		
PAVEMENT REMOVAL			11,000 SQ YD *	\$8.50 / SQ YD	\$93,500	11,000	
SHOULDER REMOVAL			6,900 SQ YD *	\$7.30 / SQ YD	\$50,370	6,900	
Note: * Denotes User Supplied Quantity					FLEXIBLE CONSTRUCTION INITIAL COST	\$2,530,462	
					FLEXIBLE CONSTRUCTION ANNUAL COST PER MILE	\$77,846	

MAINTENANCE COSTS:						Schedule	Unit Cost
ITEM	THICKNESS		MATERIAL	T	UNIT COST	Quantity	Override
ROUTINE MAINTENANCE ACTIVITY					\$0.00	LANE-MILE / YEAR	
HMA OVERLAY PVMT SURF	(2.00")	1.0069	Surface Mix	2.00	\$11.50 / SQ YD	28667	
HMA OVERLAY PVMT	(2.25")	1.0078	Surface Mix	2.25	\$8.61 / SQ YD	28667	
HMA SURFACE MIX	(1.50")	1.0052	Surface Mix	1.50	\$8.61 / SQ YD	28667	
HMA BINDER MIX	(0.75")	1.0130	Leveling Binder Mix	0.75	\$0.00 / SQ YD	28667	
HMA OVERLAY SHLD (Year 30)	(2.25")		Shoulder Mix	2.25	\$10.84 / SQ YD	15365	
HMA OVERLAY SHLD	(2.00")		Shoulder Mix	2.00	\$9.63 / SQ YD	15365	
MILLING (2.00 IN)				2.00	\$3.00 / SQ YD		
PARTIAL DEPTH PVMT PATCH	(Mill & Fill Surf)		Surface Mix	2.00	\$81.42 / SQ YD		
PARTIAL DEPTH SHLD PATCH	(Mill & Fill Surf)		Shoulder Mix	2.00	\$79.63 / SQ YD		
PARTIAL DEPTH PVMT PATCH	(Mill & Fill +2.00 ")		Leveling Binder Mix	2.00	\$70.00 / SQ YD		
PARTIAL DEPTH SHLD PATCH	(Mill & Fill +2.00 ")		Shoulder Mix	2.00	\$79.63 / SQ YD		
LONGITUDINAL SHOULDER JOINT ROUT & SEAL					\$2.00 / LIN FT		
CENTERLINE JOINT ROUT & SEAL					\$2.00 / LIN FT		
RANDOM / THERMAL CRACK ROUT & SEAL (100% Rehab = 110.00' / Station / Lane)					\$2.00 / LIN FT		
FLEXIBLE TOTAL LIFE-CYCLE COST						\$3,581,921	
FLEXIBLE TOTAL ANNUAL COST PER MILE						\$110,193	

PCC PAVEMENT

JPCP

ROUTE **IL 13 / IL 127**
 SECTION **13N-1,(13-1)N-2**
 COUNTY **Jackson**
 LOCATION **RCUT at Ava Rd. and Grange Hall Rd.**

FACILITY TYPE **NON-INTERSTATE**

PROJECT LENGTH **7000 FT ==> 1.33 Miles** **USER**
 # OF CENTERLINES **2 CL** **OVERWRITE**
 # OF LANES **4 LANES** **COLUMN**
 # OF EDGES **4 EP**
 LANE WIDTH - AVERAGE **12 FT**
 SHOULDER WIDTH PCC Inside **6 FT**
 PCC Outside **10 FT**
 Total Width of Paved Shoulders **32 FT**

PAVEMENT THICKNESS (RIGID) **JPCP 9.00 IN TIED SHLD**
 SHOULDER THICKNESS **9.00 IN**

POLICY OVERLAY THICKNESS **2.50 IN** **On**
User

RIGID PAVEMENT	TRAFFIC FACTORS	MINIMUM	ACTUAL	USE	USER Override
		5.02	2.43	5.02	
Worksheet Construction Type is	Reconstruction	The Pavement Type is		JPCP	

INITIAL COSTS

ITEM	THICKNESS	100% QUANTITY	UNIT	UNIT PRICE	COST	USER SUPPLIED QUANTITY
JPC PAVEMENT	(9.00")	28,667	SQ YD *	\$50.50 / SQ YD	\$1,447,684	28,667
PAVEMENT REINFORCEMENT		0	SQ YD	\$0.00 / SQ YD	\$0	
STABILIZED SUBBASE	(4.00")	30,000	SQ YD *	\$27.00 / SQ YD	\$810,000	30,000
PCC SHOULDERS		15,365	SQ YD *	\$47.00 / SQ YD	\$722,155	15,365
CURB & GUTTER		0	LIN FT	\$0.00 / LIN FT	\$0	
SUBBASE GRAN MATL TY C	(~ 3.48")	2,928	TONS	\$26.00 / TON	\$76,128	
IMPROVED SUBGRADE:	Modified Soil Width = 51.4'	40,000	SQ YD *	\$1.85 / SQ YD	\$74,000	40,000
Reserved For User Supplied Item		0	UNITS	\$0.00 / UNITS	\$0	
Reserved For User Supplied Item		0	UNITS	\$0.00 / UNITS	\$0	
PAVEMENT REMOVAL		11,000	SQ YD *	\$8.50 / SQ YD	\$93,500	11,000
SHOULDER REMOVAL		6,900	SQ YD *	\$7.30 / SQ YD	\$50,370	6,900

Note: * Denotes User Supplied Quantity

RIGID CONSTRUCTION INITIAL COST	\$3,273,837
RIGID CONSTRUCTION ANNUAL COST PER MILE	\$100,715

MAINTENANCE COSTS:

ITEM	THICKNESS	MATERIAL	T	UNIT COST	Schedule Quantity	Unit Cost Override
ROUTINE MAINTENANCE ACTIVITY				\$0.00 / LANE-MILE / YEAR		
HMA POLICY OVERLAY	(2.50")		2.50			
HMA POLICY OVERLAY PVMT	(2.50")	1.0087	2.50	\$8.61 / SQ YD	28667	
HMA SURFACE MIX	(1.50")	1.0052	Surface Mix	\$8.61 / SQ YD	28667	
HMA BINDER MIX	(1.00")	1.0139	aling Binder Mix	\$0.00 / SQ YD	28667	
HMA POLICY OVERLAY SHLD	(2.50")		Shoulder Mix	\$12.04 / SQ YD	15365	
CLASS A PAVEMENT PATCHING				\$195.00 / SQ YD		
CLASS B PAVEMENT PATCHING				\$150.00 / SQ YD		
CLASS C SHOULDER PATCHING				\$145.00 / SQ YD		
PARTIAL DEPTH PVMT PATCH (Mill & Fill HMA Surf)		Surface Mix	1.50	\$78.57 / SQ YD		
PARTIAL DEPTH PVMT PATCH (Mill & Fill HMA 2.50")		Surface Mix	2.50	\$84.28 / SQ YD		
LONGITUDINAL SHOULDER JOINT ROUT & SEAL				\$2.00 / LIN FT		
CENTERLINE JOINT ROUT & SEAL				\$2.00 / LIN FT		
REFLECTIVE TRANSVERSE CRACK ROUT & SEAL				\$2.00 / LIN FT		
RANDOM CRACK ROUT & SEAL (100% Rehab = 100.00' / Station / Lane)				\$2.00 / LIN FT		

RIGID TOTAL LIFE-CYCLE COST	\$3,817,568
RIGID TOTAL ANNUAL COST PER MILE	\$117,442

LIFE-CYCLE COST ANALYSIS: NEW DESIGN

Calculated / Revised : 10/19/18 10:19 AM

			JPCP	HMA
CONSTRUCTION	INITIAL COST	PRESENT WORTH	\$3,273,837	\$2,530,462
		ANNUAL COST PER MILE	\$100,715	\$77,846
MAINTENANCE	LIFE-CYCLE COST	PRESENT WORTH	\$543,731	\$1,051,459
		ANNUAL COST PER MILE	\$16,727	\$32,347
TOTAL	LIFE-CYCLE COST	PRESENT WORTH	\$3,817,568	\$3,581,921
		ANNUAL COST PER MILE	\$117,442	\$110,193

LIFE-CYCLE COST ANALYSIS: FINAL SUMMARY

LOWEST COST OPTION	=====>	HMA	\$110,193	
OTHER OPTIONS (LOWEST TO HIGHEST):	TYPE / PERCENTAGE	JPCP	\$117,442	6.6%

FULL-DEPTH HMA PAVEMENT
 HMA OVERLAY OF RUBBLIZED PCC PAVEMENT
 Figure 54-7.C
 STANDARD DESIGN

MAINTENANCE COSTS:	ITEM	%	QUANTITY	UNIT	UNIT COST	COST	PRESENT WORTH
YEAR 5							
	LONG SHLD JT R&S	100.00%	28,000	LIN FT	\$2.00	\$56,000	
	CNTR LINE JOINT R&S	100.00%	14,000	LIN FT	\$2.00	\$28,000	
	RNDM / THRM CRACK R&S	50.00%	15,400	LIN FT	\$2.00	\$30,800	
	PD PVMT PATCH M&F SURF	0.10%	29	SQ YD	\$81.42	\$2,361	
		PWFn = 0.8626			PW = 0.8626 X	\$117,161	\$101,064
YEAR 10							
	LONG SHLD JT R&S	100.00%	28,000	LIN FT	\$2.00	\$56,000	
	CNTR LINE JOINT R&S	100.00%	14,000	LIN FT	\$2.00	\$28,000	
	RNDM / THRM CRACK R&S	50.00%	15,400	LIN FT	\$2.00	\$30,800	
	PD PVMT PATCH M&F SURF	0.50%	143	SQ YD	\$81.42	\$11,644	
		PWFn = 0.7441			PW = 0.7441 X	\$126,444	\$94,086
YEAR 15							
	MILL PVMT & SHLD 2.00"	100.00%	44,032	SQ YD	\$3.00	\$132,096	
	PD PVMT PATCH M&F ADD'L 2.00"	1.00%	287	SQ YD	\$70.00	\$20,090	
	HMA OVERLAY PVMT 2.00"	100.00%	28,667	SQ YD	\$11.50	\$329,766	
	HMA OVERLAY SHLD 2.00 "	100.00%	15,365	SQ YD	\$9.63	\$147,996	
		PWFn = 0.6419			PW = 0.6419 X	\$629,948	\$404,340
YEAR 20							
	LONG SHLD JT R&S	100.00%	28,000	LIN FT	\$2.00	\$56,000	
	CNTR LINE JOINT R&S	100.00%	14,000	LIN FT	\$2.00	\$28,000	
	RNDM / THRM CRACK R&S	50.00%	15,400	LIN FT	\$2.00	\$30,800	
	PD PVMT PATCH M&F SURF	0.10%	29	SQ YD	\$81.42	\$2,361	
		PWFn = 0.5537			PW = 0.5537 X	\$117,161	\$64,869
YEAR 25							
	LONG SHLD JT R&S	100.00%	28,000	LIN FT	\$2.00	\$56,000	
	CNTR LINE JOINT R&S	100.00%	14,000	LIN FT	\$2.00	\$28,000	
	RNDM / THRM CRACK R&S	50.00%	15,400	LIN FT	\$2.00	\$30,800	
	PD PVMT PATCH M&F SURF	0.50%	143	SQ YD	\$81.42	\$11,644	
		PWFn = 0.4776			PW = 0.4776 X	\$126,444	\$60,390
HMA SD							
YEAR 30							
	NON-INTERSTATE						
	MILL PVMT & SHLD 2.00"	100.00%	44,032	SQ YD	\$3.00	\$132,096	
	PD PVMT PATCH M&F ADD'L 2.00"	2.00%	573	SQ YD	\$70.00	\$40,110	
	PD SHLD PATCH M&F ADD'L 2.00"	1.00%	154	SQ YD	\$79.63	\$12,263	
	HMA OVERLAY PVMT 2.25 "	100.00%	28,667	SQ YD	\$8.61	\$246,898	
	HMA OVERLAY SHLD 2.25 "	100.00%	15,365	SQ YD	\$10.84	\$166,495	
		PWFn = 0.4120			PW = 0.4120 X	\$597,862	\$246,311
YEAR 35							
	LONG SHLD JT R&S	100.00%	28,000	LIN FT	\$2.00	\$56,000	
	CNTR LINE JOINT R&S	100.00%	14,000	LIN FT	\$2.00	\$28,000	
	RNDM / THRM CRACK R&S	50.00%	15,400	LIN FT	\$2.00	\$30,800	
	PD PVMT PATCH M&F SURF	0.10%	29	SQ YD	\$81.42	\$2,361	
		PWFn = 0.3554			PW = 0.3554 X	\$117,161	\$41,637
YEAR 40							
	LONG SHLD JT R&S	100.00%	28,000	LIN FT	\$2.00	\$56,000	
	CNTR LINE JOINT R&S	100.00%	14,000	LIN FT	\$2.00	\$28,000	
	RNDM / THRM CRACK R&S	50.00%	15,400	LIN FT	\$2.00	\$30,800	
	PD PVMT PATCH M&F SURF	0.50%	143	SQ YD	\$81.42	\$11,644	
		PWFn = 0.3066			PW = 0.3066 X	\$126,444	\$38,762
							\$1,051,459
ROUTINE MAINTENANCE ACTIVITY				5.30 Lane Miles	0.00	\$0	\$0
							MAINTENANCE LIFE-CYCLE COST \$1,051,459
45	YEAR LIFE CYCLE	CRFn = 0.0407852					MAINTENANCE ANNUAL COST PER MILE \$32,347

JOINTED PLAIN CONCRETE PAVEMENT
UNBONDED JOINTED PLAIN CONCRETE OVERLAY
Figure 54-7.A

MAINTENANCE COSTS:	ITEM	%	QUANTITY	UNIT	UNIT COST	COST	PRESENT WORTH
YEAR 10							
	PAVEMENT PATCH CLASS B	0.10%	29	SQ YD	\$150.00	\$4,350	
		PWF _n = 0.7441			PW = 0.7441 X	\$4,350	\$3,237
YEAR 15							
	PAVEMENT PATCH CLASS B	0.20%	57	SQ YD	\$150.00	\$8,550	
		PWF _n = 0.6419			PW = 0.6419 X	\$8,550	\$5,488
YEAR 20							
	PAVEMENT PATCH CLASS B	2.00%	573	SQ YD	\$150.00	\$85,950	
	SHOULDER PATCH CLASS C	0.50%	77	SQ YD	\$145.00	\$11,165	
	LONGITUDINAL SHLD JT R&S	100.00%	28,000	LIN FT	\$2.00	\$56,000	
	CENTERLINE JT R&S	100.00%	14,000	LIN FT	\$2.00	\$28,000	
		PWF _n = 0.5537			PW = 0.5537 X	\$181,115	\$100,279
YEAR 25							
	PAVEMENT PATCH CLASS B	3.00%	860	SQ YD	\$150.00	\$129,000	
	SHOULDER PATCH CLASS C	1.00%	154	SQ YD	\$145.00	\$22,330	
		PWF _n = 0.4776			PW = 0.4776 X	\$151,330	\$72,276
YEAR 30 NON-INTERSTATE							
	PAVEMENT PATCH CLASS B	4.00%	1,147	SQ YD	\$150.00	\$172,050	
	SHOULDER PATCH CLASS C	1.50%	230	SQ YD	\$145.00	\$33,350	
	HMA POLICY OVERLAY 2.5" (PVMT)	100.00%	28,667	SQ YD	\$8.61	\$246,898	
	HMA POLICY OVERLAY 2.5" (SHLD)	100.00%	15,365	SQ YD	\$12.04	\$184,995	
		PWF _n = 0.4120			PW = 0.4120 X	\$637,293	\$262,556
YEAR 35 NON-INTERSTATE							
	LONGITUDINAL SHLD JT R&S	100.00%	28,000	LIN FT	\$2.00	\$56,000	
	CENTERLINE JT R&S	100.00%	14,000	LIN FT	\$2.00	\$28,000	
	RANDOM CRACK R&S	50.00%	14,000	LIN FT	\$2.00	\$28,000	
	REFLECTIVE TRANSVERSE CRACK R&S	40.00%	8,966	LIN FT	\$2.00	\$17,932	
	PD PVMT PATCH M&F HMA 2.50"	0.10%	29	SQ YD	\$84.28	\$2,444	
		PWF _n = 0.3554			PW = 0.3554 X	\$132,376	\$47,044
YEAR 40 NON-INTERSTATE							
	PAVEMENT PATCH CLASS B	0.50%	143	SQ YD	\$150.00	\$21,450	
	LONGITUDINAL SHLD JT R&S	100.00%	28,000	LIN FT	\$2.00	\$56,000	
	CENTERLINE JT R&S	100.00%	14,000	LIN FT	\$2.00	\$28,000	
	REFLECTIVE TRANSVERSE CRACK R&S	60.00%	13,450	LIN FT	\$2.00	\$26,900	
	RANDOM CRACK R&S	50.00%	14,000	LIN FT	\$2.00	\$28,000	
	PD PVMT PATCH M&F HMA 2.50"	0.50%	143	SQ YD	\$84.28	\$12,052	
		PWF _n = 0.3066			PW = 0.3066 X	\$172,402	\$52,851
							\$543,731
	ROUTINE MAINTENANCE ACTIVITY		5.30	Lane Miles	\$0.00	\$0	\$0
							MAINTENANCE LIFE-CYCLE COST \$543,731
45	YEAR LIFE CYCLE	CRF _n = 0.0407852					MAINTENANCE ANNUAL COST PER MILE \$16,727