Illinois Department of Transportation

To:	Anthony J. Quigley	Attn: John Baczek
From:	Maureen M. Addis MMA	
Subject:	Pavement Design Approval	
Date:	May 23, 2017	

Route:	IL 19	Job No.:	D-91-136-11
Section:	10-00055-00WR	Contract No.:	n/a
County:	Cook	Target Letting:	November 2017
Limits:	IL 59 to Bartlett Road		

We have reviewed the pavement design for the above referenced project which was submitted on May 1, 2017. The scope of the project is reconstruction of IL 19 from a 3-lane cross-section to a five-lane cross-section.

The pavement design resulted in two reconstruction options: 10.25" Full-Depth HMA and 9.25" Jointed PCC. The life-cycle cost analysis of those two options resulted in the HMA pavement being 11.6% less expensive ($112,905 compared to $126,043, annual cost per mile) and thus the preferred option.

In summary, the approved pavement design is as follows:

IL 19
10.25" Full-Depth HMA w/ PCC Curb & Gutter
12" Aggregate Subgrade Improvement

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

Illinois Department of Transportation

Memorandum

To: Maureen Addis — Attn: Michael Brand

From: Jose A. Dominguez — By: Ojas Patel

Subject: Pavement Analysis* — Date: May 1, 2017

*Route: Illinois Route 19
Limits: IL 59 to Bartlett Road
Section: 10-00055-00-WR
Current target: 11CY17

County: Cook
Contract No.: NA
Job No.: D-91-136-11

We have completed the pavement analysis for the above captioned location. Review by the Central Office is required since the total pavement area for reconstruction exceeds 4,750 Square Yards. The following is the scope of the project:

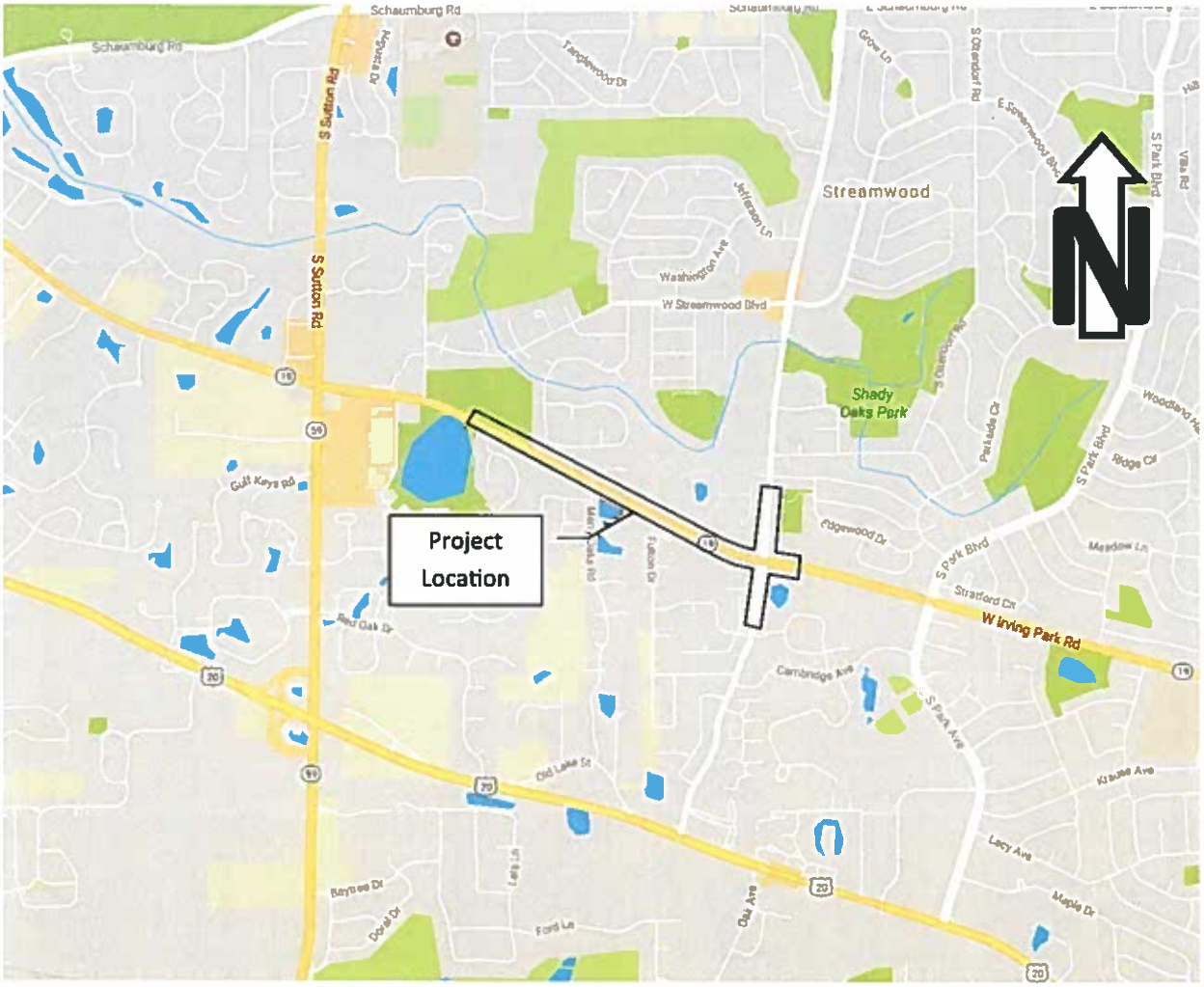
Bureau of Local Roads project to reconstruct IL 19 from IL 59 to Bartlett Road in order to provide an additional through lane in each direction.

A 20-year pavement analysis was performed on the above segments. We recommend a mechanistic flexible pavement design based on the life cycle cost analysis which favors HMA pavement by 11.6%. The recommended pavement is:

IL 19
Reconstruction
PCC Curb and Gutter
10 ¼" Full Depth HMA[1, 3]
    2" Polymerized HMA Surface Course, Mix "E", N70
    8 ¼" HMA Base Course, IL-19.0, N70
12" Aggregate Subgrade Improvement[2]

[1]Designer Note 1: Use pay item **40701886, HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10 ¼"**, paid for in square yards.

LOCATION MAP



HRGreen

BDE 5401 Template (Rev. 09/05/2013) **IDOT MECHANISTIC PAVEMENT DESIGN** Printed: 10/24/2017

PROJECT AND TRAFFIC INPUTS (Enter Data in Gray Shaded Cells)

Route:	IL 19	Comments:	IL 19 (IL 59 to Bartlett Road) -- Local Roads Project
Section:	10-00055-00-WR		BDE Approval Required
County:	Cook	Design Date:	03/23/2017 ONP
Location:	(IL 59 to Bartlett Rd)	Modify Date:	

<-- BY
<-- BY

	ADT	Year
Current:	22,000	2011
Future:	28,000	2040

Facility Type: Other Marked State Route

# of Lanes = 4

Road Class: I

Subgrade Support Rating (SSR): Poor

Construction Year: 2018

Design Period (DP) = 20 years

	Structural Design Traffic			
	Minimum ADT	Actual ADT	Actual %of Total ADT	% of ADT in Design Lane
PV =	0	23,884	93.6%	P = 32%
SU =	250	893	3.5%	S = 45%
MU =	750	740	2.9%	M = 45%
Struct. Design ADT =		25,517	(2028)	

TRAFFIC FACTOR CALCULATION

FLEXIBLE PAVEMENT			RIGID PAVEMENT		
Cpv =	0.15		Cpv =	0.15	
Csu =	132.5		Csu =	143.81	
Cmu =	482.53		Cmu =	696.42	
TF flexible (Actual) =	4.30	(Actual ADT)	TF rigid (Actual) =	5.82	(Actual ADT)
TF flexible (Min) =	3.56	(Min ADT Fig. 54-2.C)	TF rigid (Min) =	5.02	(Min ADT Fig. 54-2.C)

NEW CONSTRUCTION / RECONSTRUCTION PAVEMENT DESIGN CALCULATIONS

Full-Depth HMA Pavement

Use TF flexible = 4.30

Goto Map

PG Grade Lower Binder Lifts = PG 64-22 (Fig. 53-4.R)

HMA Mixture Temp. = 74.0 deg. F (Fig. 54-5.C)

Design HMA Mixture Modulus (E_{HMA}) = 720 ksi (Fig. 54-5.D)

Design HMA Strain (ε_{HMA}) = 79 (Fig. 54-5.E)

Goto Map

Full Depth HMA Design Thickness = 10.25 in. (Fig. 54-5.F)

Limiting Strain Criterion Thickness = 14.50 in. (Fig. 54-5.I)

Use Full-Depth HMA Thickness = 10.25 inches

JPC Pavement

Use TF rigid = 5.82

Edge Support = Tied Shoulder or C.&G.

Rigid Pavt Thick. = 9.25 in. (Fig. 54-4.E)

CRC Pavement

Use TF rigid = 5.82

IBR value = 3

CRCP Thickness = 8.25 in. (Fig. 54-4.M)

TF MUST BE > 60 FOR CRCP

RECONSTRUCTION ONLY (SUPPLEMENTAL) PAVEMENT DESIGN CALCULATIONS

HMA Overlay of Rubblized PCC

Use TF flexible = 4.30

Goto Map

HMA Overlay Design Thickness = 7.75 in. (Fig. 54-5.U)

Limiting Strain Criterion Thickness = in. (Fig. 54-5.V)

Use HMA Overlay Thickness = 999.00 inches

Unbonded Concrete Overlay

Review 54-4.03 for limitations and special considerations.

JPCP Thickness = NA inches

CONTACT BMPR FOR ASSISTANCE

DESIGN TABLES FROM BDE MANUAL CHAPTER 54 - PAVEMENT DESIGN

Class I Roads	Class II Roads	Class III Roads	Class IV Roads
4 lanes or more Part of a future 4 lanes or more One-way Streets with ADT > 3500	2 lanes with ADT > 2000 One way Street with ADT <= 3500	2 Lanes (ADT 750 -2000)	2 Lanes (ADT < 750)

	Min. Str. Design Traffic (Fig 54-2.C)		
Facility Type	PV	SU	MU
Interstate or Freeway	0	500	1500
Other Marked State Route	0	250	750
Unmarked State Route	No Min	No Min	No Min

Class Table for One-Way Streets	
ADT	Class
0 - 3500	II
>3501	I

	Traffic Factor ESAL Coefficients			
	Rigid (Fig. 54-4.C)		Flexible (Fig. 54-5.B)	
Class	Csu	Cmu	Csu	Cmu
I	143.81	696.42	132.50	482.53
II	135.78	567.21	112.06	385.44
III	129.58	562.47	109.14	384.35
IV	129.58	562.47	109.14	384.35

Class Table for 2 or 3 lanes (not future 4 lane & not one-way street)	
ADT	Class
0 - 749	IV
750 - 2000	III
>2000	II

	Design Lane Distribution Factors For Structural Design Traffic (Fig. 54-2.B)					
	Rural			Urban		
Number of Lanes	P	S	M	P	S	M
1 Lane Ramp	100%	100%	100%	100%	100%	100%
2 or 3	50%	50%	50%	50%	50%	50%
4	32%	45%	45%	32%	45%	45%
6 or more	20%	40%	40%	8%	37%	37%

BDE 5401 Template (Rev. 09/05/2013) Printed: 10/24/2017

LIFE-CYCLE COST ANALYSIS: NEW CONSTRUCTION / RECONSTRUCTION

FULL-DEPTH HMA PAVEMENT

Standard Design

ROUTE	**IL 19**
SECTION	**10-00055-00-WR**
COUNTY	**Cook**
LOCATION	**(IL 59 to Bartlett Rd)**
FACILITY TYPE	**NON-INTERSTATE**

PROJECT LENGTH			**4810**	FT = = >	0.91 Miles
# OF CENTERLINES			**4**	CL	
# OF LANES			**4**	LANES	
# OF EDGES			**2**	EP	
LANE WIDTH - AVERAGE			**12**	FT	
SHOULDER WIDTH	HMA	Left	**0**	FT	
	HMA	Right	**0**	FT	
	Total Width of Paved Shoulders		**0**	FT	

PAVEMENT THICKNESS (FLEXIBLE)	**10.25** IN	**14.50** IN MAX	
SHOULDER THICKNESS	**8.00** IN	HMA_SD	**Standard Design**
POLICY OVERLAY THICKNESS	**2.25** IN		

FLEX PAVEMENT TRAFFIC FACTORS	MINIMUM	ACTUAL	USE
	3.56	**4.30**	**4.30**

Read Me!

HMA COST PER TON	UNIT PRICE	
HMA SURFACE	**$79.04**	/ TON
HMA TOP BINDER	**$65.93**	/ TON
HMA LOWER BINDER	**$65.93**	/ TON
HMA BINDER (LEVELING)	**$72.49**	/ TON
HMA SHOULDER	**$72.00**	/ TON

INITIAL COSTS

ITEM	THICKNESS		100% QUANTITY	UNIT		UNIT PRICE		COST	
HMA PAVEMENT (FULL-DEPTH)	(10.25")	25653	25,653	SQ YD	*	**$39.70**	/ SQ YD	$1,018,437	~
HMA SURFACE COURSE	(2.00")	1.0035	2,883	TONS		**$79.04**	/ TON	$0	
HMA TOP BINDER COURSE	(2.25")	1.0109	3,267	TONS		**$65.93**	/ TON	$0	
HMA LOWER BINDER COURSE	(6.00")	1.0252	8,837	TONS		**$65.93**	/ TON	$0	
HMA SHOULDER	(8.00")	0	0	TONS		**$72.00**	/ TON	$0	~
CURB & GUTTER			9,620	LIN FT	*	**$30.00**	/ LIN FT	$288,600	
SUBBASE GRAN MATL TY C (TONS)			58	TONS		**$25.00**	/ TON	$1,450	
IMPROVED SUBGRADE:	Aggregate	Width = 50.7'	27,101	SQ YD		**$7.00**	/ SQ YD	$189,707	
Reserved For User Supplied Item			0	**UNITS**		**$0.00**	/ UNITS	$0	
Reserved For User Supplied Item			0	**UNITS**		**$0.00**	/ UNITS	$0	
PAVEMENT REMOVAL			25,653	SQ YD		**$15.00**	/ SQ YD	$384,795	
SHOULDER REMOVAL			0	SQ YD		**$0.00**	/ SQ YD	$0	

Note: * Denotes User Supplied Quantity

FLEXIBLE CONSTRUCTION INITIAL COST	$1,882,989
FLEXIBLE CONSTRUCTION ANNUAL COST PER MILE	$84,302

MAINTENANCE COSTS:

ITEM		THICKNESS		MATERIAL	T	UNIT COST	
ROUTINE MAINTENANCE ACTIVITY						**$0.00**	LANE-MILE / YEAR
HMA OVERLAY PVMT SURF		(2.00")	1.0035	Surface Mix	2.00	**$8.88**	/ SQ YD
HMA OVERLAY PVMT		(2.25")	1.0039		2.25	**$9.72**	/ SQ YD
HMA SURFACE MIX		(1.50")	1.0026	Surface Mix	1.50	**$6.66**	/ SQ YD
HMA BINDER MIX		(0.75")	1.0065	eling Binder Mix	0.75	**$3.06**	/ SQ YD
HMA OVERLAY SHLD	(Year 30)	(2.25")		Shoulder Mix	2.25	**$9.07**	/ SQ YD
HMA OVERLAY SHLD		(2.00")		Shoulder Mix	2.00	**$8.06**	/ SQ YD
MILLING (2.00 IN)					2.00	**$3.00**	/ SQ YD
PARTIAL DEPTH PVMT PATCH		(Mill & Fill Surf)		Surface Mix	2.00	**$78.85**	/ SQ YD

PARTIAL DEPTH SHLD PATCH	(Mill & Fill Surf)	Shoulder Mix	2.00	**$78.06**	/ SQ YD
PARTIAL DEPTH PVMT PATCH	(Mill & Fill +2.00 ")	Leveling Binder Mix	2.00	**$78.12**	/ SQ YD
PARTIAL DEPTH SHLD PATCH	(Mill & Fill +2.00 ")	Shoulder Mix	2.00	**$78.06**	/ 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	$2,521,867
FLEXIBLE TOTAL ANNUAL COST PER MILE	$112,905

PCC PAVEMENT — JPCP

ROUTE			IL 19		
SECTION			10-00055-00-WR		
COUNTY			Cook		
LOCATION			(IL 59 to Bartlett Rd)		
FACILITY TYPE			NON-INTERSTATE		
PROJECT LENGTH			4810 FT	= = >	0.91 Miles
# OF CENTERLINES			4 CL		
# OF LANES			4 LANES		
# OF EDGES			2 EP		
LANE WIDTH - AVERAGE			12 FT		
SHOULDER WIDTH	PCC	Left	0 FT		
	PCC	Right	0 FT		
	Total Width of Paved Shoulders		0 FT		
PAVEMENT THICKNESS (RIGID)		JPCP	9.25 IN	TIED SHLD	
SHOULDER THICKNESS			9.25 IN		
POLICY OVERLAY THICKNESS			2.50 IN		

RIGID PAVEMENT TRAFFIC FACTORS	MINIMUM	ACTUAL	USE
	5.02	5.82	5.82
Worksheet Construction Type is Reconstruction		The Pavement Type is	JPCP

INITIAL COSTS

ITEM	THICKNESS	100% QUANTITY	UNIT		UNIT PRICE		COST
JPC PAVEMENT	(9.25")	25,653	SQ YD		$61.33	/ SQ YD	$1,573,298
PAVEMENT REINFORCEMENT		0	SQ YD		$22.00	/ SQ YD	$0
STABILIZED SUBBASE	(4.00")	0	SQ YD	*	$19.00	/ SQ YD	$0
PCC SHOULDERS		0	SQ YD		$40.00	/ SQ YD	$0
CURB & GUTTER		9,620	LIN FT	*	$30.00	/ LIN FT	$288,600
SUBBASE GRAN MATL TY C	(~ 0.00")	0	TONS		$25.00	/ TON	$0
IMPROVED SUBGRADE:	Aggregate Width = 49.0'	26,188	SQ YD		$7.00	/ SQ YD	$183,316
Reserved For User Supplied Item		0	UNITS		$0.00	/ UNITS	$0
Reserved For User Supplied Item		0	UNITS		$0.00	/ UNITS	$0
PAVEMENT REMOVAL		25,653	SQ YD		$15.00	/ SQ YD	$384,795
SHOULDER REMOVAL		0	SQ YD		$0.00	/ SQ YD	$0

Note: * Denotes User Supplied Quantity

RIGID CONSTRUCTION INITIAL COST	$2,430,009
RIGID CONSTRUCTION ANNUAL COST PER MILE	$108,793

MAINTENANCE COSTS:

ITEM	THICKNESS		MATERIAL	T	UNIT COST	
ROUTINE MAINTENANCE ACTIVITY					$0.00	/ LANE-MILE / YEAR
HMA POLICY OVERLAY	(2.50")			2.50		
HMA POLICY OVERLAY PVMT	(2.50")	1.0043		2.50	$10.74	/ SQ YD
HMA SURFACE MIX	(1.50")	1.0026	Surface Mix	1.50	$6.66	/ SQ YD
HMA BINDER MIX	(1.00")	1.0069	eling Binder Mix	1.00	$4.09	/ SQ YD
HMA POLICY OVERLAY SHLD	(2.50")		Shoulder Mix	2.50	$10.08	/ SQ YD
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	$76.64	/ SQ YD
PARTIAL DEPTH PVMT PATCH (Mill & Fill HMA 2.50")			Surface Mix	2.50	$81.07	/ 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	$2,815,315
RIGID TOTAL ANNUAL COST PER MILE	$126,043

LIFE-CYCLE COST ANALYSIS: NEW DESIGN

Calculated / Revised : **4/28/17 12:56 PM**

			JPCP	HMA
CONSTRUCTION	INITIAL COST	PRESENT WORTH	$2,430,009	$1,882,989
		ANNUAL COST PER MILE	$108,793	$84,302
MAINTENANCE	LIFE-CYCLE COST	PRESENT WORTH	$385,306	$638,878
		ANNUAL COST PER MILE	$17,250	$28,603
TOTAL	LIFE-CYCLE COST	PRESENT WORTH	$2,815,315	$2,521,867
		ANNUAL COST PER MILE	$126,043	$112,905

LIFE-CYCLE COST ANALYSIS: FINAL SUMMARY

LOWEST COST OPTION	==========>	**HMA**	**$112,905**	
OTHER OPTIONS (LOWEST TO HIGHEST):	TYPE / PERCENTAGE	**JPCP**	**$126,043**	**11.6%**

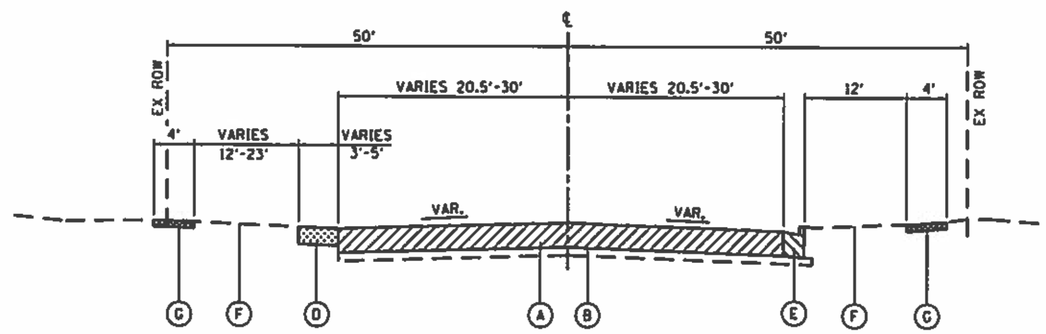
S:\GEN\WPDOCS\Pavement Designs\D-1\IL 19 - IL 59 to Bartlett Rd\Pvmt Design Files\[IL 19-IDOT Mech Pvmt Dgn LCCA 09-05-13.xlsm]PDFSheets

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

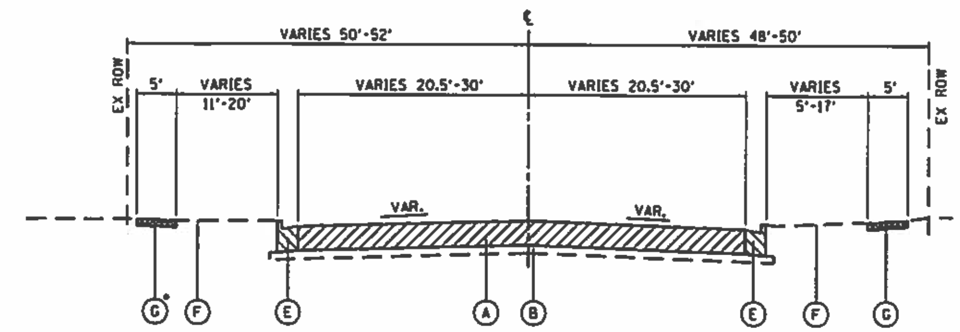
MAINTENANCE COSTS:	ITEM	%	QUANTITY	UNIT	UNIT COST		COST	PRESENT WORTH
YEAR 5								
	LONG SHLD JT R&S	100.00%	9,620	LIN FT	$2.00		$19,240	
	CNTR LINE JOINT R&S	100.00%	19,240	LIN FT	$2.00		$38,480	
	RNDM / THRM CRACK R&S	50.00%	10,582	LIN FT	$2.00		$21,164	
	PD PVMT PATCH M&F SURF	0.10%	26	SQ YD	$78.85		$2,050	
	PWFn =	0.8626		PW =	0.8626	X	$80,934	$69,814
YEAR 10								
	LONG SHLD JT R&S	100.00%	9,620	LIN FT	$2.00		$19,240	
	CNTR LINE JOINT R&S	100.00%	19,240	LIN FT	$2.00		$38,480	
	RNDM / THRM CRACK R&S	50.00%	10,582	LIN FT	$2.00		$21,164	
	PD PVMT PATCH M&F SURF	0.50%	128	SQ YD	$78.85		$10,093	
	PWFn =	0.7441		PW =	0.7441	X	$88,977	$66,207
YEAR 15								
	MILL PVMT & SHLD 2.00"	100.00%	25,653	SQ YD	$3.00		$76,959	
	PD PVMT PATCH M&F ADD'L 2.00"	1.00%	257	SQ YD	$78.12		$20,077	
	HMA OVERLAY PVMT 2.00"	100.00%	25,653	SQ YD	$8.88		$227,884	
	HMA OVERLAY SHLD 2.00 "	100.00%	0	SQ YD	$8.06		$0	
	PWFn =	0.6419		PW =	0.6419	X	$324,920	$208,554
YEAR 20								
	LONG SHLD JT R&S	100.00%	9,620	LIN FT	$2.00		$19,240	
	CNTR LINE JOINT R&S	100.00%	19,240	LIN FT	$2.00		$38,480	
	RNDM / THRM CRACK R&S	50.00%	10,582	LIN FT	$2.00		$21,164	
	PD PVMT PATCH M&F SURF	0.10%	26	SQ YD	$78.85		$2,050	
	PWFn =	0.5537		PW =	0.5537	X	$80,934	$44,811
YEAR 25								
	LONG SHLD JT R&S	100.00%	9,620	LIN FT	$2.00		$19,240	
	CNTR LINE JOINT R&S	100.00%	19,240	LIN FT	$2.00		$38,480	
	RNDM / THRM CRACK R&S	50.00%	10,582	LIN FT	$2.00		$21,164	
	PD PVMT PATCH M&F SURF	0.50%	128	SQ YD	$78.85		$10,093	
	PWFn =	0.4776		PW =	0.4776	X	$88,977	$42,496
	HMA_SD							
YEAR 30	NON-INTERSTATE							
	MILL PVMT & SHLD 2.00"	100.00%	25,653	SQ YD	$3.00		$76,959	
	PD PVMT PATCH M&F ADD'L 2.00"	2.00%	513	SQ YD	$78.12		$40,075	
	PD SHLD PATCH M&F ADD'L 2.00"	1.00%	0	SQ YD	$78.06		$0	
	HMA OVERLAY PVMT 2.25 "	100.00%	25,653	SQ YD	$9.72		$249,377	
	HMA OVERLAY SHLD 2.25 "	100.00%	0	SQ YD	$9.07		$0	
	PWFn =	0.4120		PW =	0.4120	X	$366,411	$150,956
YEAR 35								
	LONG SHLD JT R&S	100.00%	9,620	LIN FT	$2.00		$19,240	
	CNTR LINE JOINT R&S	100.00%	19,240	LIN FT	$2.00		$38,480	
	RNDM / THRM CRACK R&S	50.00%	10,582	LIN FT	$2.00		$21,164	
	PD PVMT PATCH M&F SURF	0.10%	26	SQ YD	$78.85		$2,050	
	PWFn =	0.3554		PW =	0.3554	X	$80,934	$28,763
YEAR 40								
	LONG SHLD JT R&S	100.00%	9,620	LIN FT	$2.00		$19,240	
	CNTR LINE JOINT R&S	100.00%	19,240	LIN FT	$2.00		$38,480	
	RNDM / THRM CRACK R&S	50.00%	10,582	LIN FT	$2.00		$21,164	
	PD PVMT PATCH M&F SURF	0.50%	128	SQ YD	$78.85		$10,093	
	PWFn =	0.3066		PW =	0.3066	X	$88,977	$27,277
								$638,878
	ROUTINE MAINTENANCE ACTIVITY		3.64	Lane Miles	0.00		$0	$0
							MAINTENANCE LIFE-CYCLE COST	$638,878
45	YEAR LIFE CYCLE	CRFn = 0.0407852					MAINTENANCE ANNUAL COST PER MILE	$28,603

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

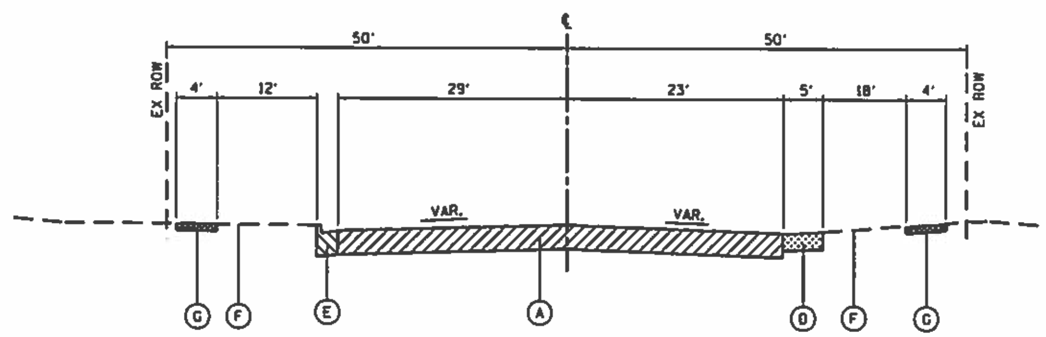
MAINTENANCE COSTS:	ITEM	%	QUANTITY	UNIT	UNIT COST		COST	PRESENT WORTH
YEAR 10								
	PAVEMENT PATCH CLASS B	0.10%	26	SQ YD	$150.00		$3,900	
	PWFn =	0.7441		PW =	0.7441	X	$3,900	$2,902
YEAR 15								
	PAVEMENT PATCH CLASS B	0.20%	51	SQ YD	$150.00		$7,650	
	PWFn =	0.6419		PW =	0.6419	X	$7,650	$4,910
YEAR 20								
	PAVEMENT PATCH CLASS B	2.00%	513	SQ YD	$150.00		$76,950	
	SHOULDER PATCH CLASS C	0.50%	0	SQ YD	$145.00		$0	
	LONGITUDINAL SHLD JT R&S	100.00%	9,620	LIN FT	$2.00		$19,240	
	CENTERLINE JT R&S	100.00%	19,240	LIN FT	$2.00		$38,480	
	PWFn =	0.5537		PW =	0.5537	X	$134,670	$74,564
YEAR 25								
	PAVEMENT PATCH CLASS B	3.00%	770	SQ YD	$150.00		$115,500	
	SHOULDER PATCH CLASS C	1.00%	0	SQ YD	$145.00		$0	
	PWFn =	0.4776		PW =	0.4776	X	$115,500	$55,163
YEAR 30	NON-INTERSTATE							
	PAVEMENT PATCH CLASS B	4.00%	1,026	SQ YD	$150.00		$153,900	
	SHOULDER PATCH CLASS C	1.50%	0	SQ YD	$145.00		$0	
	HMA POLICY OVERLAY 2.5" (PVMT)	100.00%	25,653	SQ YD	$10.74		$275,627	
	HMA POLICY OVERLAY 2.5" (SHLD)	100.00%	0	SQ YD	$10.08		$0	
	PWFn =	0.4120		PW =	0.4120	X	$429,527	$176,959
YEAR 35	NON-INTERSTATE							
	LONGITUDINAL SHLD JT R&S	100.00%	9,620	LIN FT	$2.00		$19,240	
	CENTERLINE JT R&S	100.00%	19,240	LIN FT	$2.00		$38,480	
	RANDOM CRACK R&S	50.00%	9,620	LIN FT	$2.00		$19,240	
	REFLECTIVE TRANSVERSE CRACK R&S	40.00%	6,163	LIN FT	$2.00		$12,326	
	PD PVMT PATCH M&F HMA 2.50"	0.10%	26	SQ YD	$81.07		$2,108	
	PWFn =	0.3554		PW =	0.3554	X	$91,394	$32,480
YEAR 40	NON-INTERSTATE							
	PAVEMENT PATCH CLASS B	0.50%	128	SQ YD	$150.00		$19,200	
	LONGITUDINAL SHLD JT R&S	100.00%	9,620	LIN FT	$2.00		$19,240	
	CENTERLINE JT R&S	100.00%	19,240	LIN FT	$2.00		$38,480	
	REFLECTIVE TRANSVERSE CRACK R&S	60.00%	9,245	LIN FT	$2.00		$18,490	
	RANDOM CRACK R&S	50.00%	9,620	LIN FT	$2.00		$19,240	
	PD PVMT PATCH M&F HMA 2.50"	0.50%	128	SQ YD	$81.07		$10,376	
	PWFn =	0.3066		PW =	0.3066	X	$125,026	$38,328
								$385,306
	ROUTINE MAINTENANCE ACTIVITY		3.64	Lane Miles	$0.00		$0	$0
							MAINTENANCE LIFE-CYCLE COST	$385,306
45	YEAR LIFE CYCLE	CRFn = 0.0407852					MAINTENANCE ANNUAL COST PER MILE	$17,250



EXISTING IRVING PARK ROAD (IL ROUTE 19)
STA 504+91.58 TO STA 509+89
STA 527+47 TO STA 532+80



EXISTING IRVING PARK ROAD (IL ROUTE 19)
STA 532+80 TO STA 553+00
•STA 532+80 TO STA 540+00 AND STA 545+74 TO 549+08



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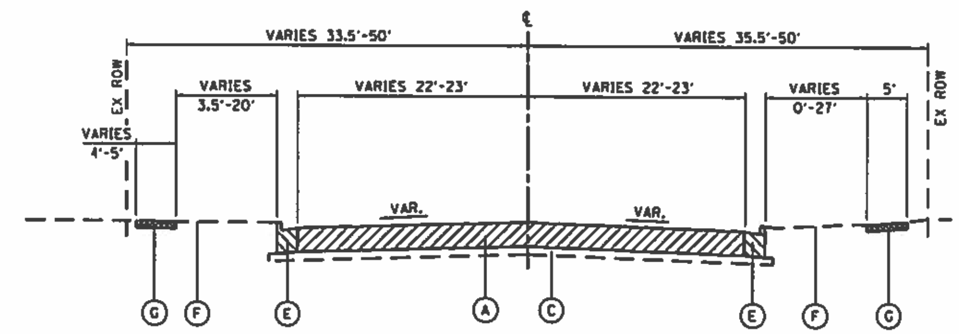
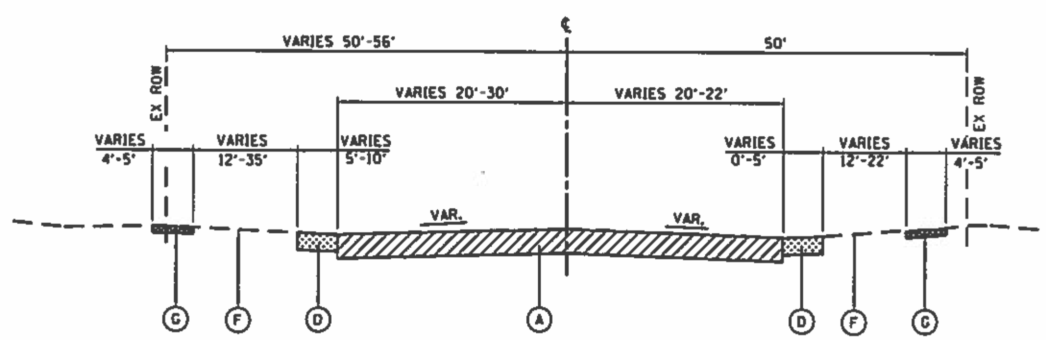
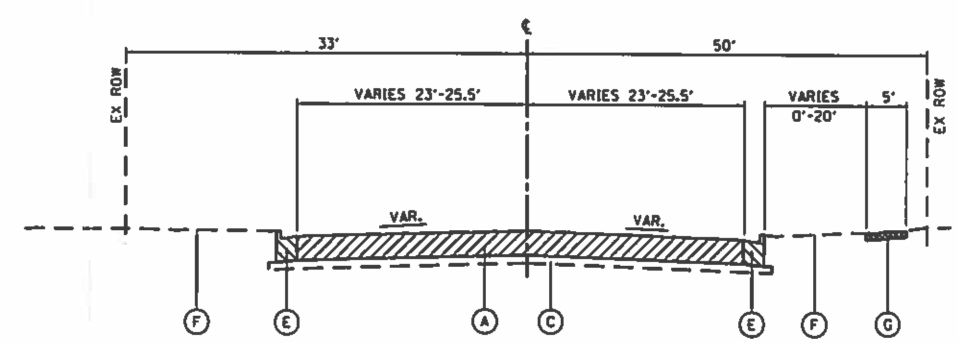
STA STA 509+89 TO 511+26



EXISTING BARTLETT ROAD
STA 607+73.73 TO STA 611+09.43
STA 618+17.67 TO 622+00



EXISTING IRVING PARK ROAD (IL ROUTE 19)
STA STA 511+26 TO 527+47



EXISTING BARTLETT ROAD
STA 611+09.43 TO STA 618+17.67

EXISTING PAVEMENT THICKNESS

LOCATION	THICKNESS
IRVING PARK ROAD (IL ROUTE 19)	
STA 504+91.58 TO STA 516+00	
HOT-MIX ASPHALT	8"
PC CONCRETE	7 ½"
STA 516+00 TO STA 526+00	
HOT-MIX ASPHALT	9 ½"
STA 526+00 TO STA 534+50	
HOT-MIX ASPHALT	13 ¼"
STA 534+50 TO STA 553+00	
HOT-MIX ASPHALT	3 ½"
PC CONCRETE	7"
BARTLETT ROAD	
STA 607+73.73 TO STA 614+28.52	
PC CONCRETE	9 ½"
STA 614+89.27 TO STA 622+00	
PC CONCRETE	11"

NOTES:

1. CRACK CONTROL FABRIC FOUND IN CORE AT STATION 510+90. REMOVAL OF CRACK CONTROL FABRIC SHALL BE INCLUDED IN THE COST OF PAVEMENT REMOVAL.
2. ¼" DIA. WIRE MESH FOUND IN CORE AT STATION 616+30. REMOVAL OF WIRE MESH SHALL BE INCLUDED IN THE COST OF PAVEMENT REMOVAL.

EXISTING TYPICAL SECTION LEGEND

- (A) PAVEMENT REMOVAL (SEE TABLE FOR DEPTHS)
- (B) SUBBASE GRANULAR MATERIAL, 3"-4" (PAID AS EARTH EXCAVATION)
- (C) SUBBASE GRANULAR MATERIAL, 6 ⅜"-8 ⅛" (PAID AS EARTH EXCAVATION)
- (D) AGGREGATE SHOULDERS
- (E) COMBINATION CONCRETE CURB AND GUTTER
- (F) EXISTING GROUND
- (G) PORTLAND CEMENT CONCRETE SIDEWALK

PAVEMENT REMOVAL
SIDEWALK REMOVAL
COMBINATION CONCRETE CURB AND GUTTER REMOVAL
SHOULDER REMOVAL

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PROJECT CONTACT: $PROJECT_CONTACT$
CLIENT: $CLIENT$
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HRGreen
HRGreen.com

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	DRAWN -	REVISED -
PLOT SCALE =	CHECKED -	REVISED -
PLOT DATE = 2/24/2017	DATE - 2/24/17	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Check Spreadsheet

SCALE: | SHEET NO. OF SHEETS | STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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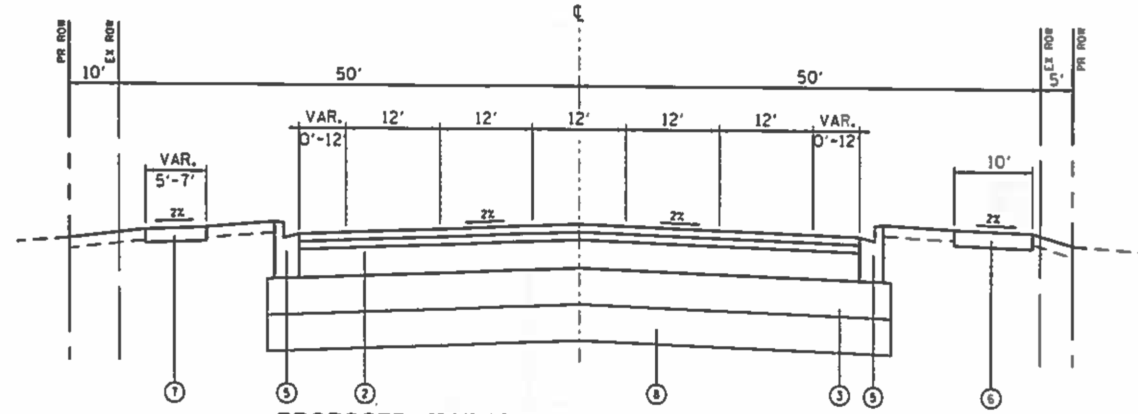
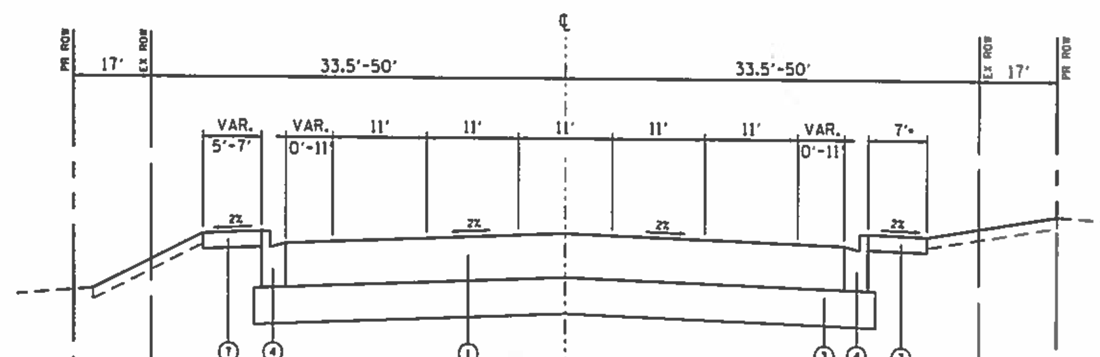
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	COOK		



PROPOSED IRVING PARK ROAD (IL ROUTE 19)

STA. 504+91.58 TO STA. 553+00

LANE WIDTHS TAPER TO 11' FROM STA. 540+00 TO STA. 553+00



PROPOSED BARTLETT ROAD

STA. 607+73.73 TO STA. 622+00

*SEGMENTAL BLOCK RETAINING WALL ADJACENT TO SIDEWALK FROM IL 19 TO STA. 611+50

PROPOSED TYPICAL SECTION LEGEND

1. PORTLAND CEMENT CONCRETE PAVEMENT
2. HOT-MIX FULL DEPTH PAVEMENT
3. AGG SUBGRADE IMP 12"
4. COMBINATION CONCRETE CURB & GUTTER, TYPE B-6.12
5. COMBINATION CONCRETE CURB & GUTTER, TYPE B-6.24
6. HOT-MIX ASPHALT PATH
7. PORTLAND CEMENT CONCRETE SIDEWALK
8. AGG SUBGRADE IMP (CUYD)

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PROJECT CONTACT: $PROJECT_CONTACT$
CLIENT: $CLIENT$
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HRGreen.com
Illinois Professional Design Firm # 184-001322
HRGreen

USER NAME : jhorwit	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	DRAWN -	REVISED -	
PLOT SCALE :	CHECKED -	REVISED -	
PLOT DATE : 2/24/2017	DATE - 2/24/17	REVISED -	

TYPICAL SECTIONS

SCALE: | SHEET NO. 2 OF 3 SHEETS | STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1321		COOK	5	5
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	COOK		

266-sht-typloor-02.dgn