



# Illinois Department of Transportation

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To: Anthony J. Quigley                      Attn: John Baczek  
From: Jack Elston                              By: Michael Brand *mdB*  
Subject: Pavement Design Approval  
Date: June 15, 2018

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Route: Wolf Road                              Job No.: D-91-280-12  
Section: 3941-R                                Contract No.: 60T05  
County: Cook                                  Target Letting: 06CY19  
Limits: IL 21 to North of Hintz Road

We have reviewed the updated pavement design for the above referenced project which was submitted on June 5, 2018. The design was originally approved on July 9, 2014 but needed to be updated as it would expire prior to the anticipated letting date.

The scope of the project is to reconstruct Wolf Road to provide a three-lane cross section and then transfer jurisdiction of the roadway to the village of Wheeling. IL 68 (Dundee Road) and Highland Avenue will also be widened at Wolf Road to accommodate the improvements at the intersection.

Reconstruction of Wolf Road - Due to the jurisdictional transfer to the village and their request for concrete pavement, we concur with the District this is a "special design" and no economic analysis is required.

Widening of IL 68 (Dundee Road) and Highland Avenue - These two designs were analyzed on a first cost basis. Both resulted in the mechanistic design being the least expensive.

In summary, the approved pavement designs are as follows:

<u>Wolf Road</u>	<u>IL 68 (Dundee Road)</u>
8" PCC with Curb & Gutter	9.75" Full-Depth HMA
12" Agg Subgrade Improvement	12" Agg Subgrade Improvement

Highland Avenue  
7" Full-Depth HMA  
12" Agg Subgrade Improvement

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



**Highland Avenue<sup>7</sup>**

Widening and Resurfacing

7" Full Depth HMA<sup>6</sup>

2" HMA Surface Course, Mix "D", N70<sup>2</sup>

5" HMA Binder Course, IL-19.0, N70<sup>4</sup>

12" Aggregate Subgrade Improvement<sup>5</sup>

<sup>1</sup>**Designer Note 1:** Use pay item **42000301, PORTLAND CEMENT CONCRETE PAVEMENT 8" (JOINTED)**, paid for in square yards.

<sup>2</sup>**Designer Note 2:** Use pay item **40603340, HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70** paid for in tons.

<sup>3</sup>**Designer Note 3:** For widening of six feet or less use pay item **35600707, HOT-MIX ASPHALT BASE COURSE WIDENING, 7 ¾"**, paid for in square yards. For widening of greater than six feet use pay item **35501315, HOT-MIX ASPHALT BASE COURSE, 7 ¾"**, paid for in square yards.

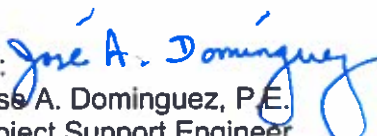
<sup>4</sup>**Designer Note 4:** For widening of six feet or less use pay item **#1009860, HOT-MIX ASPHALT BASE COURSE WIDENING, 5"**, paid for in square yards. For widening of greater than six feet use pay item **35501304, HOT-MIX ASPHALT BASE COURSE, 5"**, paid for in square yards.

<sup>5</sup>**Designer Note 5:** Use pay item **30300112, "AGGREGATE SUBGRADE IMPROVEMENT, 12" "** paid for in square yards.

<sup>6</sup>**Designer Note 6:** Refer to the District One, Bureau of Materials' "Hot-Mix Asphalt – Mix Selection" tables to determine the corresponding HMA mix table requirements for the plans.

<sup>7</sup>**Designer Note 7:** Highland Avenue is subject to local jurisdictional approval and concurrence.

If you have any questions or need additional information, please contact Ojas Patel, Pavement Engineer, at (847) 705-4550.

By:   
Jose A. Dominguez, P.E.  
Project Support Engineer

# First Cost Analysis of Widening Project

Date: 6/15/2018  
 Quantities by: ONP  
 Unit prices by: MA

Checked by:  
 Checked by:  
 Net Length

Route: Highland Ave.  
 Section: 3941-R  
 County: Cook  
 Project: Wolf Road (IL 21 to Hintz Rd)  
 Contract: 60T05

<b>Mechanistic Flexible</b>							
Area (Sq. Yd.)	Height (inches)	Weight (Tons)	Material		Unit Cost	Total	ITEM #
		0	HMA <b>Surface</b> Course, MIX "D" N50	@		\$0.00	40603335
200	2	22	HMA <b>Surface</b> Course, MIX "D" N70	@	\$145	\$3,248.00	40603340
		0	Poly HMA <b>Surface</b> Course, MIX "F" N90	@		\$0.00	40603595
		0	Poly HMA <b>Surface</b> Course, SMA N80	@		\$0.00	40603153
		0	HMA <b>Binder</b> course, IL-19, N50	@		\$0.00	40603080
200	5	56	HMA <b>Binder</b> course, IL-19, N70	@	\$76	\$4,256.00	40603085
		0	HMA <b>Binder</b> course, IL-19, N90	@		\$0.00	40603090
		0	Poly HMA <b>Binder</b> course, IL-19, N90	@		\$0.00	40603240
		0	HMA <b>Binder</b> course, SMA, N80	@		\$0.00	40603148
	NA	NA	12" Aggregate Subgrade	@		\$0.00	30300112
<b>Total</b>						<b>\$7,504.00</b>	

<b>Modified AASHTO</b>							
Area (Sq. Yd.)	Height (inches)	Weight (Tons)	Material		Unit Cost	Total	ITEM #
		0	HMA <b>Surface</b> Course, MIX "D" N50	@		\$0.00	40603335
200	2	22	HMA <b>Surface</b> Course, MIX "D" N70	@	\$145	\$3,248.00	40603340
		0	Poly HMA <b>Surface</b> Course, MIX "F" N90	@		\$0.00	40603595
		0	Poly HMA <b>Surface</b> Course, SMA N80	@		\$0.00	40603153
		0	HMA <b>Binder</b> course, IL-19, N50	@		\$0.00	40603080
200	6.5	73	HMA <b>Binder</b> course, IL-19, N70	@	\$76	\$5,532.80	40603085
		0	HMA <b>Binder</b> course, IL-19, N90	@		\$0.00	40603090
		0	Poly HMA <b>Binder</b> course, IL-19, N90	@		\$0.00	40603240
		0	HMA <b>Binder</b> course, SMA, N80	@		\$0.00	40603148
	NA	NA	12" Aggregate Subgrade	@		\$0.00	30300112
<b>Total</b>						<b>\$8,780.80</b>	

<b>Composite</b>							
Area (Sq. Yd.)	Height (inches)	Weight (Tons)	Material		Unit Cost	Total	ITEM #
		0	HMA <b>Surface</b> Course, MIX "D" N50	@		\$0.00	40603335
200	2	22	HMA <b>Surface</b> Course, MIX "D" N70	@	\$145	\$3,248.00	40603340
		0	Poly HMA <b>Surface</b> Course, MIX "F" N90	@		\$0.00	40603595
		0	Poly HMA <b>Surface</b> Course, SMA N80	@		\$0.00	40603153
200	5	NA	PCC Base Course	@	\$60	\$12,000.00	35300410
	NA	NA	12" Aggregate Subgrade	@		\$0.00	30300112
<b>Total</b>						<b>\$15,248.00</b>	

# First Cost Analysis of Widening Project

Date: 6/5/2018  
 Quantities by: ONP  
 Unit prices by: MA

Checked by:  
 Checked by:  
 Net Length

Route IL 68  
 Section 3941-R  
 County Cook  
 Project Wolf Road (IL 21 to Hintz Rd)  
 Contract 60T05

<b>Mechanistic Flexible</b>							
Area (Sq. Yd.)	Height (inches)	Weight (Tons)	Material		Unit Cost	Total	ITEM #
		0	HMA <b>Surface</b> Course, MIX "D" N50	@		\$0.00	40603335
611	2	68	HMA <b>Surface</b> Course, MIX "D" N70	@	\$145	\$9,922.64	40603340
		0	Poly HMA <b>Surface</b> Course, MIX "F" N90	@		\$0.00	40603595
		0	Poly HMA <b>Surface</b> Course, SMA N80	@		\$0.00	40603153
		0	HMA <b>Binder</b> course, IL-19, N50	@		\$0.00	40603080
611	7.75	265	HMA <b>Binder</b> course, IL-19, N70	@	\$76	\$20,153.22	40603085
		0	HMA <b>Binder</b> course, IL-19, N90	@		\$0.00	40603090
		0	Poly HMA <b>Binder</b> course, IL-19, N90	@		\$0.00	40603240
		0	HMA <b>Binder</b> course, SMA, N80	@		\$0.00	40603148
	NA	NA	12" Aggregate Subgrade	@		\$0.00	30300112
<b>Total</b>						<b>\$30,075.86</b>	

<b>Modified AASHTO</b>							
Area (Sq. Yd.)	Height (inches)	Weight (Tons)	Material		Unit Cost	Total	ITEM #
		0	HMA <b>Surface</b> Course, MIX "D" N50	@		\$0.00	40603335
611	2	68	HMA <b>Surface</b> Course, MIX "D" N70	@	\$145	\$9,922.64	40603340
		0	Poly HMA <b>Surface</b> Course, MIX "F" N90	@		\$0.00	40603595
		0	Poly HMA <b>Surface</b> Course, SMA N80	@		\$0.00	40603153
		0	HMA <b>Binder</b> course, IL-19, N50	@		\$0.00	40603080
611	11	376	HMA <b>Binder</b> course, IL-19, N70	@	\$76	\$28,604.58	40603085
		0	HMA <b>Binder</b> course, IL-19, N90	@		\$0.00	40603090
		0	Poly HMA <b>Binder</b> course, IL-19, N90	@		\$0.00	40603240
		0	HMA <b>Binder</b> course, SMA, N80	@		\$0.00	40603148
	NA	NA	12" Aggregate Subgrade	@		\$0.00	30300112
<b>Total</b>						<b>\$38,527.22</b>	

<b>Composite</b>							
Area (Sq. Yd.)	Height (inches)	Weight (Tons)	Material		Unit Cost	Total	ITEM #
		0	HMA <b>Surface</b> Course, MIX "D" N50	@		\$0.00	40603335
611	2	68	HMA <b>Surface</b> Course, MIX "D" N70	@	\$145	\$9,922.64	40603340
		0	Poly HMA <b>Surface</b> Course, MIX "F" N90	@		\$0.00	40603595
		0	Poly HMA <b>Surface</b> Course, SMA N80	@		\$0.00	40603153
611	10	NA	PCC Base Course	@	\$68	\$41,548.00	35300410
	NA	NA	12" Aggregate Subgrade	@		\$0.00	30300112
<b>Total</b>						<b>\$51,470.64</b>	