



July 26, 2024

RE: IL 53 Ramp Evaluation
IDOT Contract Number 62N91
IDOT Job Number D-91-144-21
Section 2018-100-BR
Cook County
District 1
PTB 203-021
Gonzalez Job No. 23-1003

SUBJECT: TECHNICAL MEMO

This memorandum was produced by Gonzalez Companies, LLC working as a sub-consultant to Strand Associates, Inc. and is part of a Phase II contract with the Illinois Department of Transportation (IDOT). The work is included as part of the IL 53 Bridge Rehabilitation Project from IL 62 (Algonquin Road) to Lake Cook Road. The results of the IL 53 ramp evaluation for Lake Cook Road and Dundee Road are presented herein.

Attachment 1 Ramp Pavement Core Summary Table (1 page)
Attachment 2 Photographic Pavement Core Summary Table (6 pages)
Attachment 3 Coring Location Plan (3 pages)

Prepared by: Eric Glazier, P.E.
GONZALEZ COMPANIES, LLC

Prepared for: STRAND ASSOCIATES, INC.

IDOT Contract Number 62N91
IDOT Job Number D-91-144-21
Route IL 53 (FAP 342)
Section 2018-100-BR
County Cook
District 1
PTB 203-021



Prepared by Gonzalez Companies, LLC























Ramp Pavement Core Summary - IL 53 Interchanges

Sample ID	Total Thickness (Inches)	SMA Surface 1 (Inches)	HMA Surface 1 (Inches)	HMA Surface 2 (Inches)	HMA Leveling Binder 1 (Inches)	HMA Leveling Binder 2 (Inches)	HMA Binder 1 (Inches)	HMA Binder 2 (Inches)	HMA Binder 3 (Inches)	HMA Binder 4 (Inches)	HMA Binder 5 (Inches)	HMA Layer 2 (Inches)	HMA Layer 3 (Inches)	HMA Layer 4 (Inches)	Concrete (Inches)	Broken Concrete (Inches)	Subbase Stone (Inches)	Asphalt Grindings (Inches)
CC-1	10.5		3													7.5	3.5	
CC-2	14		3										4			7		
DD-1	12		1.5		0.5			1.5								8.5	3	
DD-2	18		1.5		1.5			6.5	8.5								4	
EE-1	14						7									7		
EE-2	12						3.5									8.5	9	
FF-1	16						1	5.5								9.5	6	
FF-2	18						3.5							4		10.5	4	
GG-1 ¹	14		2				4.5					1.5				6	8	
GG-2	16		1.25				1	5.25	1.5	3.75	3.25							6
HH-1	15		2				2									11	7	
HH-2	17		2.5				2.5									12	5	
II-1 ²	20		2				2.5	3								12.5		2
II-2 ²	20		2.5	2.5			2.5	9					3.5					2
JJ-1 ³	17	2			3.5										11.5			5
JJ-2 ³	17	2				0.5	2								12.5			4
KK-1 ^{2,3}	18	2				0.75	2.5									12.75		4
KK-2 ³	16	2.5				0.75	1.75									11		6
No. of samples	18	4	10	1	3	3	13	6	2	1	1	1	2	1	2	13	9	7
Minimum	10.5	2	1.25	2.5	0.5	0.5	1	1.5	1.5	3.75	3.25	1.5	3.5	4	11.5	6	3	2
Average	15.8	2.1	2.1	2.5	1.8	0.7	2.8	5.1	5.0	3.8	3.3	1.5	3.8	4.0	12.0	9.5	5.5	4.1
Maximum	20	2.5	3	2.5	3.5	0.75	7	9	8.5	3.75	3.25	1.5	4	4	12.5	12.75	9	6

NOTE:




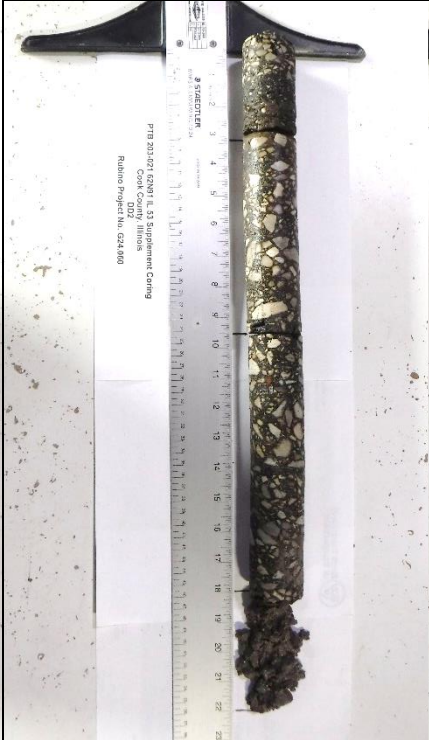


- ¹ POSSIBLE Subbase Stone
² POSSIBLE Asphalt Grindings
³ POSSIBLE SMA Surface

Cores were taken in the pavement of various on and off ramps along IL 53 in Cook County, Illinois. The table below summarizes the thicknesses observed in the field and laboratory.







CC-1 (SB On Ramp from EB Dundee Rd)	CC-2 (SB On Ramp from EB Dundee Rd)	DD-1 (NB Off Ramp from IL 53 to Dundee Rd)
		
Picture Taken Facing South	Picture Taken Facing South	Picture Taken Facing North
		
<u>Total Thickness = 10 ½ inches</u>  HMA Surface ₁ = 3 in.  Weathering & Deterioration  Broken Concrete = 7 ½ in.  Subbase Stone = 3 ½ inches  (Not Recovered)	<u>Total Thickness = 14 inches</u>  HMA Surface ₁ = 3 in.  NOT FULLY RECOVERED  Broken Concrete = 7 in.  Weathering & Deterioration  HMA Layer ₃ = 4 in.  NOT FULLY RECOVERED  Subbase Stone Not Observed	<u>Total Thickness = 12 inches</u>  HMA Surface ₁ = 1 ½ in.  HMA Leveling Binder ₁ = ½ in.  HMA Binder ₂ = 1 ½ in.  Weathering & Deterioration  Broken Concrete = 8 ½ in.  Subbase Stone = 3 inches








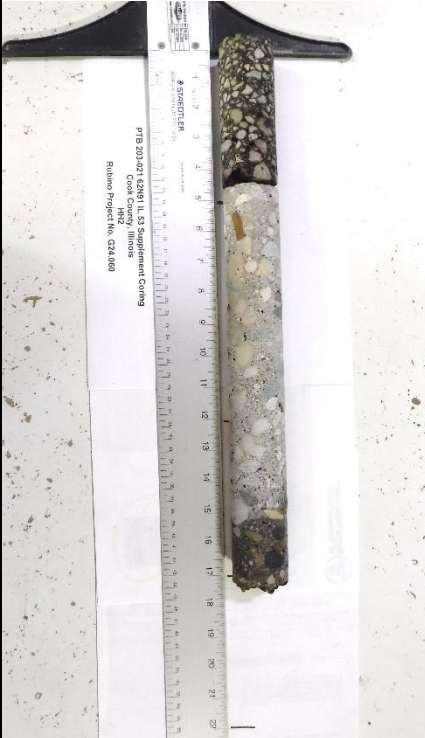

















Pavement Core Summary Table – PTB 203-021 62N91 IL 53 Supplement Coring in Cook County, IL
Core Photos Page 2 of 6

DD-2 (NB Off Ramp from IL 53 to Dundee Rd)	EE-1 (SB Off Ramp from IL 53 to Dundee Rd)	EE-2 (SB Off Ramp from IL 53 to Dundee Rd)
		
Picture Taken Facing North	Picture Taken Facing South	Picture Taken Facing South
		
<p><u>Total Thickness = 18 inches</u></p> <ul style="list-style-type: none"> HMA Surface₁ = 1 ½ in. HMA Leveling Binder₁ = 1 ½ in. Weathering & Deterioration HMA Binder₂ = 6 ½ in. Weathering & Deterioration HMA Binder₃ = 8 ½ in. Subbase Stone = 4 inches <p>Core Barrel Reached Max Depth at 22 inches</p>	<p><u>Total Thickness = 14 inches</u></p> <ul style="list-style-type: none"> Broken Concrete = 7 in. Weathering & Deterioration HMA Binder₁ = 7 in. NOT FULLY RECOVERED Subbase Stone Not Observed 	<p><u>Total Thickness = 12 inches</u></p> <ul style="list-style-type: none"> Broken Concrete = 8 ½ in. HMA Binder₁ = 3 ½ in. NOT FULLY RECOVERED Subbase Stone = 9 inches









FF-1 (SB On Ramp from WB Dundee Rd)	FF-2 (SB On Ramp from WB Dundee Rd)	GG-1 (NB On Ramp from Dundee Rd to IL 53)
		
Picture Taken Facing North	Picture Taken Facing Southeast	Picture Taken Facing North
		
<p><u>Total Thickness = 16 inches</u></p> <ul style="list-style-type: none"> Broken Concrete = 9 ½ in. HMA Binder₁ = 1 in. Weathering & Deterioration HMA Binder₂ = 5 ½ in. NOT FULLY RECOVERED Subbase Stone = 6 inches <p>Core Barrel Reached Max Depth at 22 inches</p>	<p><u>Total Thickness = 18 inches</u></p> <ul style="list-style-type: none"> Broken Concrete = 10 ½ in. Weathering & Deterioration HMA Binder₁ = 3 ½ in. Subbase Stone = 4 inches HMA Layer₄ = 4 in. NOT FULLY RECOVERED <p>Core Barrel Reached Max Depth at 22 inches</p>	<p><u>Total Thickness = 14 inches</u></p> <ul style="list-style-type: none"> HMA Surface₁ = 2 in. Weathering & Deterioration HMA Layer₂ = 1 ½ in. Broken Concrete = 6 in. Weathering & Deterioration HMA Binder₁ = 4 ½ in. NOT FULLY RECOVERED Possible Subbase Stone = 8 inches (Not Recovered) <p>Core Barrel Reached Max Depth at 22 inches</p>
























GG-2 (NB On Ramp from Dundee Rd to IL 53)	HH-1 (SB On Ramp from EB Lake Cook Rd)	HH-2 (SB On Ramp from EB Lake Cook Rd)
		
Picture Taken Facing North	Picture Taken Facing East	Picture Taken Facing South
		
<p><u>Total Thickness = 16 inches</u></p> <ul style="list-style-type: none">  HMA Surface₁ = 1 ¼ in.  HMA Binder₁ = 1 in.  Weathering & Deterioration  HMA Binder₂ = 5 ¼ in.  Weathering & Deterioration  HMA Binder₃ = 1 ½ in.  HMA Binder₄ = 3 ¾ in.  Weathering & Deterioration  HMA Binder₅ = 3 ¼ in. Asphalt Grindings = 6 inches Core Barrel Reached Max Depth at 22 inches 	<p><u>Total Thickness = 15 inches</u></p> <ul style="list-style-type: none">  HMA Surface₁ = 2 in.  HMA Binder₁ = 2 in.  Weathering & Deterioration  Broken Concrete = 11 in. Subbase Stone = 7 inches Core Barrel Reached Max Depth at 22 inches 	<p><u>Total Thickness = 17 inches</u></p> <ul style="list-style-type: none">  HMA Surface₁ = 2 ½ in.  HMA Binder₁ = 2 ½ in.  Weathering & Deterioration  Broken Concrete = 12 in. Subbase Stone = 5 inches (Not Recovered) Core Barrel Reached Max Depth at 22 inches



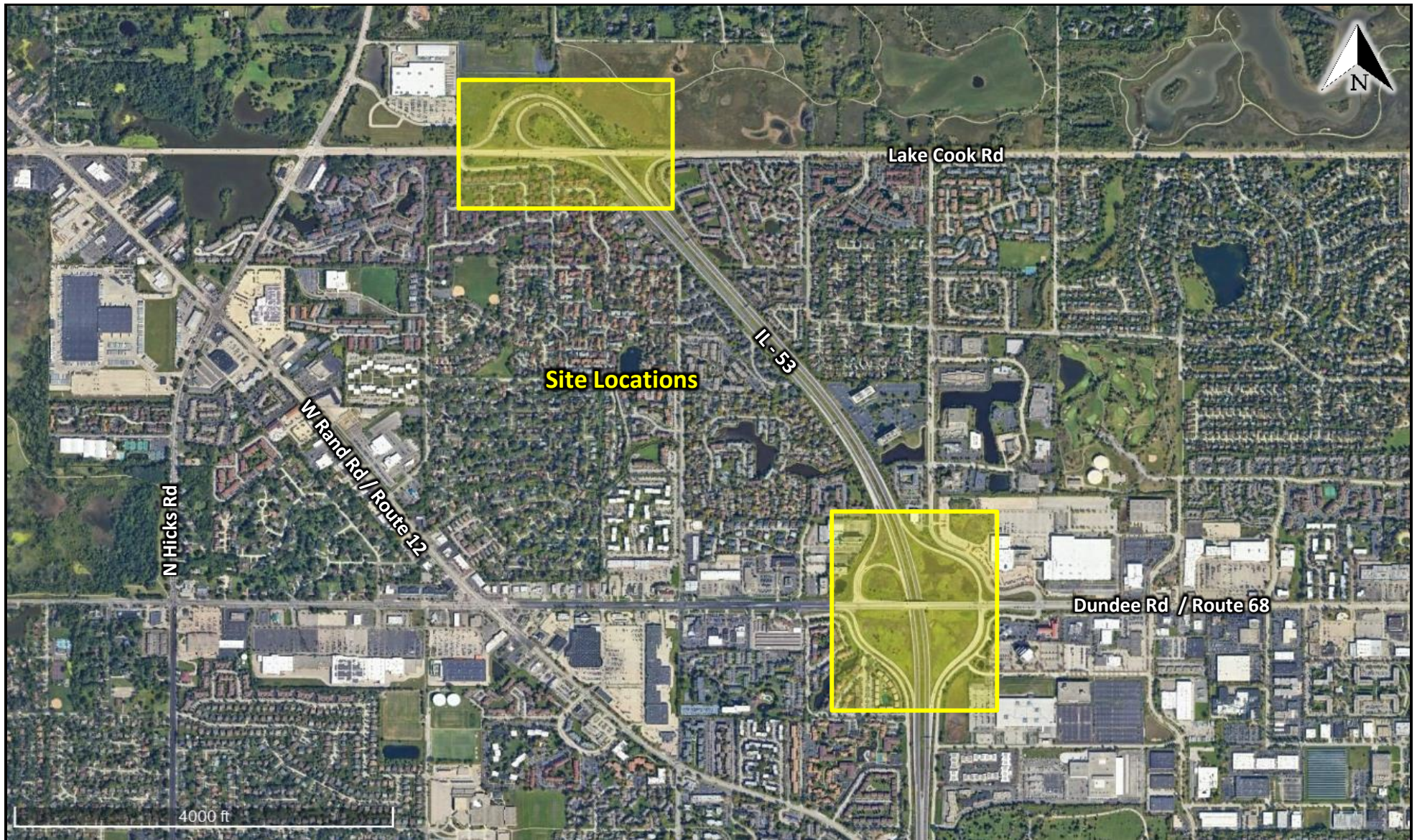
II-1 (NB Off Ramp from 53 to Lake Cook Rd)	II-2 (NB Off Ramp from 53 to Lake Cook Rd)	JJ-1 (NB Off Ramp to WB Lake Cook Rd)
		
Picture Taken Facing North	Picture Taken Facing North	Picture Taken Facing West
		
<p><u>Total Thickness = 20 inches</u></p> <ul style="list-style-type: none"> HMA Surface₁ = 2 in. HMA Binder₁ = 2 ½ in. Weathering & Deterioration Broken Concrete = 12 ½ in. HMA Binder₂ = 3 in. NOT FULLY RECOVERED Possible Asphalt Grindings = 2 inches (Not Recovered) Core Barrel Reached Max Depth at 22 inches 	<p><u>Total Thickness = 20 inches</u></p> <ul style="list-style-type: none"> HMA Surface₁ = 2 ½ in. Weathering & Deterioration HMA Surface₂ = 2 ½ in. Weathering & Deterioration HMA Binder₁ = 2 ½ in. Weathering & Deterioration HMA Binder₂ = 9 in. Weathering & Deterioration HMA Layer₅ = 3 ½ in. NOT FULLY RECOVERED Possible Asphalt Grindings = 2 inches (Not Recovered) Core Barrel Reached Max Depth at 22 inches 	<p><u>Total Thickness = 17 inches</u></p> <ul style="list-style-type: none"> Possible SMA Surface₁ = 2 in. HMA Binder₁ = 3 ½ in. NOT FULLY RECOVERED Concrete = 11 ½ in. Asphalt Grindings = 5 inches Core Barrel Reached Max Depth at 22 inches



JJ-2 (NB Off Ramp to WB Lake Cook Rd)	KK-1 (SB On Ramp from WB Lake Cook Rd)	KK-2 (SB On Ramp from WB Lake Cook Rd)
		
Picture Taken Facing North	Picture Taken Facing South	Picture Taken Facing North
		
<p><u>Total Thickness = 17 inches</u></p> <p> Possible SMA Surface₁ = 2 in. Weathering & Deterioration  HMA Binder₁ = 2 in.  HMA Leveling Binder₂ = ½ in.  Concrete = 12 ½ in.  Asphalt Grindings = 4 inches</p>	<p><u>Total Thickness = 18 inches</u></p> <p> Possible SMA Surface₁ = 2 in.  HMA Binder₁ = 2 ½ in. Weathering & Deterioration  HMA Leveling Binder₂ = ¾ in.  Broken Concrete = 12 ¾ in.  Possible Asphalt Grindings = 4 inches (Not Recovered) <p align="center">Core Barrel Reached Max Depth at 22 inches</p> </p>	<p><u>Total Thickness = 16 inches</u></p> <p> Possible SMA Surface₁ = 2 ½ in. Weathering & Deterioration  HMA Binder₁ = 1 ¾ in.  HMA Leveling Binder₂ = ¾ in.  Broken Concrete = 11 in.  Asphalt Grindings = 6 inches <p align="center">Core Barrel Reached Max Depth at 22 inches</p> </p>

The referenced thicknesses are considered approximate. Commentary provided by Rubino is based on our observation in the laboratory; **Crack** = vertical through cross section; **Weathering** = rounded edges & degradation of asphalt and **Deterioration** = horizontal crack. Pavement and subbase type and thickness may vary between core locations. Any comments on the condition of the material are considered our opinion and should be verified by the design engineer.





rubino
ENGINEERING INC.

425 Shepard Drive
Elgin, Illinois 60123

Project Name: PTB 203-021 62N91 IL 53 Supplement Coring
Project Location: IL 53 - Dundee Ave and IL 53 - Lake Cook Rd Ramps
 Cook County, Illinois
Client: Gonzalez Companies, LLC
Rubino Project # : G24.060

**Site
Vicinity
Map**



rubino
ENGINEERING INC.

425 Shepard Drive
Elgin, Illinois 60123

Project Name:
Project Location:

Client:
Rubino Project # :

PTB 203-021 62N91 IL 53 Supplement Coring
IL 53 - Dundee Ave Ramps
Cook County, Illinois
Gonzalez Companies, LLC
G24.060

Coring
Location
Plan
1 of 2



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425 Shepard Drive
Elgin, Illinois 60123

Project Name:
Project Location:

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Rubino Project # :

PTB 203-021 62N91 IL 53 Supplement Coring
IL 53 - Lake Cook Rd Ramps
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Coring
Location
Plan
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