## Aggregate Optimization Chart

PLANT #: Sample Date:		P-103					Contractor:			-		
		6/23/25										
Dates Test R	cepresents:	6/24/2025	through	6/30/2025			MDOT No.:			-		
Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution						
6AA	58-003	Stoneco	1530	9.11	2.69	51.9						
26A	58-003	Stoneco	270	1.61	2.69	9.2						
2NS	63-114	Highland	1150	6.95	2.65	39.0				SUP	ERIOR	
		Total Wt	2950	17.68		100.0	< Verify this n	umber is 100%			RIALS	
Sieve	6AA		26A		2NS	Cumulative % Passing	% Retained	Cumulative % Retained			<b>Materials, LLC</b> 10 Mile Rd.	
2"	100.0		100.0		100.0	100.0	0.0	0.0	Suite 500			
1.5"	1(	0.0	100.0		100.0	100.0	0.0	0.0	Farmington Hills, MI 48336			
1"	99.6		100.0		100.0	99.8	0.2	0.2	]			
3/4"	1/2" 44.1		100	-	100.0	92.3						
-			99.0		100.0	70.9	21.4	29.1				
3/8"			82.3		100.0	59.6	11.3	40.4	*Maximum % Retained must be above the 3/8" sieve			
#4 4.8		6.2		98.8 85.8	41.6 34.5	18.0 7.0	58.4 65.5	*Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.				
#8 #16	#8 1.8 #16 1.3		1.7 1.3		69.4	34.5 27.8	6.7	72.2				
#16 1.3 #30 1.1		1.2		51.0	20.6					6 for each sieve except		
#50 #50			1.1		25.2	10.5	10.1	89.5	*% Retained must be at least 4% for the 3/4" sieve when			
#100		1.0	1.1		4.9	2.5	8.0	97.5		aggregate is used.		
LBW	(	0.9	1.	0	0.5	0.8	1.8	99.2		,		
Production G	Gradation	🔵 Batch Plant Gra	dations 💿 Agg	regate Supplier Gra	dations	Adjusted WF	Intial Production	on Sample (IPS	S)			
Coarsene	ess Factor:	62	Workability Factor:		35	37.0	Coarseness Factor: Workability Factor:		61	1		
	<b>_</b>								36	1		
45					JMF Zone			Cumulative	%	Cumulative		
· · · ·	45, 44				JIVIF Zone		Sieve	% Passing	Retained	% Retained		
-		52, 41	40	67 40			2"	100.0	0.0	0.0		
				68, 38	75, 39		1.5"	100.0	0.0	0.0		
ू <sup>40</sup> ]				oduction Gradation	1		1"	99.3	0.7	0.7		
(%) <sup>40</sup>			■ <b>●</b> µβ§	Succion Gradation			3/4"	89.2	10.1	10.8		
tor (%)							1/2" 3/8"	70.7 60.7	18.5	29.3 39.3		
actor (%)			i ·					I DU /	10.0	.14.1		
Factor (%)	45.33	52, 34										
Factor (%)	45, 33	52, 34	32	67 32			#4	44.4	16.3	55.6		
Factor (%)				67,32 <sub>58,31</sub>			#4 #8	44.4 35.9	16.3 8.5	55.6 64.1		
Factor (%)	Operating Zone		32	67, 32, 31	75. 20		#4 #8 #16	44.4 35.9 27.3	16.3 8.5 8.6	55.6		
Workability Factor (%)			L	67, 32, 31	75, 28		#4 #8	44.4 35.9	16.3 8.5	55.6 64.1 72.7		
Factor (%)	Operating Zone			65 70 Factor (%)	75, 28		#4 #8 #16 #30	44.4 35.9 27.3 19.1	16.3 8.5 8.6 8.2	55.6 64.1 72.7 80.9		

PREPARED BY: SM, LLC Technical Service

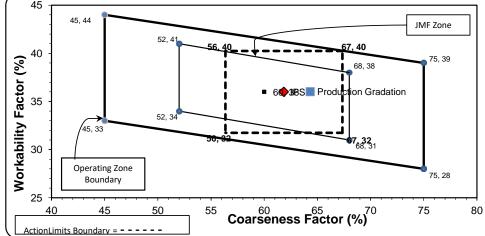
Approved BY: Mary P. Bal

## Aggregate Optimization Chart

PLANT a	#:	p11					Contractor:				
Sample Date	:	6/23/25		C	Concrete Grade	DM, 4500HP					
Dates Test R	epresents:	6/24/2025	through	6/30/2025			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1450	8.87	2.62	49.9					
26A	71-47	Presque Isle	305	1.87	2.62	10.5					
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6				SUP	ERIOR
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%			RIALS
Sieve	(	6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained			<b>Materials, LLC</b> 10 Mile Rd.
2"	1	00.0	100	0.0	100.0	100.0	0.0	0.0		Suite 500	
1.5"	1	00.0	100	0.0	100.0	100.0	0.0	0.0		Farmingto	n Hills, MI 48336
1"	Q	97.0	100	0.0	100.0	98.5	1.5	1.5			
3/4"		74.6	100	0.0	100.0	87.3	11.2	12.7			
1/2"		32.4	96	6.5	100.0	65.9	21.4	34.1			
3/8"		17.8	83	3.5	100.0	57.2	8.7	42.8	*Maximum %	Retained must be	above the 3/8" sieve.
#4		2.7	19	0.6	96.7	41.7	15.6	58.3	*Any two adja	icent sieves must e	equal 10% except max.
#8		1.8	7.	.6	80.4	33.5	8.2	66.5	nom. max., #10	00 and #200 sieves	S.
#16		1.6	4.		62.8	26.1	7.4	73.9	*% Retained	must be at least 4%	6 for each sieve except
#30		1.5	3.		45.7	19.2	6.9	80.8	nom. max., #10	00 and #200 sieves	S.
#50		1.4	3.		23.7	10.4	8.8	89.6	*% Retained I	must be at least 4%	6 for the 3/4" sieve whe
#100		1.3	3.		5.5	3.2	7.3	96.8	a 1.5" max. siz	e (nom. Max. 1.0")	aggregate is used.
LBW		1.0	2.	.7	0.8	1.1	2.1	98.9			
Production G	Gradation	O Batch Plant Gra	dations 💿 Aggi	regate Supplier Grad	dations	Adjusted WF	Intial Production	on Sample (IPS	5)		
Coarsene	ess Factor:	64	Work	ability Factor:	34	36.0	Coars	eness Factor:	62		
45							Work	ability Factor:	36		
	45, 44	50.44			JMF Zone		Sieve	Cumulative % Passing	% Retained	Cumulative % Retained	
40		52, 41 <b>56</b>	3.40	67, 40			2"	100.0	0.0	0.0	
<b>`</b> ® <sup>‡</sup>				68, 38	75, 39		1.5"	100.0	0.0	0.0	
Ĵ,			!	1			1"	100.0	0.0	0.0	
9			■ 6 <b>()</b> 378	S Production Gra	adation		3/4"	95.0	5.0	5.0	
Factor (%)			i	i			1/2"	72.3	22.8	27.7	
		52, 34	+				3/8"	60.4	11.8	39.6	
<u>i</u>	45, 33			╺╼╾╸┛╎╴╷			#4	42.6	17.8	57.4	



al 10% except max., r each sieve except max., or the 3/4" sieve when gregate is used.



	Coars	seness Factor:	62			
I	Worl	kability Factor:	36			
	Sieve	Cumulative	%	Cumulative % Retained		
	Sleve	% Passing	Retained			
	2"	100.0	0.0	0.0		
	1.5"	100.0	0.0	0.0		
	1"	100.0	0.0	0.0		
ſ	3/4"	95.0	5.0	5.0		
	1/2"	72.3	22.8	27.7		
I	3/8"	60.4	11.8	39.6		
	#4	42.6	17.8	57.4		
	#8	36.0	6.6	64.0		
I	#16	29.5	6.5	70.5		
I	#30	20.3	9.2	79.7		
I	#50	9.5	10.8	90.5		
I	#100	3.4	6.1	96.6		
ľ	LBW	1.3	2.1	98.7		

PREPARED BY: SM, LLC Technical Service

