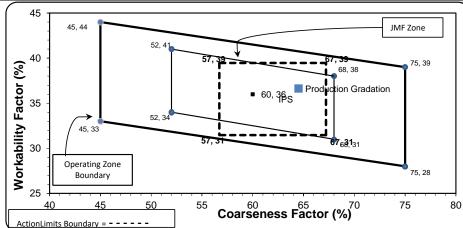
PLANT :	#:	P-101					Contractor:			
Sample Date		4/18/22			Concrete Grade:	DM. 4500HP	50111401011			-
Dates Test R		4/19/2022	through	4/25/2022		,	MDOT No.:			
Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution				
6AA	71-47	Presque Isle	1460	8.93	2.62	50.2				
26A	71-47	Presque Isle	300	1.83	2.62	10.3				
2NS	75-051	Mid Michigan	1150	6.93	2.66	39.5				SU
		Total Wt	2910	17.69		100.0	< Verify this n	umber is 100%	-	SU
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Super</u> i 30701
2"	1	100.0	100	0.0	100.0	100.0	0.0	0.0	1	Suite 5
1.5"	1	100.0	100	0.0	100.0	100.0	0.0	0.0	]	Farmin
1"		98.5	100	0.0	100.0	99.2	0.8	0.8	1	
3/4"		84.5	100		100.0	92.2	7.0	7.8		
1/2"		36.1	95	.8	100.0	67.5	24.7	32.5		
3/8"		18.4	85	.0	100.0	57.5	10.0	42.5	*Maximum %	Retained must
#4		3.0	13		98.5	41.8	15.7	58.2	*Any two adja	icent sieves mu
#8		1.9	2.	6	83.3	34.1	7.7	65.9	nom. max., #1	00 and #200 si
#16		1.7	1.		68.3	28.0	6.2	72.0	*% Retained	must be at leas
#30		1.6	1.		53.3	22.0	6.0	78.0	nom. max., #1	00 and #200 si
#50		1.6	1.		29.2	12.5	9.5	87.5	*% Retained	must be at leas
#100		1.5	1.		7.3	3.7	8.7	96.3	a 2" max. size	(nom. Max. 1.5
LBW		1.4	1.	0	0.6	1.0	2.7	99.0	J	
Production G	Gradation	O Batch Plant Gra	dations 💿 Agg	regate Supplier (	Gradations	Adjusted WF	Initial Producti	on Sample (IP	S)	_
Coarsene	ess Factor:	65	Work	ability Facto	or: 34	36.6	Coars	eness Factor:	62	
45 -							Work	ability Factor:	35	
43	45, 44				JMF Zone		Ciaura	Cumulative	%	Cumulativ
	40, 44				JIVII ZOITE		Sieve	% Passing	Retained	% Retaine
10		52, 41			_		2"	100.0	0.0	0.0
्र <sup>40</sup>			57, 39		<b>9</b> 75, 39		1.5"	100.0	0.0	0.0
<b>e</b>			!				1"	100.0	0.0	0.0
0 I			■ 60, 3	B Production	n Gradation		3/4"	95.0	5.0	5.0
<b>2</b> 35			l l	175			1/2"	70.5	24.5	29.5
	$\rightarrow$	52, 34		<b>i</b>			3/8"	60.0	10.5	40.0
l 🗄	45, 33						#4	44.4	15.6	55.6
rkability Factor (%)			57, 31	67 <sub>6</sub>	<b>ð</b> , <b>1</b> <sub>31</sub>		#8	35.5	9.0	64.5
lā ]∟	Operating Zone						#16	28.5	7.0	71.5
15 1					75 29		#20	01 E	7.0	70 E



rior Materials, LLC W. 10 Mile Rd. 500 ngton Hills, MI 48336

st be above the 3/8" sieve. nust equal 10% except max., ieves. st 4% for each sieve except max., ieves. st 8% for the 1" sieve when .5") aggregate is used.



Coar	seness Factor:	62	
Wor	kability Factor:	35	
Sieve	Cumulative	%	Cumulative
Sleve	% Passing	Retained	% Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	100.0	0.0	0.0
3/4"	95.0	5.0	5.0
1/2"	70.5	24.5	29.5
3/8"	60.0	10.5	40.0
#4	44.4	15.6	55.6
#8	35.5	9.0	64.5
#16	28.5	7.0	71.5
#30	21.5	7.0	78.5
#50	10.2	11.3	89.8
#100	3.1	7.1	96.9
LBW	1.3	1.8	98.7

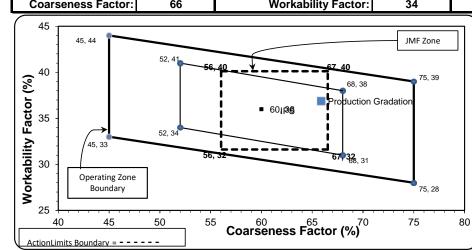
Approved By:

PLANT :	#:	P-102					Contractor:			
Sample Date	e:	4/18/22			Concrete Grade	DM, 4500HP				
Dates Test R	Represents:	4/19/2022	through	4/25/2022			MDOT No.:			
Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution				
6AA	58-003	Stoneco	1600	9.53	2.69	54.1				-
26A	58-003	Stoneco	205	1.22	2.69	6.9				
2NS	81-019	Pleasant Lake	1150	6.95	2.65	38.9				SU
		Total Wt	2955	17.71		100.0	< Verify this n	umber is 100%		SU M A 1
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superio</u> 30701 V
2"		100.0	10	0.0	100.0	100.0	0.0	0.0		Suite 50
1.5"		100.0	10	0.0	100.0	100.0	0.0	0.0		Farming
1"		100.0	10	0.0	100.0	100.0	0.0	0.0		
3/4"		86.0	10		100.0	92.4	7.6	7.6		
1/2"		46.8	99	0.5	100.0	71.2	21.3	28.8		
3/8"		21.6	88	3.7	100.0	56.8	14.4	43.2	*Maximum %	Retained must
#4		4.6	9	.2	99.4	41.8	15.0	58.2	*Any two adja	cent sieves mu
#8		1.6	3		85.5	34.4	7.4	65.6	nom. max., #10	00 and #200 sie
#16		1.7	2		67.7	27.4	6.9	72.6	*% Retained r	nust be at least
#30		1.3	2		48.8	19.8	7.6	80.2	nom. max., #10	00 and #200 sie
#50		1.1	2		23.8	10.0	9.8	90.0	*% Retained r	nust be at least
#100		0.9	2	-	6.5	3.2	6.8	96.8	a 2" max. size	(nom. Max. 1.5"
LBW		0.6	1		2.0	1.2	1.9	98.8	_	
Production G	Gradation	<ul> <li>Batch Plant Gra</li> </ul>	dations (•) Agg	regate Supplier Gr	adations	Adjusted WF	Intial Production	on Sample (IPS	5)	ı.
Coarsene	ess Factor:	66	Work	ability Factor	: 34	36.9	Coars	eness Factor:	61	
45							Work	ability Factor:	36	
I ]	45, 44				JMF Zone		Sieve	Cumulative % Passing	% Retained	Cumulative % Retained



Superior Materials, LLC 30701 W. 10 Mile Rd. Suite 500 Farmington Hills, MI 48336

Maximum % Retained must be above the 3/8" sieve. Any two adjacent sieves must equal 10% except max., m. max., #100 and #200 sieves. % Retained must be at least 4% for each sieve except max., m. max., #100 and #200 sieves. % Retained must be at least 8% for the 1" sieve when " max. size (nom. Max. 1.5") aggregate is used.



	Sil Sample (il S	/	
Coars	eness Factor:	61	
Work	ability Factor:	36	
Sieve	Cumulative	%	Cumulative
Sleve	% Passing	Retained	% Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	99.3	0.7	0.7
3/4"	89.2	10.1	10.8
1/2"	70.7	18.5	29.3
3/8"	60.7	10.0	39.3
#4	44.4	16.3	55.6
#8	35.9	8.5	64.1
#16	27.3	8.6	72.7
#30	19.1	8.2	80.9
#50	7.4	11.7	92.6
#100	1.9	5.6	98.1
LBW	0.7	1.2	99.3

Approved By: Mary P. Ball

PLANT #	#:	P-103					Contractor:			-	
Sample Date	):	4/18/22		С	Concrete Grade:	DM, 4500HP					
Dates Test R	epresents:	4/19/2022	through	4/25/2022			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution					
6AA	58-003	Stoneco	1600	9.53	2.69	54.1					
26A	58-003	Stoneco	205	1.22	2.69	6.9					
2NS	81-019	Pleasant Lake	1150	6.95	2.65	38.9				SUP	ERIOR
		Total Wt	2955	17.71		100.0	< Verify this no	umber is 100%			RIALS
Sieve		6AA	26	Α	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<b>Superior I</b> 30701 W. 2	<b>Materials, LLC</b> 10 Mile Rd.
2"		100.0	100	).0	100.0	100.0	0.0	0.0		Suite 500	
1.5"		100.0	100	).0	100.0	100.0	0.0	0.0		Farmingto	n Hills, MI 48336
1"		100.0	100		100.0	100.0	0.0	0.0			
3/4"		86.0	100		100.0	92.4	7.6	7.6			
1/2"		46.8	99		100.0	71.2	21.3	28.8			
3/8"		21.6	88		100.0	56.8	14.4	43.2			above the 3/8" sieve.
#4		4.6	9.2 3.5		99.4	41.8	15.0	58.2			qual 10% except max.,
#8		1.6			85.5	34.4 27.4	7.4	65.6 72.6	,	00 and #200 sieves	
#16 #30		1.7 1.3	2.	-	67.7 48.8	19.8	6.9 7.6	80.2			for each sieve except
#30 #50		1.3	2.		23.8	19.8	9.8	90.0		00 and #200 sieves	for the 1" sieve when
#100		0.9	2.		6.5	3.2	6.8	96.8		(nom. Max. 1.5") ag	
LBW		0.6	1.	-	2.0	1.2	1.9	98.8	a 2 111ax. 5126	(1011. Max. 1.5 ) ag	gyregate is used.
Production G	Gradation	O Batch Plant Gra	dations 💿 Agg	regate Supplier Gra		Adjusted WF	Intial Production	on Sample (IPS	<b>5</b> )		
Coarson	ess Factor:	66	Work	ability Factor:	34	36.9	Coars	eness Factor:	61	1	
Coal Selle		00									
		00	WOIP				Work	ability Factor:	36		
45 ]					•			ability Factor: Cumulative	36 %	Cumulative	
45 ]	45, 44				JMF Zone		Work: Sieve			Cumulative % Retained	
45		52, 41			•			Cumulative	%		
45			40	67.40	•		Sieve 2" 1.5"	Cumulative % Passing 100.0 100.0	% Retained 0.0 0.0	% Retained 0.0 0.0	
45				<b>68, 38</b>	JMF Zone		Sieve 2" 1.5" 1"	Cumulative % Passing 100.0 100.0 99.3	% Retained 0.0 0.0 0.7	% Retained 0.0 0.0 0.7	
45				68, 38	JMF Zone		Sieve 2" 1.5" 1" 3/4"	Cumulative % Passing 100.0 100.0 99.3 89.2	% Retained 0.0 0.0 0.7 10.1	% Retained 0.0 0.0 0.7 10.8	
45		52, 41 56,	40	68, 38	JMF Zone		Sieve 2" 1.5" 1" 3/4" 1/2"	Cumulative % Passing 100.0 100.0 99.3 89.2 70.7	% Retained 0.0 0.0 0.7 10.1 18.5	% Retained 0.0 0.0 0.7 10.8 29.3	
Factor (%)	45, 44		40	68, 38	JMF Zone		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8"	Cumulative % Passing 100.0 99.3 89.2 70.7 60.7	% Retained 0.0 0.7 10.1 18.5 10.0	% Retained 0.0 0.0 0.7 10.8 29.3 39.3	
Factor (%)		52, 41 56,	40 • 60 138	67, 40 68, 38 Production	JMF Zone		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4	Cumulative % Passing 100.0 99.3 89.2 70.7 60.7 44.4	% Retained 0.0 0.7 10.1 18.5 10.0 16.3	% Retained           0.0           0.0           0.7           10.8           29.3           39.3           55.6	
Factor (%)	45, 44	52, 41 <b>56</b> , 52, 34 <b>56</b> ,	40 • 60 138	68, 38	JMF Zone		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8	Cumulative % Passing 100.0 99.3 89.2 70.7 60.7 44.4 35.9	% Retained 0.0 0.0 0.7 10.1 18.5 10.0 16.3 8.5	% Retained           0.0           0.0           0.7           10.8           29.3           39.3           55.6           64.1	
Factor (%)	45, 44 45, 33 Operating Zone	52, 41 <b>56</b> , 52, 34 <b>56</b> ,	40 • 60 138	67, 40 68, 38 Production	JMF Zone 75, 39 n Gradation		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	Cumulative % Passing 100.0 99.3 89.2 70.7 60.7 44.4 35.9 27.3	% Retained 0.0 0.7 10.1 18.5 10.0 16.3 8.5 8.6	% Retained           0.0           0.0           0.7           10.8           29.3           39.3           55.6           64.1           72.7	
<b>Factor (%)</b>	45, 44	52, 41 <b>56</b> , 52, 34 <b>56</b> ,	40 • 60 138	67, 40 68, 38 Production	JMF Zone		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	Cumulative % Passing 100.0 99.3 89.2 70.7 60.7 44.4 35.9 27.3 19.1	% Retained 0.0 0.0 0.7 10.1 18.5 10.0 16.3 8.5 8.6 8.2	% Retained           0.0           0.0           0.7           10.8           29.3           39.3           55.6           64.1           72.7           80.9	
ability Factor (%)	45, 44 45, 33 Operating Zone	52, 41 <b>56</b> , 52, 34 <b>56</b> ,	40 • 60  <b> </b> 38	67, 40 68, 38 Production	JMF Zone 75, 39 75, 28		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	Cumulative % Passing 100.0 99.3 89.2 70.7 60.7 44.4 35.9 27.3	% Retained 0.0 0.7 10.1 18.5 10.0 16.3 8.5 8.6	% Retained           0.0           0.0           0.7           10.8           29.3           39.3           55.6           64.1           72.7	

Approved BY: Mary 1. Ball

PLANT :		P-12					Contractor:			-	
Sample Date Dates Test R		4/18/22	through	4/25/2022	Concrete Grade	DM, 4500HP	MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	4/25/2022	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1400	8.56	2.62	48.2					
26A	71-47	Presque Isle	355	2.17	2.62	12.2					
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6				CUD	ED
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%	-	MATE	
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior I</u> 30701 W. 1	
2"	1	100.0	100	0.0	100.0	100.0	0.0	0.0	1	Suite 500	
1.5"		100.0	100		100.0	100.0	0.0	0.0	1	Farmingtor	n Hills,
1"		99.4	100		100.0	99.7	0.3	0.3	1	0.11	-,
3/4"		83.1	100	0.0	100.0	91.9	7.9	8.1	1		
1/2"	:	37.8	93	.2	100.0	69.2	22.7	30.8	1		
3/8"		19.9	80	.6	100.0	59.0	10.2	41.0	*Maximum %	Retained must be	above
#4		4.7	24	.8	96.3	43.4	15.6	56.6	*Any two adja	icent sieves must e	equal 10
#8		2.6	8.	2	78.4	33.3	10.1	66.7	nom. max., #1	00 and #200 sieves	s.
#16		2.2	4.	0	61.8	26.0	7.3	74.0	*% Retained	must be at least 4%	% for ea
#30		2.1	3.	-	45.6	19.4	6.6	80.6	nom. max., #1	00 and #200 sieves	s.
#50		2.0	2.		24.6	11.0	8.4	89.0	*% Retained	must be at least 8%	% for the
#100		1.8	2.		4.2	2.8	8.2	97.2	a 2" max. size	(nom. Max. 1.5") a	ggrega
LBW		1.4	1.	8	0.7	1.2	1.7	98.8	1		
Production G	Gradation	O Batch Plant Gra	dations 💿 Agg	regate Supplier G	radations	Adjusted WF	Intial Producti	on Sample (IPS	3)	_	
Coarsene	ess Factor:	61	Work	ability Factor	r: 33	35.8	Coars	eness Factor:	63		
45							Work	ability Factor:	36		
	45, 44	52, 41			JMF Zone		Sieve	Cumulative % Passing	% Retained	Cumulative % Retained	
_ 40		52, 4	57, 40	68, 40			2"	100.0	0.0	0.0	1
<b>€</b>				68, 3	8 75, 39		1.5"	100.0	0.0	0.0	1
Ľ.			!				1"	99.3	0.7	0.7	
<u></u> 2 1			■ <u>60</u> , p3@	BSction Gradatio	n		3/4"	89.0	10.3	11.0	
<b>2</b> <sup>35</sup>			ļ	i			1/2"	70.3	18.7	29.7	
	45, 33	52, 34		!			3/8"	59.9	10.4	40.1	
	-0, 00		57, 22	68, 3	2		#4	41.9	18.0	58.1	
Workability Factor (%)		_		-68, 3	51		#8	35.9	6.0	64.1	1
¥	Operating Zone						#16	27.8	8.2	72.2	
N N	Boundary				75, 28		#30	18.9	8.8	81.1	
<b>^</b> _5   L							#50	6.3	12.6	93.7	

75

80

 $\mathbf{Coarseness} \ \mathbf{F_{actor}^{65}} (\mathbf{\%})^{70}$ 

#100

LBW

1.7

1.0



rials, LLC le Rd. MI 48336

the 3/8" sieve. 0% except max., ach sieve except max., e 1" sieve when ate is used.

98.3

99.0

4.6

0.7

PREPARED BY: SM, LLC Technical Service

45

ActionLimits Boundary = - - - - -

50

55

25

40



PLANT #	#:	P-32					Contractor:				
Sample Date	:	4/18/22	_	C	Concrete Grade	DM, 4500HP				-	
Dates Test R	epresents:	4/19/2022	through	4/25/2022			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1455	8.90	2.62	50.1					
26A	71-47	Presque Isle	300	1.83	2.62	10.3					
2NS	95-013	Smelter Bay	1150	6.95	2.65	39.6				SUP	ERIOR
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%			RIALS
Sieve		6 <b>AA</b>	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"		00.0	100	-	100.0	100.0	0.0	0.0		Farmingto	n Hills, MI 48336
1"		00.0	100	0.0	100.0	100.0	0.0	0.0			
3/4"		82.3	100		100.0	91.1	8.9	8.9			
1/2"		34.6	93		100.0	66.5	24.6	33.5			
3/8"		17.2	80	-	100.0	56.5	10.0	43.5	*Maximum %	Retained must be	above the 3/8" sieve.
#4		3.5	24		95.7	42.2	14.3	57.8	*Any two adja	icent sieves must e	qual 10% except max.,
#8		2.3	8.		82.1	34.5	7.7	65.5		00 and #200 sieves	
#16		2.0	4.		67.9	28.3	6.2	71.7			for each sieve except
#30		1.8	3.		50.0	21.0	7.3	79.0	,	00 and #200 sieves	
#50 #100		1.7 1.5	2. 2.		25.0 7.9	11.0 4.1	10.0 6.9	89.0 95.9			for the 1" sieve when
LBW		0.7	<u> </u>		1.9	4.1	2.8	95.9 98.7	a 2° max. size	(nom. Max. 1.5") ag	ggregate is used.
Production G		Batch Plant Gra		egate Supplier Gra	-	-		on Sample (IPS	5)		
Coarsene	ess Factor:	66	Work	ability Factor:	34	37.0		eness Factor:	62		
				<b>,</b>				ability Factor:	36		
45								Cumulative	%	Cumulative	
_ 4	45, 44				JMF Zone		Sieve	% Passing	Retained	% Retained	
-		52, 41	6.40	67,40			2"	100.0	0.0	0.0	
<b>G</b> <sup>40</sup>					75, 39		1.5"	100.0	0.0	0.0	
ð i				68, 38	Ĭ		1"	100.0	0.0	0.0	
D I			<b>6</b> 0, <b>3B</b>		on Gradation		3/4"	95.0	5.0	5.0	
Factor (%)							1/2"	72.3	22.8	27.7	
		52, 34	+	<b>i</b>			3/8"	60.4	11.8	39.6	
lit)	45, 33		!				#4	42.6	17.8	57.4	
	ļ		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	67 <sub>68,31</sub>			#8	36.0	6.6	64.0	
ž	Operating Zone						#16 #30	29.5 20.3	6.5 9.2	70.5 79.7	
Workability	Boundary				75, 28		#30 #50	9.5	9.2	90.5	
> <sub>25</sub>							#50	9.5 3.4	6.1	90.5	
40	45	<u> </u>	5 60	<b>Factor (%)</b> <sup>70</sup>	75	80	LBW	1.3	2.1	98.7	
			Coarseness	Factor (%)						00.1	

Approved By:

PLANT :	#:	P-35					Contractor:			-	
Sample Date	e:	4/18/22		(	Concrete Grade	DM, 4500HP					
Dates Test R	Represents:	4/19/2022	through	4/25/2022			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution					
6AA	58-003	Stoneco	1650	9.83	2.69	55.8					
26A	58-003	Stoneco	205	1.22	2.69	6.9					
2NS	81-019	Pleasant Lake	1100	6.65	2.65	37.2				SUD	ERIOR
		Total Wt	2955	17.70		100.0	< Verify this n	umber is 100%	-	MATI	ERIALS
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained			Materials, LLC 10 Mile Rd.
2"		00.0	100		100.0	100.0	0.0	0.0	]	Suite 500	
1.5"		00.0	100	0.0	100.0	100.0	0.0	0.0	]	Farmingto	on Hills, MI 48336
1"		00.0	100	-	100.0	100.0	0.0	0.0	]		
3/4"		86.0	100		100.0	92.2	7.8	7.8			
1/2"		46.8	99		100.0	70.3	21.9	29.7			
3/8"		21.6	88		100.0	55.4	14.8	44.6	*Maximum %	Retained must be	above the 3/8" sieve.
#4		4.6	9.		99.4	40.2	15.2	59.8	*Any two adja	icent sieves must e	equal 10% except max.
#8		1.6	3.		85.5	33.0	7.2	67.0	· ·	00 and #200 sieves	
#16		1.7	2.		67.7	26.3	6.6	73.7			6 for each sieve except
#30		1.3	2.		48.8	19.0	7.3	81.0		00 and #200 sieves	
#50 #100		1.1 0.9	2.		23.8 6.5	9.6 3.1	9.4 6.6	90.4 96.9			6 for the 1" sieve when
LBW		0.9	2.	-	2.0	3.1 1.2	0.0 1.9	96.9 98.8	a 2" max. size	(nom. Max. 1.5") a	ggregate is used.
Production G	Fradation	Batch Plant Gra		egate Supplier Gra				on Sample (IPS	3)		
	ess Factor:	66		ability Factor:	•	35.5		eness Factor:	61		
				, ,			Work	ability Factor:	36		
45	45, 44				JMF Zone		Sieve	Cumulative % Passing	% Retained	Cumulative % Retained	
1		52, 41					2"	100.0	0.0	0.0	
<b>a</b> <sup>40</sup>		56,	#0	67,40	75, 39		1.5"	100.0	0.0	0.0	
8			!	68, 38	1.0,00		1"	99.3	0.7	0.7	
<b>&gt;</b>				!			3/4"	89.1	10.2	10.9	
			■ 60, <sub>1</sub> 36	Production -	on Gradation		1/2"	70.5	18.6	29.5	
<b>5</b> 35		52, 34		i I			3/8"	60.5	10.0	39.5	
Eacto							#4	44.1	16.4	55.9	
ity Facto	45, 33		<b>!</b>				110	25.0	8.5		1
bility Facto	45, 33	56,	31	<b>67, 68</b> , 31			#8	35.6		64.4	
kability Facto	45, 33 Operating Zone		31	<b>67, 88</b> , 31			#16	27.7	7.9	72.3	
orkability Facto			31	<b>67</b> , &9, 31	75, 28		#16 #30	27.7 20.6	7.9 7.1	72.3 79.4	
Workability Fa	Operating Zone		31	<b>67, 39</b> , 31			#16 #30 #50	27.7 20.6 8.7	7.9 7.1 11.8	72.3 79.4 91.3	
Morkability Facto	Operating Zone			67, 84, 31	75, 28		#16 #30	27.7 20.6	7.9 7.1	72.3 79.4	

Approved By:

PREPARED BY: SM, LLC Technical Service

ActionLimits Boundary = - - - -

PLANT #	#:	P-36					Contractor:				
Sample Date		4/18/22			Concrete Grade:	DM, 4500HP					
Dates Test R	epresents:	4/19/2022	through	4/25/2022			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1400	8.56	2.62	48.2					
26A	71-47	Presque Isle	405	2.48	2.62	13.9					
2NS	63-92	Grange Hall	1100	6.65	2.65	37.9				SUP	ERIOR
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%			FRIALS
Sieve		6 <b>A</b> A	26	Α	2NS	Cumulative % Passing	% Retained	Cumulative % Retained			<u>Materials, LLC</u> 10 Mile Rd.
2"	1	00.0	100	).0	100.0	100.0	0.0	0.0		Suite 500	
1.5"		00.0	100		100.0	100.0	0.0	0.0		Farmingto	n Hills, MI 48336
1"		99.4	100	).0	100.0	99.7	0.3	0.3			
3/4"		83.1	100	).0	100.0	91.9	7.9	8.1			
1/2"	:	37.8	93	.2	100.0	69.1	22.8	30.9			
3/8"		19.9	80	-	100.0	58.7	10.4	41.3	*Maximum %	Retained must be	above the 3/8" sieve.
#4		4.7	24		97.8	42.8	15.9	57.2	*Any two adja	cent sieves must e	equal 10% except max.,
#8		2.6	8.2 4.0		84.5	34.4	8.4	65.6		00 and #200 sieves	
#16		2.2		-	68.2	27.4	7.0	72.6			6 for each sieve except r
#30		2.1	3.		49.0	20.0	7.5	80.0		00 and #200 sieves	
#50		2.0	2.		21.2	9.4	10.6	90.6			6 for the 1" sieve when
#100 LBW		1.8 1.4	2.		3.4 0.6	2.5 1.2	6.9 1.3	97.5 98.8	a 2" max. size	(nom. Max. 1.5") a	ggregate is used.
Production G	radation	Batch Plant Gra		regate Supplier Gra				on Sample (IPS	5)		
	ess Factor:	63	Work	ability Factor	: 34	36.9		eness Factor:	63		
				,				ability Factor:	35		
45					IN 45 7			Cumulative	%	Cumulative	
- 4	45, 44				JMF Zone		Sieve	% Passing	Retained	% Retained	
1		52, 41					2"	100.0	0.0	0.0	
			58, 39	68, 99	75, 39		1.5"	100.0	0.0	0.0	
Factor (%)			i	68, 38	' T		1"	99.1	0.9	0.9	
jo i			<b>6</b> 0, 36	Production Frada	ation		3/4"	90.3	8.8	9.7	
<b>5</b> 35				IPS			1/2"	69.2	21.1	30.8	
Щ́ į		52, 34		i			3/8"	59.1	10.1	40.9	
lit)	45, 33						#4	41.8	17.3	58.2	
Workability		_	58, 31	68,3	\$1		#8 #16	35.1	6.6	64.9	
ž	Operating Zone						#16 #30	28.5 21.2	6.6 7.3	71.5 78.8	
\$  L	Boundary				75, 28		#50	8.7	12.5	91.3	
> <sub>25</sub>							#100	1.8	7.0	98.2	
	45	50 55	<sup>60</sup> Coarseness	65 70	) 75	80	LBW	0.7	1.0	99.3	
40											

Approved By:

PLANT #		P-39	-				Contractor:			-	
Sample Date	:	4/18/22	-	(	Concrete Grade:	DM, 4500HP					
Dates Test R	epresents:	4/19/2022	through	4/25/2022			MDOT No.:			-	
Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1505	9.21	2.62	51.8					
26A	71-47	Presque Isle	300	1.83	2.62	10.3					
2NS	44-051	Krake Willis Rd		6.65	2.65	37.9				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>Superior I</b> 30701 W. 2	<u>Materials, LLC</u> 10 Mile Rd.
2"		100.0	10	0.0	100.0	100.0	0.0	0.0		Suite 500	
1.5"		100.0	10		100.0	100.0	0.0	0.0		Farmingto	n Hills, MI 48336
1"		98.5	10		100.0	99.2	0.8	0.8			
3/4"		84.5	10		100.0	92.0	7.3	8.0			
1/2"		36.1	95		100.0	66.5	25.5	33.5			
3/8"		18.4	85		100.0	56.2	10.3	43.8			above the 3/8" sieve.
#4		3.0	13		96.0	39.3	16.9	60.7			qual 10% except max.,
#8		1.9	2.		78.4	30.9	8.3	69.1	nom. max., #100 and #200 sieves. *% Retained must be at least 4% for each		
#16 #30		1.7 1.6	1.		62.8	24.8 18.7	6.1 6.1	75.2			•
#30 #50		1.6	1.		46.8 26.2	10.9	7.8	81.3 89.1	-	00 and #200 sieves	
#100		1.5	1.		8.4	4.1	6.8	95.9		(nom. Max. 1.5") ag	for the 1" sieve when
LBW		1.4	1.	-	1.0	1.2	2.9	98.8	a 2 111ax. 3126	(1011. Max. 1.5 ) ag	gyregate is used.
Production G	radation	O Batch Plant Gra	idations 💿 Agg	regate Supplier Gra	adations	_		on Sample (IPS	5)		
Coarsene	ess Factor:	63	Worl	ability Factor:	31	33.4		eness Factor:	63	1	
					-						
							Work	ability Factor:	36		
45								ability Factor: Cumulative	36 %	Cumulative	
	15, 44				JMF Zone		Work Sieve		%	Cumulative % Retained	
- 4	15, 44	52, 41			JMF Zone		Sieve 2"	Cumulative % Passing 100.0	% <b>Retained</b> 0.0	% Retained 0.0	
40	15, 44	52, 41	58, 40	<b></b>	JMF Zone 75, 39		Sieve	Cumulative % Passing	% Retained	% Retained	
40	15, 44	52, 41	58, 40	68, 38			Sieve 2" 1.5" 1"	Cumulative % Passing 100.0 100.0 100.0	% Retained 0.0 0.0 0.0	% Retained 0.0 0.0 0.0	
40	15, 44	52, 41	58, 40				Sieve 2" 1.5" 1" 3/4"	Cumulative % Passing 100.0 100.0 100.0 89.7	% Retained 0.0 0.0 0.0 10.3	% Retained 0.0 0.0 0.0 10.3	
40	15, 44	52, 41	58, 40 60, 36				Sieve 2" 1.5" 1" 3/4" 1/2"	Cumulative % Passing 100.0 100.0 100.0 89.7 70.3	% Retained 0.0 0.0 0.0 10.3 19.4	% Retained           0.0           0.0           0.0           10.3           29.7	
Factor (%)	$\rightarrow$	52, 41			75, 39		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8"	Cumulative % Passing 100.0 100.0 100.0 89.7 70.3 59.1	% Retained 0.0 0.0 10.3 19.4 11.2	% Retained           0.0           0.0           0.0           10.3           29.7           40.9	
Factor (%)	45, 33			IPS Production Grada	75, 39		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4	Cumulative % Passing 100.0 100.0 100.0 89.7 70.3 59.1 42.8	% Retained 0.0 0.0 10.3 19.4 11.2 16.3	% Retained           0.0           0.0           0.0           0.0           29.7           40.9           57.2	
Factor (%)	45, 33	52, 34		IPS	75, 39		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8	Cumulative % Passing 100.0 100.0 100.0 89.7 70.3 59.1 42.8 35.5	% Retained 0.0 0.0 10.3 19.4 11.2 16.3 7.3	% Retained           0.0           0.0           0.0           0.0           10.3           29.7           40.9           57.2           64.5	
Factor (%)	45, 33 Operating Zono	52, 34		IPS Production Grada	ation 2		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	Cumulative % Passing 100.0 100.0 100.0 89.7 70.3 59.1 42.8 35.5 29.0	% Retained 0.0 0.0 10.3 19.4 11.2 16.3 7.3 6.5	% Retained           0.0           0.0           0.0           10.3           29.7           40.9           57.2           64.5           71.0	
Factor (%)	45, 33	52, 34		IPS Production Grada	75, 39		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	Cumulative % Passing 100.0 100.0 89.7 70.3 59.1 42.8 35.5 29.0 21.2	% Retained 0.0 0.0 10.3 19.4 11.2 16.3 7.3 6.5 7.7	% Retained           0.0           0.0           0.0           10.3           29.7           40.9           57.2           64.5           71.0           78.8	
ability Factor (%)	45, 33 Operating Zono	52, 34		IPS Production Grada	ation 2		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	Cumulative % Passing 100.0 100.0 100.0 89.7 70.3 59.1 42.8 35.5 29.0	% Retained 0.0 0.0 10.3 19.4 11.2 16.3 7.3 6.5	% Retained           0.0           0.0           0.0           10.3           29.7           40.9           57.2           64.5           71.0	

Approved By: Mart P. Ball

PLANT #	<b>#:</b>	<b>P-02</b>					Contractor:				
Sample Date	:	4/18/22	•	(	Concrete Grade	: DM, 4500HP					
Dates Test R	epresents:	4/19/2022	through	4/25/2022			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1455	8.90	2.62	50.1					
26A	71-47	Presque Isle	350	2.14	2.62	12.0					
2NS	63-115	Ray Rd	1100	6.65	2.65	37.9				SUP	ERIOR
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%	•		RIALS
Sieve	(	6AA	26	4	2NS	Cumulative % Passing	% Retained	Cumulative % Retained			<b>Materials, LLC</b> 10 Mile Rd.
2"	1	00.0	100	.0	100.0	100.0	0.0	0.0		Suite 500	
1.5"		00.0	100		100.0	100.0	0.0	0.0	]	Farmingto	n Hills, MI 48336
1"		99.4	100		100.0	99.7	0.3	0.3	l		
3/4"		83.1	100		100.0	91.5	8.2	8.5			
1/2"		37.8	93.		100.0	68.0	23.5	32.0			
3/8"		19.9	80.		100.0	57.5	10.5	42.5			above the 3/8" sieve.
#4		4.7	24.		96.3	41.8	15.7	58.2			qual 10% except max.
#8		2.6	8.		78.4	32.0	9.8	68.0	· · ·	00 and #200 sieves	
#16		2.2	4.0		61.8	25.0	7.0	75.0			6 for each sieve except
#30		2.1	3.		45.6	18.7	6.3	81.3	· · · ·	00 and #200 sieves	
#50		2.0	2.0		24.6	10.6	8.1	89.4			6 for the 1" sieve when
#100 LBW		1.8 1.4	2.4		4.2 0.7	2.8	7.8 1.6	97.2 98.8	a 2° max. size	(nom. Max. 1.5") ag	ggregate is used.
roduction G		Batch Plant Gra		egate SupplierGrad				on Sample (IPS	3)		
	ss Factor:	62		ability Factor:	î	34.5		eness Factor:	,		
					02			ability Factor:	35		
45								Cumulative	%	Cumulative	
- 4	15, 44				JMF Zone		Sieve	% Passing	Retained	% Retained	
1		52, 41					2"	100.0	0.0	0.0	
a <sup>40</sup>			58, 39	<b>68, 39</b> 68, 38	75, 39		1.5"	100.0	0.0	0.0	
<u>ک</u>			1	68, 38	T i		1"	100.0	0.0	0.0	
D I			<b>6</b> 0, 36	!			3/4"	95.1	4.9	4.9	
Factor (%)			= 00, 30	PS roduction Gradatio	n		1/2"	74.6	20.5	25.4	
		52, 34					3/8"	59.3	15.3	40.7	
it i	45, 33						#4	42.1	17.2	57.9	
<b>iq</b> 30		_	58, 31	6 <b>6</b> 83,331			#8	35.1	7.1	64.9	
ka	Operating Zone	·					#16	29.2	5.9	70.8	
Workability	Boundary				75, 28		#30	21.9	7.3	78.1	
<b>S</b>							#50	9.6	12.4	90.4	

80

75

 $\operatorname{Coarseness}^{60}\operatorname{Factor}^{65}(\%)^{70}$ 

#100

LBW

2.4

0.9

7.2

1.5

97.6

99.1

PREPARED BY: SM, LLC Technical Service

50

55

45

ActionLimits Boundary = - - - -

25

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Approved By: Mart P. Ball