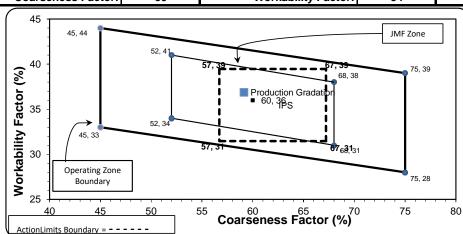
Production	Gradation	Report
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PLANT #	#:	P-101					Contractor:			
Sample Date	:	7/24/23			Concrete Grade	DM, 4500HP				
Dates Test R	epresents:	7/25/2023	through	7/31/2023			MDOT No.:			
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution				
6AA	71-47	Presque Isle	1650	10.09	2.62	56.9				
26A	71-47	Presque Isle	100	0.61	2.62	3.4				
2NS	75-051	Mid Michigan	1150	6.93	2.66	39.7				EUE
		Total Wt	2900	17.63		100.0	< Verify this n	umber is 100%	-	SUP M A T
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior</u> 30701 W.
2"	1	00.0	100	0.0	100.0	100.0	0.0	0.0	1	Suite 500
1.5"	1	00.0	100	0.0	100.0	100.0	0.0	0.0	1	Farmingto
1"		96.4	100	0.0	100.0	98.0	2.0	2.0		
3/4"		86.2	100		100.0	92.1	5.8	7.9		
1/2"		51.5	93	5.1	100.0	72.2	20.0	27.8		
3/8"		32.9	81	.7	100.0	61.2	11.0	38.8	*Maximum %	Retained must be
#4		5.2	16		96.9	42.0	19.2	58.0	*Any two adja	icent sieves must
#8		2.5	3.		82.8	34.4	7.6	65.6		00 and #200 sieve
#16		2.2	1.		68.6	28.5	5.9	71.5	*% Retained	must be at least 49
#30		2.1	1.		52.3	22.0	6.5	78.0	nom. max., #10	00 and #200 sieve
#50		2.0	1.		25.3	11.2	10.8	88.8	*% Retained	must be at least 89
#100		1.9	1.		6.3	3.6	7.6	96.4	a 2" max. size	(nom. Max. 1.5") a
LBW		1.7	1.	-	1.1	1.4	2.2	98.6		
Production G	iradation	O Batch Plant Gra	dations 💿 Agg	regate Supplier Gi	radations	Adjusted WF	Initial Producti	on Sample (IPS	S)	
Coarsene	ess Factor:	59	Work	ability Factor	: 34	36.9	Coars	eness Factor:	62	
45							Work	ability Factor:	35	
10	45, 44				JMF Zone		Sieve	Cumulative	%	Cumulative
1	-,	50.44			5111 20110		Sieve	% Passing	Retained	% Retained
10		52, 41					2"	100.0	0.0	0.0
ू ⁴⁰ र			57, 39	67, 39 68,	38 75, 39		1.5"	100.0	0.0	0.0
				•			1"	100.0	0.0	0.0
			■ Pi0duc ■ 60, 3	tion Gradation PS			3/4"	95.0	5.0	5.0
Factor (%)			!				1/2"	70.5	24.5	29.5
		52, 34		i			3/8"	60.0	10.5	40.0
<u>₹</u>	45, 33						#4	44.4	15.6	55.6



or Materials, LLC N. 10 Mile Rd. 00 gton Hills, MI 48336

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



Co	arseness Factor:	62	
W	orkability Factor:	35	
Sieve	Cumulative	%	Cumulative
Sieve	% 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

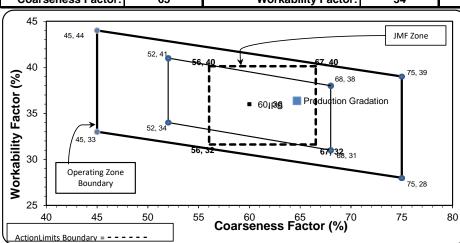
Approved By: Mart 1. Ball

PLANT #	#:	P-102	_				Contractor:				
Sample Date	e:	7/24/23	-		Concrete Grade	: DM, 4500HP	-				
Dates Test R	epresents:	7/25/2023	through	7/31/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	58-003	Stoneco	1575	9.38	2.69	53.4]				
26A	58-003	Stoneco	225	1.34	2.69	7.6					
2NS	81-019	Pleasant Lake	1150	6.95	2.65	39.0				SUP	EE
		Total Wt	2950	17.68		100.0	< Verify this n	umber is 100%	-	MATE	R
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior I</u> 30701 W. 1	
2"		100.0	100	0.0	100.0	100.0	0.0	0.0		Suite 500	
1.5"		100.0	100	0.0	100.0	100.0	0.0	0.0		Farmingtor	۱ Hills
1"		99.6	100	0.0	100.0	99.8	0.2	0.2			
3/4"		83.5	100	0.0	100.0	91.2	8.6	8.8			
1/2"		43.5	99	.8	100.0	69.8	21.4	30.2			
3/8"		21.3	90	.1	100.0	57.2	12.6	42.8	*Maximum %	Retained must be a	above
#4		3.4	10	.7	98.2	40.9	16.3	59.1	*Any two adja	cent sieves must e	qual 1
#8		1.7	3.	3	83.9	33.9	7.0	66.1	nom. max., #10	00 and #200 sieves	
#16		1.4	2.	6	67.4	27.2	6.6	72.8	*% Retained	must be at least 4%	for ea
#30		1.2	2.	4	49.1	20.0	7.3	80.0	nom. max., #10	00 and #200 sieves	
#50		1.1	2.	2	25.3	10.6	9.3	89.4	*% Retained	must be at least 8%	for th
#100		1.1	2.	2	7.3	3.6	7.0	96.4	a 2" max. size	(nom. Max. 1.5") ag	grega
LBW		0.9	2.	0	1.5	1.2	2.4	98.8			
Production G	radation	O Batch Plant Gra	idations 💿 Agg	regate Supplier Gr	adations	Adjusted WF	Intial Production	on Sample (IPS	5)		
Coarsene	ess Factor:	65	Work	ability Factor	: 34	36.4	Coars	eness Factor:	61		
45					•		Work	ability Factor:	36		
	15, 44				JMF Zone		Sieve	Cumulative	%	Cumulative	
-		52, 41						% Passing	Retained	% Retained	
40		5 <u>6</u>	40	67 40	_		2"	100.0	0.0	0.0	
?				68, 38	75, 39		1.5"	100.0	0.0	0.0	
č			1				1"	99.3	0.7	0.7	
actor (%)			■ 60 1136	Production C	Bradation		3/4"	89.2	10.1	10.8	
²⁶ 35			i				1/2"	70.7	18.5	29.3	
ŭ j		52, 34	+				3/8"	60.7	10.0	39.3	



terials, LLC /ile Rd. lls, MI 48336

ve the 3/8" sieve. 10% except max., each sieve except max., the 1" sieve when gate is used.



Coars	seness Factor:	61	
Worl	ability Factor:	36	
Sieve	Cumulative	%	Cumulative
Sieve	% 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: Mart P. Ball

PLANT :	#:	P-103					Contractor:				
Sample Date		7/24/23			Concrete Grade:	DM, 4500HP					
Dates Test R	Represents:	7/25/2023	through	7/31/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	58-003	Stoneco	1575	9.38	2.69	53.4					
26A	58-003	Stoneco	225	1.34	2.69	7.6					
2NS	81-019	Pleasant Lake	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	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior I</u> 30701 W. 2	Materials, LLC 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"		99.6	10		100.0	99.8	0.2	0.2			
3/4"		83.5	-	0.0	100.0	91.2	8.6	8.8			
1/2"		43.5	99	-	100.0	69.8	21.4	30.2			
3/8"		21.3	90		100.0	57.2	12.6	42.8			above the 3/8" sieve.
#4		3.4	10		98.2	40.9	16.3	59.1			qual 10% except max.,
#8		1.7	3		83.9	33.9	7.0	66.1	· · · · ·	00 and #200 sieves	
#16		1.4	2		67.4	27.2	6.6	72.8			for each sieve except
#30 #50		1.2 1.1	2		49.1 25.3	20.0 10.6	7.3 9.3	80.0 89.4		00 and #200 sieves	
#30		1.1	2		7.3	3.6	9.3 7.0	96.4		(nom. Max. 1.5") ac	for the 1" sieve when
LBW		0.9	2		1.5	1.2	2.4	98.8		(nom. wax. 1.5) ag	gregate is used.
Production G	Gradation	Batch Plant Grad		regate Supplier Gra		Adjusted WF	l.	on Sample (IPS	6)		
Coarsen	ess Factor:	65	Work	ability Factor:	34	36.4	Coars	eness Factor:	61		
					•••			ability Factor:	36		
⁴⁵]								Cumulative	%	Cumulative	
	45, 44				JMF Zone		Sieve	% Passing	Retained	% Retained	
1		52, 41	40	67.40			2"	100.0	0.0	0.0	
a ⁴⁰		-56,	******		75, 39		1.5"	100.0	0.0	0.0	
Factor (%)				68, 38			1"	99.3	0.7	0.7	
ō			■ 601 3 .6	Production G	radation		3/4"	89.2	10.1	10.8	
5 35							1/2"	70.7	18.5	29.3	
m I		52, 34					3/8"	60.7	10.0	39.3	
E E	45, 33		L	i			#4	44.4	16.3	55.6	
ity Fa	1,	56,	32	67, 32 , 31			#8	35.9	8.5	64.1	
¹⁰⁰ ¹⁰⁰ ¹⁰⁰		_					#16	27.3	8.6	72.7	
kability Fa	Operating Zone	,						46.1		<u> </u>	
Vorkability Fa	[Ś			75, 28		#30	19.1	8.2	80.9	
Workability	Operating Zone	2			75, 28		#50	7.4	11.7	92.6	
Aorkability Fa	Operating Zone	50 55		65 70 Factor (%)		80					

Approved BY: Mary P. Ball

PLANT	#:	14					Contractor:			_	
Sample Date	э: 	7/24/23		C	Concrete Grade	DM, 4500HP	_			-	
Dates Test F	- Represents:	7/25/2023	through	7/31/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution				5	
6AA	58-003	Stoneco	1600	9.53	2.69	54.1					
26A	58-003	Stoneco	260	1.55	2.69	8.8				L	
2NS	19-04	Schlegel	1100	6.60	2.67	37.2				Bui	Iders'
		Total Wt	2960	17.68		100.0	< Verify this n	umber is 100%	•		irst With Builders
Sieve	6	AA	26	4	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		Builders 30701 W.	Redi-Mix 10 Mile Rd.
2"	10	0.00	100	.0	100.0	100.0	0.0	0.0	1	Suite 500	
1.5"	1(0.00	100	.0	100.0	100.0	0.0	0.0]	Farmingto	n Hills, MI 48336
1"		9.6	100		100.0	99.8	0.2	0.2]		
3/4"		3.5	100		100.0	91.1	8.7	8.9			
1/2"		3.5	99.		100.0	69.4	21.6	30.6			
3/8"		1.3	90.		100.0	56.6	12.9	43.4	*Maximum %	Retained must be	above the 3/8" sieve.
#4		3.4	10.	-	99.9	39.9	16.7	60.1	*Any two adja	icent sieves must e	equal 10% except max.,
#8		1.7	3.3		90.1	34.7	5.2	65.3		00 and #200 sieves	
#16		1.4	2.0		69.4	26.8	7.9	73.2			6 for each sieve except
#30		1.2	2.4		44.5	17.4	9.4	82.6		00 and #200 sieves	
#50		1.1	2.:		14.3 2.7	6.1	11.3	93.9			6 for the 1" sieve when
#100 LBW		1.1 0.9	2.		0.2	1.8 0.7	4.3 1.1	98.2 99.3	a 2" max. size	(nom. Max. 1.5") a	ggregate is used.
Production G		Batch Plant Gra		egate Supplier Gra				on Sample (IPS	3)		
	ess Factor:	66		ability Factor:		37.2		eness Factor:	ŕ		
	ł						Work	ability Factor:	36		
45	45, 44				JMF Zone		Sieve	Cumulative % Passing	% Retained	Cumulative % Retained	
1		52, 41	57.40	68, 40			2"	100.0	0.0	0.0	
a ⁴⁰			51,40		75, 39		1.5"	100.0	0.0	0.0	
				68, 38			1"	99.3	0.7	0.7	
2			Ĭ	Poductic	on Gradation		3/4"	89.0	10.3	11.0	
or (%			■ 60 261						18.7	00 T	
actor (%			■ 60, 36I	PS			1/2"	70.3		29.7	
Factor (%		52, 34	■ 60, 36	≥S			1/2" 3/8"	70.3 59.9	10.4	29.7 40.1	
lity Factor (%	45, 33	52, 34	• 60, 36				3/8" #4	59.9 41.9	10.4 18.0	40.1 58.1	
bility Factor (%	45, 33	52, 34	• 60, 36	68, 32			3/8" #4 #8	59.9 41.9 35.9	10.4 18.0 6.0	40.1 58.1 64.1	
kability Factor (%	45, 33 Operating Zone	52, 34	• 60, 38				3/8" #4 #8 #16	59.9 41.9 35.9 27.8	10.4 18.0 6.0 8.2	40.1 58.1 64.1 72.2	
Vorkability Factor (%		52, 34	• 60, 36		75, 28		3/8" #4 #8 #16 #30	59.9 41.9 35.9 27.8 18.9	10.4 18.0 6.0 8.2 8.8	40.1 58.1 64.1 72.2 81.1	
Workability Fa	Operating Zone	52, 34	• 60, 36				3/8" #4 #8 #16 #30 #50	59.9 41.9 35.9 27.8 18.9 6.3	10.4 18.0 6.0 8.2 8.8 12.6	40.1 58.1 64.1 72.2 81.1 93.7	
Workability Factor (%	Operating Zone	52, 34	57,22	68.32	75, 28		3/8" #4 #8 #16 #30	59.9 41.9 35.9 27.8 18.9	10.4 18.0 6.0 8.2 8.8	40.1 58.1 64.1 72.2 81.1	

PREPARED BY: SM, LLC Technical Service

ActionLimits Boundary = - - - - -

Approved By: Mart P. Ball

PLANT #	#:	12					Contractor:				
Sample Date	:	7/24/23		C	Concrete Grade	DM, 4500HP					
Dates Test R	epresents:	7/25/2023	through	7/31/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1550	9.48	2.62	53.4					
26A	71-47	Presque Isle	205	1.25	2.62	7.1					
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6				SUP	FRIOR
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%		MATE	RIALS
Sieve	(6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior I</u> 30701 W. 1	<u>Materials, LLC</u> .0 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		Farmingtor	n Hills, MI 48336
1"		98.8	100		100.0	99.4	0.6	0.6			
3/4"		75.2	100		100.0	86.8	12.6	13.2			
1/2"		36.0	95		100.0	65.5	21.2	34.5			
3/8"		20.1	88		100.0	56.6	9.0	43.4	*Maximum %	Retained must be	above the 3/8" sieve.
#4		4.0	20		96.2	41.7	14.9	58.3			qual 10% except max.,
#8		2.2	4.		80.3	33.3	8.4	66.7	-	00 and #200 sieves	
#16		2.0	2.	-	65.1	27.0	6.3	73.0			6 for each sieve except
#30 #50		1.9 1.8	2. 1.		49.5 26.5	20.8 11.6	6.3 9.2	79.2 88.4	,	00 and #200 sieves	
#30		1.8	1.		6.3	3.6	8.0	96.4		(nom. Max. 1.5") a	6 for the 1" sieve when
LBW		1.2	1.	-	0.8	1.1	2.5	98.9	a 2 111ax. 3126	(1011. Max. 1.5) a	ggregate is used.
Production G	radation	O Batch Plant Grad	dations 💿 Aggr	regate Supplier Gra	dations	Adjusted WF	Intial Production	on Sample (IPS	5)		
Coarsene	ess Factor:	65	Work	ability Factor:	33	35.8	Coars	eness Factor:	63		
45							Work	ability Factor:	36		
1 4	45, 44				10.45 7		<u>.</u>	Cumulative	%	Cumulative	
4	15, 44	52 41			JMF Zone		Sieve	Cumulative % Passing	% Retained	Cumulative % Retained	
-	45, 44	52, 41	57, 40	68, 40			2"	% Passing 100.0	Retained 0.0	% Retained 0.0	
40	45, 44	52, 41	57, 40	68, 40 68, 38	JMF Zone		<u>2</u> " 1.5"	% Passing 100.0 100.0	Retained 0.0 0.0	% Retained 0.0 0.0	
40	15, 44	52, 41		68, 38	75, 39		2" 1.5" 1"	% Passing 100.0 100.0 99.3	Retained 0.0 0.0 0.7	% Retained 0.0 0.0 0.7	
40	15, 44	52, 41			75, 39		2" 1.5" 1" 3/4"	% Passing 100.0 100.0 99.3 89.0	Retained 0.0 0.0 0.7 10.3	% Retained 0.0 0.0 0.7 11.0	
40	15, 44			68, 38	75, 39		2" 1.5" 1" 3/4" 1/2"	% Passing 100.0 100.0 99.3 89.0 70.3	Retained 0.0 0.0 0.7 10.3 18.7	% Retained 0.0 0.0 0.7 11.0 29.7	
Factor (%)	45, 33	52, 41		68, 38	75, 39		2" 1.5" 1" 3/4" 1/2" 3/8"	% Passing 100.0 100.0 99.3 89.0 70.3 59.9	Retained 0.0 0.7 10.3 18.7 10.4	% Retained 0.0 0.7 11.0 29.7 40.1	
Factor (%)				68, 38	75, 39		2" 1.5" 1" 3/4" 1/2" 3/8" #4	% Passing 100.0 100.0 99.3 89.0 70.3 59.9 41.9	Retained 0.0 0.7 10.3 18.7 10.4	% Retained 0.0 0.7 11.0 29.7 40.1 58.1	
Factor (%)	45, 33	52, 34		PS Production G	75, 39		2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8	% Passing 100.0 100.0 99.3 89.0 70.3 59.9 41.9 35.9	Retained 0.0 0.7 10.3 18.7 10.4 18.0	% Retained 0.0 0.7 11.0 29.7 40.1 58.1 64.1	
Factor (%)	45, 33 Operating Zone	52, 34		PS Production G	75, 39		2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	% Passing 100.0 100.0 99.3 89.0 70.3 59.9 41.9 35.9 27.8	Retained 0.0 0.7 10.3 18.7 10.4 18.0 6.0 8.2	% Retained 0.0 0.7 11.0 29.7 40.1 58.1 64.1 72.2	
Workability Factor (%)	45, 33	52, 34		PS Production G	Pradation 75, 39		2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	% Passing 100.0 100.0 99.3 89.0 70.3 59.9 41.9 35.9 27.8 18.9	Retained 0.0 0.7 10.3 18.7 10.4 18.0 6.0 8.2 8.8	% Retained 0.0 0.7 11.0 29.7 40.1 58.1 64.1 72.2 81.1	
Factor (%)	45, 33 Operating Zone	52, 34	• 60, 36	PS Production G	Pradation 75, 39		2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	% Passing 100.0 100.0 99.3 89.0 70.3 59.9 41.9 35.9 27.8	Retained 0.0 0.7 10.3 18.7 10.4 18.0 6.0 8.2	% Retained 0.0 0.7 11.0 29.7 40.1 58.1 64.1 72.2	

Approved By: Mart P. Ball

PLANT :	#:	p11					Contractor:				
Sample Date	e:	7/24/23		C	Concrete Grade:	DM, 4500HP					
Dates Test R	Represents:	7/25/2023	through	7/31/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1605	9.82	2.62	55.2					
26A	71-47	Presque Isle	150	0.92	2.62	5.2					
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		6AA	26	Α	2NS	Cumulative % Passing	% Retained	Cumulative % Retained			Materials, LLC 10 Mile Rd.
2"	1	100.0	100	0.0	100.0	100.0	0.0	0.0		Suite 500	
1.5"	1	100.0	100).0	100.0	100.0	0.0	0.0		Farmingto	n Hills, MI 48336
1"		98.6	10		100.0	99.2	0.8	0.8			
3/4"		80.3	100		100.0	89.1	10.1	10.9			
1/2"		41.9	95		100.0	67.7	21.4	32.3			
3/8"		25.1	88	-	100.0	58.0	9.6	42.0	*Maximum %	Retained must be	above the 3/8" sieve.
#4		5.3	20		96.1	42.0	16.0	58.0	*Any two adja	cent sieves must e	qual 10% except max.,
#8		2.9	4.		85.3	35.6	6.4	64.4	-	00 and #200 sieves	
#16		2.5	2.		70.5	29.4	6.2	70.6			6 for each sieve except
#30		2.4	2.	-	51.0	21.6	7.8	78.4		00 and #200 sieves	
#50 #100		2.3	1.		24.7 7.6	11.1 4.3	10.5	88.9 95.7			6 for the 1" sieve when
LBW		<u>2.2</u> 1.8	1.	-	1.3	4.3	6.8 2.7	95.7 98.4	a 2" max. size	(nom. Max. 1.5") a	ggregate is used.
Production G	Gradation	Batch Plant Gra		o gregate Supplier Gr	_	-		on Sample (IPS	3)		
	ess Factor:	65	Work	ability Factor:	36	38.1		eness Factor:	62		
45							Work	ability Factor:	36		
	45, 44				JMF Zone		Sieve	Cumulative % Passing	% Retained	Cumulative % Retained	
40		52, 41 5	6.40	67, 40			2"	100.0	0.0	0.0	
ج ⁴⁰				68 38	75, 39		1.5"	100.0	0.0	0.0	
<u>ຍ</u>			l.	Production (Gradation		1"	100.0	0.0	0.0	
<u>ā</u>			■ 60, 3 18	s 灯			3/4"	95.0	5.0	5.0	
e 35			i				1/2"	72.3	22.8	27.7	
u		52, 34	+	i			3/8"	60.4	11.8	39.6	
> 1	45, 33	50	,92				#4	42.6	17.8	57.4	
llity				67, 32 68, 31			#8	36.0	6.6	64.0	
ability							#16	29.5	6.5	70.5	
⁰⁰	Operating Zone	2									
Norkability	Operating Zone Boundary	2			75, 28		#30	20.3	9.2	79.7	
Workability Factor (%)		-	_, , , , , , , , , ,		75, 28		#30 #50	20.3 9.5	9.2 10.8	79.7 90.5	
		<u>50</u> 55	5 6 0	Factor (%)		80	#30	20.3	9.2	79.7	

Approved By: Mart P. Ball

PLANT #	#:	P-32					Contractor:			_	
Sample Date	:	7/24/23		(Concrete Grade	DM, 4500HP				-	
Dates Test R	epresents:	7/25/2023	through	7/31/2023			MDOT No.:			_	
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1605	9.82	2.62	55.2					
26A	71-47	Presque Isle	150	0.92	2.62	5.2					
2NS	95-013	Smelter Bay Total Wt	1150 2905	6.95 17.69	2.65	39.6 100.0				SUP	ERIOR
		TOLAT WI	2905	17.09		100.0	< Verify this n	umber is 100%	1	MATE	RIALS
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior I</u> 30701 W. 1	Materials, LLC 10 Mile Rd.
2"	1	00.0	10	0.0	100.0	100.0	0.0	0.0		Suite 500	
1.5"		00.0	10		100.0	100.0	0.0	0.0	1	Farmingtor	n Hills, MI 48336
1"		98.6	10	0.0	100.0	99.2	0.8	0.8]		
3/4"		80.3	10		100.0	89.1	10.1	10.9			
1/2"		41.9	95		100.0	67.7	21.4	32.3			
3/8"		25.1	88	-	100.0	58.0	9.6	42.0	*Maximum %	Retained must be a	above the 3/8" sieve.
#4		5.3	20		96.1	42.0	16.0	58.0			qual 10% except max.,
#8		2.9	4.	-	85.3	35.6	6.4	64.4		00 and #200 sieves.	
#16		2.5	2.	-	70.5	29.4	6.2	70.6			for each sieve except r
#30 #50		2.4	2.		51.0 24.7	21.6 11.1	7.8 10.5	78.4 88.9	· · · · ·	00 and #200 sieves	o for the 1" sieve when
#30		2.2	1.	-	7.6	4.3	6.8	95.7		(nom. Max. 1.5") ac	
LBW		1.8	1.		1.3	1.6	2.7	98.4		(1011. Max. 1.5) ag	gyregale is used.
	radation	O Batch Plant Gra	dations 💿 Agg	regate Supplier Gra	dations	Adjusted WF	Intial Production	on Sample (IPS	3)		
Production G	radation ess Factor:	 Batch Plant Gra 65 	0 55	regate Supplier Gra		Adjusted WF 38.1		on Sample (IPS eness Factor:	62	1	
Production G Coarsene		<u> </u>	0 55				Coars		ī]	
Production G Coarsene	ess Factor:	<u> </u>	0 55		36		Coars Work	eness Factor:	62	Cumulative	
Production G Coarsene		65	0 55				Coars	eness Factor: ability Factor:	62 36	Cumulative % Retained	
Production G Coarsene	ess Factor:	<u> </u>	0 55		36		Coars Work Sieve 2"	eness Factor: ability Factor: Cumulative % Passing 100.0	62 36 %	% Retained 0.0	
Production G Coarsene	ess Factor:	65	0 55	ability Factor:	36 JMF Zone		Coars Work Sieve 2" 1.5"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0	62 36 % Retained 0.0 0.0	% Retained 0.0 0.0	
Coarsene	ess Factor:	65	0 55	ability Factor:	36 JMF Zone		Coars Work Sieve 2" 1.5" 1"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0	62 36 % Retained 0.0 0.0 0.0	% Retained 0.0 0.0 0.0	
Production G Coarsene	ess Factor:	65	0 55	67, 40	36 JMF Zone		Coars Work Sieve 2" 1.5" 1" 3/4"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0 95.0	62 36 % Retained 0.0 0.0 0.0 0.0 5.0	% Retained 0.0 0.0 0.0 5.0	
Production G Coarsene	ess Factor:	65 52, 41 56	Work	67, 40	36 JMF Zone		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0 95.0 72.3	62 36 % Retained 0.0 0.0 0.0 5.0 22.8	% Retained 0.0 0.0 0.0 5.0 27.7	
Production G Coarsene 45 40 40 40 35	45, 44	65	Work	67, 40	36 JMF Zone		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0 95.0 72.3 60.4	62 36 % Retained 0.0 0.0 0.0 5.0 22.8 11.8	% Retained 0.0 0.0 0.0 20.0 27.7 39.6	
Production G Coarsene 45 40 40 40 35	ess Factor:	65 52, 41 56	Work	67,40	36 JMF Zone		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0 95.0 72.3 60.4 42.6	62 36 % Retained 0.0 0.0 0.0 5.0 22.8 11.8 17.8	% Retained 0.0 0.0 0.0 27.7 39.6 57.4	
Lactor G Coarsene 45 40 40 40 35 35	45, 33	65 52, 41 52, 34 52, 34	Work	67, 40	36 JMF Zone		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 95.0 72.3 60.4 42.6 36.0	62 36 % Retained 0.0 0.0 0.0 5.0 22.8 11.8 17.8 6.6	% Retained 0.0 0.0 0.0 27.7 39.6 57.4 64.0	
Lactor (%) 45 45 40 40 40 40 40 40 40 40 40 40 40	45, 44 45, 33 Operating Zone	65 52, 41 52, 34 52, 34	Work	67,40	JMF Zone 75, 39		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 95.0 72.3 60.4 42.6 36.0 29.5	62 36 % Retained 0.0 0.0 0.0 5.0 22.8 11.8 17.8 6.6 6.5	% Retained 0.0 0.0 0.0 27.7 39.6 57.4 64.0 70.5	
Production G Coarsene 45 40 40 40 35 35 35 35	45, 33	65 52, 41 52, 34 52, 34	Work	67,40	36 JMF Zone		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 95.0 72.3 60.4 42.6 36.0	62 36 % Retained 0.0 0.0 0.0 5.0 22.8 11.8 17.8 6.6	% Retained 0.0 0.0 0.0 27.7 39.6 57.4 64.0	
Harding Galaxies (%)	45, 44 45, 33 Operating Zone	65 52, 41 52, 34 52, 34	Work	67,40	36 JMF Zone Fradation 75, 39 75, 28		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 95.0 72.3 60.4 42.6 36.0 29.5 20.3	62 36 % Retained 0.0 0.0 0.0 5.0 22.8 11.8 17.8 6.6 6.5 9.2	% Retained 0.0 0.0 0.0 27.7 39.6 57.4 64.0 70.5 79.7	

Approved By:

PLANT #	#:	P-35					Contractor:				
Sample Date	:	7/24/23		C	Concrete Grade	: DM, 4500HP				-	
Dates Test R	epresents:	7/25/2023	through	7/31/2023			MDOT No.:			_	
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	58-003	Stoneco	1575	9.38	2.69	53.4					
26A	58-003	Stoneco	225	1.34	2.69	7.6					
2NS	81-019	Pleasant Lake	1150	6.95	2.65	39.0				SUP	ERIOR
		Total Wt	2950	17.68		100.0	< Verify this n	umber is 100%	1	MATE	RIALS
Sieve		6AA	26	Α	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior I</u> 30701 W. 1	Materials, LLC 10 Mile Rd.
2"	1	00.0	10	0.0	100.0	100.0	0.0	0.0		Suite 500	
1.5"		00.0	10	0.0	100.0	100.0	0.0	0.0]	Farmingtor	n Hills, MI 48336
1"		99.6	100		100.0	99.8	0.2	0.2]		
3/4"		83.5	10		100.0	91.2	8.6	8.8			
1/2"		43.5	99	-	100.0	69.8	21.4	30.2			
3/8"		21.3	90		100.0	57.2	12.6	42.8	*Maximum %	Retained must be a	above the 3/8" sieve.
#4		3.4	10		98.2	40.9	16.3	59.1			qual 10% except max.,
#8		1.7	3.	-	83.9	33.9	7.0	66.1	· · · ·	00 and #200 sieves.	
#16		1.4	2.	-	67.4	27.2	6.6	72.8			for each sieve except i
#30 #50		<u>1.2</u> 1.1	2.		49.1 25.3	20.0 10.6	7.3 9.3	80.0 89.4	· · · ·	00 and #200 sieves.	
#100		1.1	2.		7.3	3.6	9.3 7.0	96.4		(nom. Max. 1.5") ag	for the 1" sieve when
LBW		0.9	2		1.5	1.2	2.4	98.8		(1011. Wax. 1.5) ay	gyregate is used.
		Batch Plant Gra	dations 💿 Agg	regate Supplier Gra	idations				1		
roduction G	radation			5 11		Adjusted WF	Intial Production	on Sample (IPS	5)		
	ess Factor:	65	Work	ability Factor:	34	Adjusted WF		on Sample (IPS eness Factor:	S) 61		
Coarsene			Work		34		Coars				
Coarsene	ess Factor:		Work		•		Coars Work	eness Factor:	61	Cumulative	
Coarsene		65	Work		34 JMF Zone		Coars	eness Factor: ability Factor:	61 36	Cumulative % Retained	
45	ess Factor:		Work		•		Coars Work Sieve 2"	eness Factor: ability Factor: Cumulative % Passing 100.0	61 36 % Retained 0.0		
45 40 40	ess Factor:	65	Work	sability Factor:	•		Coars Work Sieve 2" 1.5"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0	61 36 % Retained 0.0 0.0	% Retained 0.0 0.0	
45 40 40	ess Factor:	65	Work		JMF Zone		Coars Work Sieve 2" 1.5" 1"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3	61 36 % Retained 0.0 0.0 0.7	% Retained 0.0 0.0 0.7	
45 40 40	ess Factor:	65	Work	84 57, 40	JMF Zone		Coars Work Sieve 2" 1.5" 1" 3/4"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1	61 36 % Retained 0.0 0.0 0.7 10.2	% Retained 0.0 0.0 0.7 10.9	
45 40 40	ess Factor:	65 52, 41 56;		84 57, 40	JMF Zone		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5	61 36 % Retained 0.0 0.0 0.7 10.2 18.6	% Retained 0.0 0.0 0.7 10.9 29.5	
Eactor (%)	45, 44	65		84 57, 40	JMF Zone		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5	61 36 % Retained 0.0 0.0 0.7 10.2 18.6 10.0	% Retained 0.0 0.7 10.9 29.5 39.5	
Eactor (%)	ess Factor:	65	• 60,186	68, 38 Production Gr	JMF Zone 75, 39 radation		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5 44.1	61 36 % Retained 0.0 0.0 0.7 10.2 18.6 10.0 16.4	% Retained 0.0 0.7 10.9 29.5 39.5 55.9	
Eactor (%)	45, 44	65 52, 41 52, 34 52, 34 56,	• 60,186	84 57, 40	JMF Zone 75, 39 radation		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5	61 36 % Retained 0.0 0.0 0.7 10.2 18.6 10.0 16.4 8.5	% Retained 0.0 0.7 10.9 29.5 39.5 55.9 64.4	
Eactor (%)	45, 44 45, 33 Operating Zone	65 52, 41 52, 34 52, 34 56,	• 60,186	68, 38 Production Gr	JMF Zone 75, 39 radation		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5 44.1 35.6	61 36 % <u>Retained</u> 0.0 0.0 0.7 10.2 18.6 10.0 16.4 8.5 7.9	% Retained 0.0 0.7 10.9 29.5 39.5 55.9	
Coarsene 40 40 35 35 00 35	45, 44	65 52, 41 52, 34 52, 34 56,	• 60,186	68, 38 Production Gr	JMF Zone 75, 39 radation		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5 44.1 35.6 27.7	61 36 % Retained 0.0 0.0 0.7 10.2 18.6 10.0 16.4 8.5	% Retained 0.0 0.7 10.9 29.5 39.5 55.9 64.4 72.3	
Factor (%)	45, 44 45, 33 Operating Zone	65 52, 41 52, 34 52, 34 56,	10 10 10 10 10 10 10 10 10 10	68, 38 Production Gr	75, 39 radation 75, 28		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5 44.1 35.6 27.7 20.6	61 36 % Retained 0.0 0.0 0.7 10.2 18.6 10.0 16.4 8.5 7.9 7.1	% Retained 0.0 0.7 10.9 29.5 39.5 55.9 64.4 72.3 79.4	

PREPARED BY: SM, LLC Technical Service

Approved By:

PLANT #	#:	P-36	_				Contractor:			_	
Sample Date	:	7/24/23	_	C	Concrete Grade	DM, 4500HP					
Dates Test R	epresents:	7/25/2023	through	7/31/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1550	9.48	2.62	53.4					
26A	71-47	Presque Isle	205	1.25	2.62	7.1					
2NS	63-92	Grange Hall	1150	6.95	2.65	39.6				SUP	ERIOR
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%	1		RIALS
Sieve	(6 A A	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior I</u> 30701 W. 2	Materials, LLC 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"		98.8	100		100.0	99.4	0.6	0.6			
3/4"		75.2	100		100.0	86.8	12.6	13.2			
1/2"		36.0	95	.5	100.0	65.5	21.2	34.5			
3/8"		20.1	88	.5	100.0	56.6	9.0	43.4	*Maximum %	Retained must be a	above the 3/8" sieve.
#4		4.0	20	-	96.0	41.6	15.0	58.4	*Any two adja	icent sieves must e	qual 10% except max.,
#8		2.2	4.	-	81.5	33.8	7.8	66.2	nom. max., #10	00 and #200 sieves	
#16		2.0	2.		66.6	27.6	6.2	72.4	*% Retained I	must be at least 4%	for each sieve except n
#30		1.9	2.		47.4	19.9	7.7	80.1	,	00 and #200 sieves	
#50		1.8	1.		20.8	9.3	10.6	90.7			o for the 1" sieve when
#100 LBW		1.8 1.2	1.		3.6 0.6	2.5 1.0	6.8 1.5	97.5 99.0	a 2" max. size	(nom. Max. 1.5") ag	ggregate is used.
		Batch Plant Gra	-	s regate Supplier Gra							
				regate Supplier Ora			Infial Productio				
	rauation	0						on Sample (IPS			
	ess Factor:	0	Work	ability Factor:	34	36.3	Coars	eness Factor:	63		
Coarsene	rauation	0	Work	ability Factor:	34		Coars	eness Factor: ability Factor:	63 35		
Coarsene	rauation	0	Work	ability Factor:	34 JMF Zone		Coars	eness Factor: ability Factor: Cumulative	63 35 %	Cumulative	
Coarsene	ss Factor:	66	Work	ability Factor:			Coars Work Sieve	eness Factor: ability Factor: Cumulative % Passing	63 35 % Retained	% Retained	
Coarsene	ss Factor:	0	Work	ability Factor:	JMF Zone		Coars Work Sieve 2"	eness Factor: ability Factor: Cumulative % Passing 100.0	63 35 % Retained 0.0	% Retained 0.0	
45 40	ss Factor:	66	Work	ability Factor:			Coars Work Sieve 2" 1.5"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0	63 35 % Retained 0.0 0.0	% Retained 0.0 0.0	
45 40	ss Factor:	66	Work	68, 39	75, 39		Coars Work Sieve 2" 1.5" 1"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.1	63 35 % Retained 0.0 0.0 0.0 0.9	% Retained 0.0 0.0 0.9	
Coarsene	ss Factor:	66	58, 33	68, 39 68, 38	75, 39		Coars Work Sieve 2" 1.5" 1" 3/4"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.1 90.3	63 35 % Retained 0.0 0.0 0.0 0.9 8.8	% Retained 0.0 0.0 0.9 9.7	
45 40	ss Factor:	66	58, 39	68, 38	75, 39		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.1 90.3 69.2	63 35 % Retained 0.0 0.0 0.9 8.8 21.1	% Retained 0.0 0.0 0.9 9.7 30.8	
Eactor (%)	5,44	66	58, 39	68, 39 68, 38	75, 39		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.1 90.3 69.2 59.1	63 35 % Retained 0.0 0.0 0.9 8.8 21.1 10.1	% Retained 0.0 0.0 0.9 9.7 30.8 40.9	
Eactor (%)	ss Factor:	66	58 , 39 6 0, 36	P8, 99 68, 38 Production 0 IPS	JMF Zone 75, 39 Gradation		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.1 90.3 69.2 59.1 41.8	63 35 % Retained 0.0 0.0 0.9 8.8 21.1	% Retained 0.0 0.0 0.9 9.7 30.8	
Eactor (%)	5, 44 45, 33	66	58, 39	68, 39 68, 38	JMF Zone 75, 39 Gradation		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.1 90.3 69.2 59.1	63 35 % Retained 0.0 0.0 0.9 8.8 21.1 10.1 17.3	% Retained 0.0 0.0 9.7 30.8 40.9 58.2	
45 40 40 40 35 35	5,44	66	58 , 39 6 0, 36	P8, 99 68, 38 Production 0 IPS	JMF Zone 75, 39 Gradation		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.1 90.3 69.2 59.1 41.8 35.1	63 35 % Retained 0.0 0.0 0.9 8.8 21.1 10.1 17.3 6.6	% Retained 0.0 0.0 9.7 30.8 40.9 58.2 64.9	
Coarsene	5, 44 45, 33 Operating Zone	66	58 , 39 6 0, 36	P8, 99 68, 38 Production 0 IPS	JMF Zone 75, 39 Gradation		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30 #50	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.1 90.3 69.2 59.1 41.8 35.1 28.5	63 35 % Retained 0.0 0.0 0.9 8.8 21.1 10.1 17.3 6.6 6.6	% Retained 0.0 0.9 9.7 30.8 40.9 58.2 64.9 71.5 78.8 91.3	
Factor (%)	5, 44 45, 33 Operating Zone	66	58 , 39 6 0, 36 5 8, 31	P8, 99 68, 38 Production 0 IPS	JMF Zone 75, 39 Gradation		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.1 90.3 69.2 59.1 41.8 35.1 28.5 21.2	63 35 % Retained 0.0 0.0 0.9 8.8 21.1 10.1 17.3 6.6 6.6 7.3	% Retained 0.0 0.9 9.7 30.8 40.9 58.2 64.9 71.5 78.8	

Approved By:

PLANT #	#:	P-38					Contractor:				
Sample Date	:	7/24/23		С	oncrete Grade	: DM, 4500HP					
Dates Test R		7/25/2023	through 7/31/2023				MDOT No.:			•	
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	58-003	Stoneco	1575	9.38	2.69	53.4					
26A	58-003	Stoneco	225	1.34	2.69	7.6					
2NS	81-019	Pleasant Lake	1150	6.95	2.65	39.0				SUP	ERIOR
Total Wi		t 2950	17.68		100.0	< Verify this number is 100%		MATERIALS			
Sieve 6		6AA	26A		2NS	Cumulative % Passing	% Retained Cumulative % Retained			<u>Superior I</u> 30701 W. 1	Materials, LLC I0 Mile Rd.
2"	-	00.0	100).0	100.0	100.0	0.0	0.0		Suite 500	
1.5"		00.0	100.0		100.0 100.0	100.0	0.0	0.0	Farmington Hills, MI 48336		
1"		99.6		100.0		99.8	0.2	0.2	1		
3/4"		83.5	100		100.0	91.2	8.6	8.8			
1/2"		43.5	99		100.0	69.8	21.4	30.2			
3/8"		21.3	90.1		100.0	57.2	12.6	42.8	*Maximum % Retained must be above the 3/8" siev		
#4 #8		3.4 1.7	10.7 3.3		98.2 83.9	40.9 33.9	16.3 7.0	59.1 66.1	*Any two adjacent sieves must equal 10% except ma		
#o #16		1.7	2.6		67.4	27.2	6.6	72.8	nom. max., #100 and #200 sieves. *% Retained must be at least 4% for each sieve exce		
#30		1.2	2.4		49.1	20.0	7.3	80.0	nom. max., #100 and #200 sieves.		
#50		1.1	2.2		25.3	10.6	9.3	89.4	*% Retained must be at least 8% for the 1" sieve wher		
#100		1.1	2.2		7.3	3.6	7.0	96.4	a 2" max. size (nom. Max. 1.5") aggregate is used.		
LBW		0.9	2.	0	1.5	1.2	2.4	98.8		, , ,	
Production G	radation	O Batch Plant Gra	idations 💿 Agg	regate Supplier Gra	dations	Adjusted WF	Intial Production	on Sample (IPS	5)		
	luuuuon	0				/ ajubica ///	India i Todaolio	en Gampie (il G	· /	-	
	ess Factor:	65	Work	ability Factor:	34	36.4		eness Factor:	61		
Coarsene		<u> </u>	Work	ability Factor:	34	,	Coars		<i>,</i>		
Coarsene	ess Factor:	<u> </u>	Work	ability Factor:		,	Coars Work	eness Factor:	61	Cumulative	
Coarsene		65	Work	ability Factor:	34 JMF Zone	,	Coars Work Sieve	eness Factor: ability Factor: Cumulative % Passing	61 36 % Retained	% Retained	
Coarsene	ess Factor:	<u> </u>	Work	ability Factor:		,	Coars Work Sieve 2"	eness Factor: ability Factor: Cumulative % Passing 100.0	61 36 % Retained 0.0	% Retained 0.0	
45 40 40	ess Factor:	65	Work	97, 40		,	Coars Work Sieve 2" 1.5"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0	61 36 % Retained 0.0 0.0	% Retained 0.0 0.0	
45 40 40	ess Factor:	65	Work	ability Factor:	JMF Zone	,	Coars Work Sieve 2" 1.5" 1"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3	61 36 % Retained 0.0 0.0 0.0 0.7	% Retained 0.0 0.0 0.7	
45 40 40	ess Factor:	65	Work	68,38	JMF Zone	,	Coars Work Sieve 2" 1.5" 1" 3/4"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1	61 36 % Retained 0.0 0.0 0.7 10.2	% Retained 0.0 0.0 0.7 10.9	
45 40 40	ess Factor:	65 52, 41 56,		68,38	JMF Zone	,	Coars Work Sieve 2" 1.5" 1" 3/4" 1/2"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5	61 36 % Retained 0.0 0.0 0.7 10.2 18.6	% Retained 0.0 0.0 0.7 10.9 29.5	
45 40 40 40 40 40 40 40 40 40 40 40 40 40	uss Factor:	65		68,38	JMF Zone	,	Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5	61 36 % <u>Retained</u> 0.0 0.0 0.7 10.2 18.6 10.0	% Retained 0.0 0.7 10.9 29.5 39.5	
45 40 40 40 40 40 40 40 40 40 40 40 40 40	ess Factor:	65 52, 41 56,	• 60,µĝ§	68, 38	JMF Zone	,	Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5 44.1	61 36 % Retained 0.0 0.0 0.7 10.2 18.6 10.0 16.4	% Retained 0.0 0.7 10.9 29.5 39.5 55.9	
45 40 40 40 40 40 40 40 40 40 40 40 40 40	45, 33	65 52, 41 52, 34 52, 34 56,	• 60,µĝ§	68,38	JMF Zone	,	Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5	61 36 % <u>Retained</u> 0.0 0.0 0.7 10.2 18.6 10.0	% Retained 0.0 0.7 10.9 29.5 39.5	
Eactor %	uss Factor:	65 52, 41 52, 34 52, 34 56,	• 60,µĝ§	68, 38	JMF Zone 75, 39 adation	,	Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5 44.1 35.6	61 36 % Retained 0.0 0.0 0.7 10.2 18.6 10.0 16.4 8.5	% Retained 0.0 0.7 10.9 29.5 39.5 55.9 64.4	
Morkability Factor (%)	45, 33 Operating Zone	65 52, 41 52, 34 52, 34 56,	• 60,µĝ§	68, 38	JMF Zone	,	Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5 44.1 35.6 27.7	61 36 % <u>Retained</u> 0.0 0.0 0.7 10.2 18.6 10.0 16.4 8.5 7.9	% Retained 0.0 0.7 10.9 29.5 39.5 55.9 64.4 72.3	
Eactor (%)	45, 33 Operating Zone	65 52, 41 52, 34 52, 34 56,	+0 ■ 60 ₁ β§	68, 38	JMF Zone 75, 39 adation	,	Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5 44.1 35.6 27.7 20.6	61 36 % Retained 0.0 0.0 0.7 10.2 18.6 10.0 16.4 8.5 7.9 7.1	% Retained 0.0 0.7 10.9 29.5 39.5 55.9 64.4 72.3 79.4	

Approved By:

PLANT a		P-39					Contractor:					
Sample Date	:	7/24/23		(Concrete Grade:	DM, 4500HP						
Dates Test Represents:		7/25/2023	through	7/31/2023			MDOT No.:					
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution						
6AA	71-47	Presque Isle	1705	10.43	2.62	58.7						
26A	71-47	Presque Isle	100	0.61	2.62	3.4						
2NS	44-051	Krake Willis Rd		6.65	2.65	37.9				SIIP	ERIOR	
		Total Wt	2905	17.69		100.0	< Verify this number is 100%		MATERIALS			
Sieve 6		6AA	26A		2NS	Cumulative % Passing	% Retained	% Retained Cumulative % Retained		Superior Materials, LLC 30701 W. 10 Mile Rd.		
2"		100.0	100.0		100.0	100.0	0.0	0.0	Suite 500			
1.5"		100.0	100		100.0	100.0	0.0	0.0		Farmingto	n Hills, MI 48336	
1"		96.4	100.0		100.0	97.9	2.1	2.1]			
3/4"		86.2	10		100.0	91.9	6.0	8.1				
1/2"		51.5	93		100.0	71.3	20.6	28.7				
3/8"		32.9	81		100.0	60.0	11.3	40.0	*Maximum % Retained must be above the 3/8" siev			
#4		5.2	16.5		95.9	39.9	20.1	60.1	*Any two adjacent sieves must equal 10% except ma			
#8		2.5	3.4		82.4	32.8	7.1	67.2	nom. max., #100 and #200 sieves.			
#16 #30		2.2	1.7		68.2	27.2 20.6	5.6 6.6	72.8	*% Retained must be at least 4% for each sieve exce			
#30 #50		2.1	1.4 1.2		51.0 23.0	<u>20.6</u> 9.9	10.7	79.4 90.1	nom. max., #100 and #200 sieves. *% Retained must be at least 8% for the 1" sieve whe			
#100		1.9	1.2		5.6	3.3	6.6	96.7		ggregate is used.		
LBW		1.7	1.		1.1	1.4	1.8	98.6	a 2 111ax. 5126	(1011. Max. 1.5) a	ggregate is used.	
Production G	radation	O Batch Plant Gra	dations 💿 Agg	regate Supplier Gra	adations	Adjusted WF	Intial Production	on Sample (IPS) ;)			
Coarsene	ess Factor:	60	Work	ability Factor	: 33	35.3	Coarseness Factor:		63			
							Workability Factor:		36			
45	-					s		Cumulative	%	Cumulative		
- 4	15, 44				JMF Zone		Sieve	% Passing	Retained	% Retained		
-		52, 41					2"	100.0	0.0	0.0		
a ⁴⁰			58,40		75, 39		1.5"	100.0	0.0	0.0		
2				68, 38	I		1"	100.0	0.0	0.0		
j į			■ 60 36				3/4"	89.7	10.3	10.3		
5 35		1	Product	orPSradation			1/2"	70.3	19.4	29.7		
Щ́ I		52, 34					3/8"	59.1	11.2	40.9		
Ē	45, 33						#4	42.8	16.3	57.2		
iq 30		_	50,52	6888 6878	32		#8	35.5	7.3	64.5		
rks	Operating Zone						#16	29.0	6.5	71.0		
Workability Factor (%)	Boundary				75, 28		#30 #50	21.2 9.8	7.7 11.5	78.8 90.2		
> ₂₅							#50 #100	9.8 3.7	6.1	90.2 96.3		
			Coarseness	05 70	75	80						
40	45	50 55	00	_6570	15	80	LBW	1.2	2.5	98.8		

Approved By: Mart P. Ball

PLANT :	#:	P-O2	_				Contractor:			_	
Sample Date	e:	7/24/23				: DM, 4500HP					
Dates Test R	Represents:	7/25/2023	through	7/31/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1550	9.48	2.62	53.4					
26A	71-47	Presque Isle	205	1.25	2.62	7.1					
2NS 63-115		Ray Rd	1150	6.95	2.65	39.6			SUPERIOR		
		Total Wt	2905	17.69		100.0	< Verify this number is 100%		1		RIALS
Sieve 6		6AA	26A		2NS	Cumulative % Passing	% Retained	/ Retained			Materials, LLC 10 Mile Rd.
2"	1	00.0	100	0	100.0	100.0	0.0	0.0 0.0		Suite 500	
1.5"		00.0		100.0		100.0	0.0	0.0	Farmington Hills, MI 48336		
1"		98.8		100.0		99.4	0.6	0.6	1		
3/4"		75.2	100	100.0		86.8	12.6	13.2	1		
1/2"		36.0	95	.5	100.0	65.5	21.2	34.5			
3/8"		20.1	88.5		100.0	56.6	9.0	43.4	*Maximum % Retained must be above the 3/8" sieve.		
#4		4.0	20.6		96.2	41.7	14.9	58.3	*Any two adjacent sieves must equal 10% except ma		
#8		2.2	4.8		80.3	33.3	8.4	66.7	nom. max., #100 and #200 sieves.		
#16		2.0	2.6		65.1 49.5	27.0	6.3	73.0	*% Retained must be at least 4% for each sieve exce		
#30		1.9		2.0		20.8	6.3	79.2	nom. max., #100 and #200 sieves.		
#50		1.8	1.8 1.8		26.5	11.6 3.6	9.2 8.0	88.4	*% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.		
LBW	#100 1.8 LBW 1.2		1.0		6.3 0.8	3.6	8.0 2.5	96.4 98.9	a 2" max. size	(nom. Max. 1.5") ag	ggregate is used.
roduction G	Gradation	Batch Plant Gra	-	egate SupplierGrac			-	on Sample (IPS	3)		
	ess Factor:	65	Work	ability Factor:	33	35.8		eness Factor:	63		
							Workability Factor:		35	1	
⁴⁵ [-										
								-		Cumulative	
1	45, 44				JMF Zone		Sieve	Cumulative	%	Cumulative % Retained	
-	43, 44	52, 41			JMF Zone		Sieve 2"	-		Cumulative % Retained 0.0	
40	40, 44	52, 41	58, 39	68, 39				Cumulative % Passing	% Retained	% Retained	
40	40, 44	52, 41	58, 39	68, 39 68, 38			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	40, 44	52, 41			75, 39		2" 1.5" 1" 3/4"	Cumulative % Passing 100.0 100.0 100.0 95.1	% Retained 0.0 0.0 0.0 4.9	% Retained 0.0 0.0 0.0 4.9	
40	43, 44	52, 41		68, 39 68, 38 Production G	75, 39		2" 1.5" 1" 3/4" 1/2"	Cumulative % Passing 100.0 100.0 100.0 95.1 74.6	% Retained 0.0 0.0 0.0 4.9 20.5	% Retained 0.0 0.0 0.0 4.9 25.4	
Factor (%)	\rightarrow	52, 41			75, 39		2" 1.5" 1" 3/4" 1/2" 3/8"	Cumulative % Passing 100.0 100.0 95.1 74.6 59.3	% Retained 0.0 0.0 0.0 4.9 20.5 15.3	% Retained 0.0 0.0 0.0 4.9 25.4 40.7	
Factor (%)	45, 33		■ 60, 36	IPS Production G	75, 39		2" 1.5" 1" 3/4" 1/2" 3/8" #4	Cumulative % Passing 100.0 100.0 95.1 74.6 59.3 42.1	% Retained 0.0 0.0 4.9 20.5 15.3 17.2	% Retained 0.0 0.0 0.0 25.4 40.7 57.9	
Factor (%)	45, 33	52, 34			75, 39		2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8	Cumulative % Passing 100.0 100.0 95.1 74.6 59.3 42.1 35.1	% Retained 0.0 0.0 4.9 20.5 15.3 17.2 7.1	% Retained 0.0 0.0 0.0 25.4 40.7 57.9 64.9	
Factor (%)	45, 33 Operating Zone	52, 34	■ 60, 36	IPS Production G	Gradation		2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	Cumulative % Passing 100.0 100.0 95.1 74.6 59.3 42.1 35.1 29.2	% Retained 0.0 0.0 0.0 20.5 15.3 17.2 7.1 5.9	% Retained 0.0 0.0 4.9 25.4 40.7 57.9 64.9 70.8	
Factor (%)	45, 33	52, 34	■ 60, 36	IPS Production G	75, 39		2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	Cumulative % Passing 100.0 100.0 95.1 74.6 59.3 42.1 35.1 29.2 21.9	% Retained 0.0 0.0 20.5 15.3 17.2 7.1 5.9 7.3	% Retained 0.0 0.0 0.0 4.9 25.4 40.7 57.9 64.9 70.8 78.1	
ility Factor (%) 28 00	45, 33 Operating Zone	52, 34	• 60, 36	IPS Production G	Gradation 75, 28	80	2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	Cumulative % Passing 100.0 100.0 95.1 74.6 59.3 42.1 35.1 29.2	% Retained 0.0 0.0 0.0 20.5 15.3 17.2 7.1 5.9	% Retained 0.0 0.0 4.9 25.4 40.7 57.9 64.9 70.8	

Approved By: