Production Gradation Report

									•	roduction	Gradation Repo
PLANT #	#:	P-101					Contractor:				
Sample Date:	:	12/4/23		C	Concrete Grade	DM, 4500HP				-	
Dates Test Re		12/5/2023	through	12/11/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1450	8.87	2.62	50.0					
26A	71-47	Presque Isle	300	1.83	2.62	10.3					
2NS	75-051	Mid Michigan	1150	6.93	2.66	39.7				SUP	ERIOR
		Total Wt	2900	17.63		100.0	< Verify this n	umber is 100%	•		RIALS
Sieve		6AA	26	6A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained			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		0.0	100.0	100.0	0.0	0.0]	Farmingto	n Hills, MI 48336
1"	1	00.0	10		100.0	100.0	0.0	0.0			
3/4"		88.3	-	0.0	100.0	94.2	5.8	5.8			
1/2"		43.8		5.8	100.0	71.6	22.6	28.4			
3/8"		24.1	86		100.0	60.7	10.9	39.3			above the 3/8" sieve.
#4		2.8).2	96.4	41.7	19.0	58.3	· · ·		qual 10% except max.,
#8		1.5	4		83.4 68.8	34.3 28.2	7.4 6.1	65.7 71.8		00 and #200 sieves	
#16 #30		1.3 1.3	2		51.4	28.2	7.0	71.8			for each sieve except m
		1.3	1		25.7	11.0	10.2	89.0		00 and #200 sieves	5. 6 for the 3/4" sieve when
#5()											
#50 #100				-			-				annrenate is used
#50 #100 LBW		1.2	1	.5	6.2	3.2	7.8	96.8		e (nom. Max. 1.0")	aggregate is used.
#100 LBW			1	.5	6.2 0.8		7.8 2.2		a 1.5" max. siz		aggregate is used.
#100 LBW Production G		1.2 1.1	1 1 adations () Agg	.5 .3	6.2 0.8	3.2 1.0	7.8 2.2 Initial Producti	96.8 99.0	a 1.5" max. siz		aggregate is used.
#100 LBW Production G	radation	1.2 1.1 O Batch Plant Gra	1 1 adations () Agg	.5 .3 regate Supplier Gra	6.2 0.8 Idations	3.2 1.0 Adjusted WF	7.8 2.2 Initial Producti Coars	96.8 99.0 on Sample (IPS eness Factor:	a 1.5" max. siz S)		aggregate is used.
#100 LBW Production G	radation	1.2 1.1 O Batch Plant Gra	1 1 adations () Agg	.5 .3 regate Supplier Gra	6.2 0.8 Idations 34	3.2 1.0 Adjusted WF	7.8 2.2 Initial Producti Coars Work	96.8 99.0 on Sample (IPS	a 1.5" max. siz 6) 62 35		aggregate is used.
#100 LBW Production G	radation	1.2 1.1 Batch Plant Gra 60	1 1 adations () Agg	.5 .3 regate Supplier Gra	6.2 0.8 Idations	3.2 1.0 Adjusted WF	7.8 2.2 Initial Producti Coars	96.8 99.0 on Sample (IPS eness Factor: ability Factor:	a 1.5" max. siz 6) 62	e (nom. Max. 1.0")	aggregate is used.
#100 LBW Production G Coarsene	radation	1.2 1.1 O Batch Plant Gra	1 1 adations () Agg	.5 .3 regate Supplier Gra	6.2 0.8 Idations 34	3.2 1.0 Adjusted WF	7.8 2.2 Initial Producti Coars Work Sieve 2"	96.8 99.0 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0	a 1.5" max. siz S) 62 35 % Retained 0.0	e (nom. Max. 1.0") Cumulative	aggregate is used.
#100 LBW Production G Coarsene	radation	1.2 1.1 Batch Plant Gra 60	1 1 adations () Agg	.5 .3 regate Supplier Gra cability Factor:	6.2 0.8 Idations 34 JMF Zone	3.2 1.0 Adjusted WF	7.8 2.2 Initial Producti Coars Work Sieve 2" 1.5"	96.8 99.0 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0	a 1.5" max. siz S) 62 35 % Retained	te (nom. Max. 1.0") Cumulative % Retained 0.0 0.0	aggregate is used.
#100 LBW Production G Coarsene	radation	1.2 1.1 Batch Plant Gra 60	1 adations () Agg Worl	.5 .3 regate Supplier Gra kability Factor:	6.2 0.8 Idations 34 JMF Zone	3.2 1.0 Adjusted WF	7.8 2.2 Initial Producti Coars Work Sieve 2" 1.5" 1"	96.8 99.0 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0	a 1.5" max. siz 62 35 % Retained 0.0 0.0 0.0	te (nom. Max. 1.0") Cumulative % Retained 0.0 0.0 0.0 0.0	aggregate is used.
#100 LBW Production G Coarsene	radation	1.2 1.1 Batch Plant Gra 60	1 adations () Agg Worl	.5 .3 regate Supplier Gra kability Factor:	6.2 0.8 Idations 34 JMF Zone	3.2 1.0 Adjusted WF	7.8 2.2 Initial Producti Coars Work Sieve 2" 1.5" 1" 3/4"	96.8 99.0 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0 95.0	a 1.5" max. siz 62 35 % Retained 0.0 0.0 0.0 0.0 5.0	e (nom. Max. 1.0") Cumulative % Retained 0.0 0.0 0.0 0.0 5.0	aggregate is used.
#100 LBW Production G Coarsene	radation	1.2 1.1 () Batch Plant Gra 60 52, 41	1 adations () Agg Worl	.5 .3 regate Supplier Gra cability Factor:	6.2 0.8 Idations 34 JMF Zone	3.2 1.0 Adjusted WF	7.8 2.2 Initial Producti Coars Work Sieve 2" 1.5" 1" 3/4" 1/2"	96.8 99.0 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0 95.0 70.5	a 1.5" max. siz 62 35 % Retained 0.0 0.0 0.0 0.0 5.0 24.5	Cumulative % Retained 0.0 0.0 0.0 5.0 29.5	aggregate is used.
#100 LBW Production G Coarsene	radation ess Factor:	1.2 1.1 Batch Plant Gra 60	1 adations () Agg Worl	.5 .3 regate Supplier Gra kability Factor:	6.2 0.8 Idations 34 JMF Zone	3.2 1.0 Adjusted WF	7.8 2.2 Initial Producti Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8"	96.8 99.0 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0 95.0 70.5 60.0	a 1.5" max. siz 62 35 % Retained 0.0 0.0 0.0 0.0 5.0 24.5 10.5	Cumulative % Retained 0.0 0.0 0.0 5.0 29.5 40.0	aggregate is used.
#100 LBW Production G Coarsene	radation	1.2 1.1 () Batch Plant Gra 60 52, 41	1 adations () Agg Worl	5 3 regate Supplier Gra cability Factor: 67, 39 68, 3 uction Gradation PS	6.2 0.8 Idations JMF Zone 8 75, 39	3.2 1.0 Adjusted WF	7.8 2.2 Initial Producti Coars Work Sieve 2" 1.5" 1.5" 1.5" 1.5" 3/4" 1/2" 3/8" #4	96.8 99.0 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0 95.0 70.5 60.0 44.4	a 1.5" max. siz 62 35 % Retained 0.0 0.0 0.0 0.0 5.0 24.5 10.5 15.6	Cumulative % Retained 0.0 0.0 0.0 5.0 29.5 40.0 55.6	aggregate is used.
#100 LBW Production G Coarsene	radation ss Factor: 45, 44 45, 33	1.2 1.1) Batch Plant Gra 60 52, 41 52, 34	1 1 1 1 1 1 1 1 1 1 1 1 1 1	.5 .3 regate Supplier Gra kability Factor:	6.2 0.8 Idations JMF Zone 8 75, 39	3.2 1.0 Adjusted WF	7.8 2.2 Initial Producti Coars Work Sieve 2" 1.5" 1.5" 1.5" 1.5" 3/4" 1/2" 3/8" #4 #8	96.8 99.0 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0 95.0 70.5 60.0 44.4 35.5	a 1.5" max. siz 62 35 % Retained 0.0 0.0 0.0 0.0 5.0 24.5 10.5 15.6 9.0	Cumulative % Retained 0.0 0.0 0.0 5.0 29.5 40.0 55.6 64.5	aggregate is used.
#100 LBW Production G Coarsene	radation ss Factor: 45, 44 45, 33 Operating Zone	1.2 1.1) Batch Plant Gra 60 52, 41 52, 34	1 1 1 1 1 1 1 1 1 1 1 1 1 1	5 3 regate Supplier Gra cability Factor: 67, 39 68, 3 uction Gradation PS	6.2 0.8 Idations 34 JMF Zone 8 75, 39	3.2 1.0 Adjusted WF	7.8 2.2 Initial Producti Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	96.8 99.0 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0 95.0 70.5 60.0 44.4 35.5 28.5	a 1.5" max. siz 62 35 % Retained 0.0 0.0 0.0 0.0 0.0 24.5 10.5 15.6 9.0 7.0	Cumulative % Retained 0.0 0.0 0.0 5.0 29.5 40.0 55.6 64.5 71.5	aggregate is used.
Norkability Factor (%)	radation ss Factor: 45, 44 45, 33	1.2 1.1) Batch Plant Gra 60 52, 41 52, 34	1 1 1 1 1 1 1 1 1 1 1 1 1 1	5 3 regate Supplier Gra cability Factor: 67, 39 68, 3 uction Gradation PS	6.2 0.8 Idations JMF Zone 8 75, 39	3.2 1.0 Adjusted WF	7.8 2.2 Initial Producti Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	96.8 99.0 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0 95.0 70.5 60.0 44.4 35.5 28.5 21.5	a 1.5" max. siz 62 35 % Retained 0.0 0.0 0.0 0.0 5.0 24.5 10.5 15.6 9.0 7.0 7.0	Cumulative % Retained 0.0 0.0 0.0 5.0 29.5 40.0 55.6 64.5 71.5 78.5	aggregate is used.
400 LBW Production G Coarsene 45 40 40 40 40 40 40 40 40 40 40 40 40 40	radation ss Factor: 45, 44 45, 33 Operating Zone	1.2 1.1) Batch Plant Gra 60 52, 41 52, 34	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5 3 regate Supplier Gra cability Factor: 67, 39 68, 3 uction Gradation FS	6.2 0.8 Idations 34 JMF Zone 8 75, 39 11 75, 28	3.2 1.0 Adjusted WF	7.8 2.2 Initial Producti Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	96.8 99.0 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0 95.0 70.5 60.0 44.4 35.5 28.5	a 1.5" max. siz 62 35 % Retained 0.0 0.0 0.0 0.0 0.0 24.5 10.5 15.6 9.0 7.0	Cumulative % Retained 0.0 0.0 0.0 5.0 29.5 40.0 55.6 64.5 71.5	aggregate is used.

Approved By: Mary 1. Ball

PLANT i	#:	P-102					Contractor:				
Sample Date	e:	12/4/23		C	oncrete Grade	DM, 4500HP					
Dates Test R	Represents:	12/5/2023	through	12/11/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	58-003	Stoneco	1450	8.64	2.69	49.2					
26A	58-003	Stoneco	350	2.09	2.69	11.9					
2NS	81-019	Pleasant Lake		6.95	2.65	39.0				SUP	ERIOR
		Total Wt	2950	17.68		100.0	< Verify this n	umber is 100%		MATE	RIALS
Sieve		6AA	26	Α	2NS	Cumulative % Passing	% Retained	Cumulative % Retained			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	100		100.0	100.0	0.0	0.0		Farmingto	n Hills, MI 48336
1"		100.0	10	0.0	100.0	100.0	0.0	0.0			
3/4"		79.0	100).0	100.0	89.7	10.3	10.3	-		
1/2"		38.5	98	.2	100.0	69.6	20.1	30.4			
3/8"		14.9	89		100.0	56.9	12.6	43.1	*Maximum % Retained must be above the 3/8" sieve		
#4		2.4	10		98.6	40.9	16.1	59.1	*Any two adja	cent sieves must e	qual 10% except max.
#8		1.4	4.	-	86.6	34.9	5.9	65.1		00 and #200 sieves	
#16		1.3	2.		69.0	27.8	7.1	72.2			o for each sieve except
#30		1.2	2.		45.4	18.5	9.3	81.5	,	00 and #200 sieves	
#50 #100		1.1	2.		15.2	6.7	11.8 5.3	93.3			5 for the 3/4" sieve whe
LBW		<u>1.0</u> 0.8	1.		1.9 0.6	1.4 0.8	5.3 0.6	98.6 99.2	a 1.5" max. siz	e (nom. Max. 1.0")	aggregate is used.
roduction G	Gradation	Batch Plant Gra		regate Supplier Gra				on Sample (IPS	3)		
	ess Factor:	66	Work	ability Factor:	35	37.4		eness Factor:	-) 61		
				, , , , , , , , , , , , , , , , , , ,				ability Factor:	36		
45								Cumulative	%	Cumulative	
	45, 44				JMF Zone		Sieve	% Passing	Retained	% Retained	
		52, 41	40	67 40			2"	100.0	0.0	0.0	
a ⁴⁰		- 36			75, 39		1.5"	100.0	0.0	0.0	
ల్				68, 38	Cradatio		1"	99.3	0.7	0.7	
ō			■ 601 136	•	Gradation		3/4"	89.2	10.1	10.8	
2 35 -			- 001100	!			1/2"	70.7	18.5	29.3	
Ë l		52, 34	i				3/8"	60.7	10.0	39.3	
~ .	45, 33	EF.					#4	44.4	16.3	55.6	
H	1		, 32	67, 32 68, 31			#8	35.9	8.5	64.1	
							#16	27.3	8.6	72.7	
⁰⁰	Operating Zone	e					#30	19.1	8.2	80.9	
Vorkabilit	Operating Zone Boundary	2			75, 28						
Worka		e			75, 28		#50	7.4	11.7	92.6	
Norkabilit		[•] 5055	5 60	Factor (%)	75, 28	80					

Approved By:

	#:	P-103	•	~			Contractor:				
Sample Date		12/4/23			oncrete Grade	DIVI, 4500HP	MDOTN				
Dates Test F	Represents:	12/5/2023	through	12/11/2023	Crassifia	0/	MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific	% Contribution					
6AA	58-003	Stoneco	1450	8.64	Gravity 2.69	49.2					
26A	58-003	Stoneco	350	2.09	2.69	11.9					
2NS	81-019	Pleasant Lake		6.95	2.65	39.0					
		Total Wt		17.68		100.0	< Verify this n	umber is 100%	-	MATE	ERIALS
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior I</u> 30701 W. 2	Materials, LLC 10 Mile Rd.
2"	1	100.0	100	0.0	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"		100.0	100		100.0	100.0	0.0	0.0			
3/4"		79.0	100		100.0	89.7	10.3	10.3			
1/2"		38.5	98		100.0	69.6	20.1	30.4			
3/8"		14.9	89	-	100.0	56.9	12.6	43.1			above the 3/8" sieve.
#4		2.4	10		98.6	40.9	16.1	59.1			qual 10% except max.
#8 #16		1.4 1.3	4.	-	86.6 69.0	34.9 27.8	5.9 7.1	65.1 72.2	,	00 and #200 sieves	
#16		1.2	2.		45.4	18.5	9.3	81.5			for each sieve except
#50		1.1	2.		15.2	6.7	11.8	93.3		00 and #200 sieves	o for the 3/4" sieve whe
#100		1.0	1.	-	1.9	1.4	5.3	98.6		e (nom. Max. 1.0")	
LBW		0.8	1.		0.6	0.8	0.6	99.2		- ()	-999
Production G	Fradation	O Batch Plant Gra	adations 💿 Age	regate Supplier Gra	dations	Adjusted WF	Intial Production	on Sample (IPS	5)		
	ess Factor:	66	Work	ability Factor:	35	37.4		eness Factor:	61		
eeureen								ability Factor:	36		
45										Cumulative	
-	45, 44				JMF Zone		Sieve	Cumulative	%	Cumulative % Retained	
-	45, 44	52, 41	40	67 40	JMF Zone					Cumulative % Retained 0.0	
40	45, 44	52, 41 	40	67.40	75, 39		Sieve	Cumulative % Passing 100.0 100.0	% Retained 0.0 0.0	% Retained 0.0 0.0	
40	45, 44	52, 41 56 ,	,40 I	68, 38	75, 39		Sieve 2" 1.5" 1"	Cumulative % Passing 100.0	% Retained 0.0 0.0 0.7	% Retained 0.0	
40	45, 44	52, 41 56 ,		Production	75, 39		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	
40	45, 44	52, 41 56 ,	• 60 3 6	Production	75, 39		Sieve 2" 1.5" 1" 3/4" 1/2"	Cumulative % Passing 100.0 99.3 89.2 70.7	% Retained 0.0 0.7 10.1 18.5	% Retained 0.0 0.0 0.7 10.8 29.3	
40	\rightarrow	52, 41 56 , 52, 34	• 60 3 §	Production	75, 39		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	
40	45, 44	52, 34		Production	75, 39		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 0.7 10.8 29.3 39.3 55.6	
40	\rightarrow	56,		Production	75, 39		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 0.7 10.1 18.5 10.0 16.3 8.5	% Retained 0.0 0.7 10.8 29.3 39.3 55.6 64.1	
40	45, 33 Operating Zone	52, 34 56,		Production	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 0.7 10.8 29.3 39.3 55.6 64.1 72.7	
40	45, 33	52, 34 56,		Production	75, 39		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 0.7 10.1 18.5 10.0 16.3 8.5 8.6 8.2	% Retained 0.0 0.7 10.8 29.3 39.3 55.6 64.1 72.7 80.9	
ility Factor (%)	45, 33 Operating Zone	52, 34 56,		Production	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 0.7 10.8 29.3 39.3 55.6 64.1 72.7	

Approved BY: Mary P. Bal

PLANT #	#:	12					Contractor:			-	
Sample Date):	12/4/23		C	oncrete Grade	DM, 4500HP	_				
Dates Test R	Represents:	12/5/2023	through	12/11/2023			MDOT No.:			_	
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	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				CUD	ERIOR
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%	-	MATE	RIALS
Sieve		6AA	26	Α	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior N</u> 30701 W. 1	Materials, LLC 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]	Farmington	n Hills, MI 48336
1"		97.3	100		100.0	98.7	1.3	1.3			
3/4"		78.2	100		100.0	89.1	9.5	10.9	1		
1/2"		34.5	95		100.0	66.8	22.3	33.2			
3/8"		17.5	84		100.0	57.2	9.6	42.8			above the 3/8" sieve.
#4		2.2	19		96.6	41.3	15.9	58.7	· ·		equal 10% except max.,
#8		1.4	3.		81.4	33.3	8.0	66.7		00 and #200 sieves	
#16		1.2	2.		66.1	27.0	6.3	73.0			6 for each sieve except
#30 #50		1.1 1.1	<u> </u>		50.4 27.1	20.7 11.4	6.3 9.2	79.3 88.6	· ·	00 and #200 sieves	
#30 #100		1.0	1.		6.0	3.0	9.2	97.0			6 for the 3/4" sieve whe
LBW		0.9	1.		1.2	1.1	2.0	98.9	a 1.5 max. siz	e (nom. Max. 1.0")	aggregate is used.
Production G		Batch Plant Grad		regate Supplier Gra		Adjusted WF		on Sample (IPS] 3)		
	ess Factor:	64		ability Factor:	33	35.8		eness Factor:	63	1	
45				,				ability Factor:			
_	45, 44				JMF Zone			Cumulative	%	Cumulative	
-		52, 41			31411 2011C		Sieve	% Passing	Retained	% Retained	
40			57,40	68, 40			2"	100.0	0.0	0.0	
%				68, 38	75, 39		1.5"	100.0	0.0	0.0	
				1			1"	99.3	0.7	0.7	
o 35			■ 60, 36	PS Production Grad	dation		3/4"	89.0	10.3	11.0	
L L L L		52, 34		Ì			1/2"	70.3	18.7	29.7	
2	45, 33	02, 04					3/8"	59.9	10.4	40.1	
			57, 22	688, 32			#4 #8	41.9 35.9	18.0	58.1	
Workability Factor (%)				30,01			#8 #16	35.9 27.8	6.0 8.2	64.1 72.2	
5	Operating Zone				75, 28		#16 #30	18.9	8.8	81.1	
	Boundary				. 0, 20		#30 #50	6.3	12.6	93.7	
25	45						#30	1.7	4.6	98.3	
40	45	<u> </u>	60 60	$-\frac{65}{100}$	75	80		1.7	7.0	00.0	

LBW

1.0

0.7

 $\frac{60}{\text{Coarseness Factor (\%)}^{65}}$

PREPARED BY: SM, LLC Technical Service

ActionLimits Boundary = - - - - -

Approved By: Mart 1. Ball

99.0

Sample Date		p11 12/4/23		c	`oncrete Grade	: DM, 4500HP	Contractor:			-	
Dates Test R		12/5/2023	through	12/11/2023		<u></u>	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				SUD	ERIOR
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%	_		ERIOR ERIALS
Sieve	1	6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained			Materials, LLC 10 Mile Rd.
2"	1	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	on Hills, MI 48336
1"		97.2	100		100.0	98.5	1.5	1.5			
3/4"		86.0	100		100.0	92.3	6.2	7.7			
1/2"		50.4	95		100.0	72.3	19.9	27.7			
3/8"		32.0	84		100.0	61.6	10.7	38.4	*Maximum %	Retained must be	above the 3/8" sieve.
#4		5.2	19	-	96.2	41.9	19.7	58.1	· · ·		equal 10% except max.,
#8		2.9	3.		86.1	35.9	6.1	64.1		00 and #200 sieves	
#16		2.6	2.		72.3	30.2	5.7	69.8			% for each sieve except
#30 #50		2.4	1.		52.9 25.8	22.4	7.8 10.8	77.6 88.4		00 and #200 sieves	
#50 #100		2.3	1. 1.		25.8	11.6 4.5	7.1	88.4 95.5			% for the 3/4" sieve when
LBW		1.8	1.		1.7	4.5	2.7	98.3	a 1.5 max. siz	e (nom. Max. 1.0)	aggregate is used.
Production G	radation	Batch Plant Gra		-				00.0			
				egate Supplier (4ra)			Intial Production	n Sample (IDS			
		0		egate Supplier Grad		,		on Sample (IPS	,	1	
Coarsene	ess Factor:	0		regate Supplier Grac ability Factor:	36	Adjusted WF	Coars	eness Factor:	62]	
Coarsene	ess Factor:	0			36	,	Coars Work	eness Factor: ability Factor:	62 36	Cumulative	1
Coarsene		60				,	Coars	eness Factor: ability Factor: Cumulative	62 36 %	Cumulative % Retained	1
Coarsene 45	ess Factor:	0			36	,	Coars Work Sieve	eness Factor: ability Factor:	62 36	Cumulative % Retained 0.0	
Coarsene	ess Factor:	60	Work	ability Factor:	36	,	Coars Work	eness Factor: ability Factor: Cumulative % Passing	62 36 % Retained	% Retained	
Coarsene	ess Factor:	60	Work	ability Factor:	36 JMF Zone	,	Coars Work Sieve 2" 1.5" 1"	eness Factor: ability Factor: Cumulative % Passing 100.0	62 36 % Retained 0.0 0.0 0.0	% Retained 0.0 0.0 0.0	
Coarsene 45 40	ess Factor:	60	Work	tion Graduich ^{8, 38}	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	
Coarsene 45 40	ess Factor:	60 52, 41 52, 41 56	Work	tion Graduich ^{8, 38}	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	
Coarsene 45 40 40 35 35	ess Factor:	60	Work	tion Graduich ^{8, 38}	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 27.7 39.6	
Coarsene 45 40 40 35 35	ess Factor:	60 52, 41 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	
Coarsene 45 40 40 35 35	ess Factor:	60 52, 41 52, 41 56	Work	tion Graduich ^{8, 38}	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 5.0 27.7 39.6 57.4 64.0	
Coarsene 45 40 40 35 35	45, 44 45, 33 Operating Zone	60 52, 41 52, 34 52, 34	Work	67, 40	36 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	
Coarsene 45 40 40 35 35	ess Factor:	60 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 #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 5.0 27.7 39.6 57.4 64.0 70.5 79.7	
(%) 40 45 45 40 35 35 30 30	45, 44 45, 33 Operating Zone	60 52, 41 52, 34 52, 34	Work	67, 40	36 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	

PREPARED BY: SM, LLC Technical Service

Approved By:

Mary 1. Ball

PLANT :		P-32	-				Contractor:				
Sample Date		12/4/23	-		Concrete Grade	DM, 4500HP					
Dates Test R	Represents:	12/5/2023	through	12/11/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific	%					
6AA	71-47	Presque Isle	1605	9.82	Gravity 2.62	Contribution 55.2					
26A	71-47	Presque Isle	150	0.92	2.62	5.2					
20/1 2NS	95-013	Smelter Bay	1150	6.95	2.65	39.6					
2.10	00 0.0	Total Wt		17.69		100.0	< Verify this n	umber is 100%		SUP	ERIALS
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained			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		Farmingto	n Hills, MI 48336
1"		97.2	10		100.0	98.5	1.5	1.5	-		
3/4" 1/2"		86.0	10		100.0 100.0	92.3	6.2	7.7 27.7			
3/8"		50.4 32.0	95		100.0	72.3 61.6	19.9 10.7	38.4	*• 4	Detained access to a	-h
3/0 #4		5.2	19		96.2	41.9	10.7	58.1			above the 3/8" sieve. equal 10% except max.,
#4		2.9	3		86.1	35.9	6.1	64.1		0 and #200 sieves	
#16		2.6	2		72.3	30.2	5.7	69.8			, 6 for each sieve except
#30		2.4	1.		52.9	22.4	7.8	77.6		00 and #200 sieves	•
#50		2.3	1.	6	25.8	11.6	10.8	88.4	*% Retained	must be at least 4%	6 for the 3/4" sieve whe
#100		2.2	1.		8.0	4.5	7.1	95.5	a 1.5" max. siz	e (nom. Max. 1.0")	aggregate is used.
LBW		1.8	1.	3	1.7	1.7	2.7	98.3			
Production G	Gradation	O Batch Plant Gra	adations 💿 Agg	regate Supplier Gra	dations	Adjusted WF	Intial Production	on Sample (IPS	5)		
Coarsene	ess Factor:	60	Work	ability Factor:	36	38.4	Coars	eness Factor:	62		
45			-		-		Work	ability Factor:	36		
45	45, 44				JMF Zone		Sieve	Cumulative	%	Cumulative	
1	45, 44							% Passing	Retained	% Retained	
40		52, 41 5	6. 40	67, 40			2"	100.0	0.0	0.0	
इ ⁴⁰				tion Gradation ^{8, 38}	75, 39		1.5"	100.0	0.0	0.0	
Ĵ,			Produc				1" 3/4"	100.0 95.0	0.0 5.0	0.0 5.0	
5 ar 1			■ 60,38E	s 🍴			3/4 1/2"	95.0 72.3	22.8	27.7	
Factor (%)	\rightarrow		!	i			3/8"	60.4	11.8	39.6	
	45, 33	52, 34					#4	42.6	17.8	57.4	
Workability		50), 32	67 _{68,31}			#8	36.0	6.6	64.0	
	Operating Zone	7		55, 61			#16	29.5	6.5	70.5	
<u></u>	Boundary				75, 28		#30	20.3	9.2	79.7	
							#50	9.5	10.8	90.5	
							#100	3.4	6.1	96.6	
≥ _25 40	45	50 55	5 60	Factor (%)	75	80	LBW	1.3	2.1	98.7	

Approved By:

PLANT :		P-35		-			Contractor:				
Sample Date		12/4/23			oncrete Grade	: DM, 4500HP					
Dates Test R	epresents:	12/5/2023	through	12/11/2023	Specific	%	MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	70 Contribution					
6AA	58-003	Stoneco	1450	8.64	2.69	49.2					
26A	58-003	Stoneco	350	2.09	2.69	11.9					
2NS	81-019	Pleasant Lake	1150	6.95	2.65	39.0				SUP	FRIOR
		Total Wt	2950	17.68		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	Materials, LLC L0 Mile Rd.
2"	,	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"		00.0	100	-	100.0	100.0	0.0	0.0			
3/4"		79.0	100	-	100.0	89.7	10.3	10.3			
1/2"		38.5	98		100.0	69.6	20.1	30.4	*** *		1 JL 0/0"
3/8" #4		14.9 2.4	89 10		100.0 98.6	56.9 40.9	12.6 16.1	43.1 59.1			above the 3/8" sieve.
#4 #8		1.4	4.		86.6	34.9	5.9	65.1		00 and #200 sieves	qual 10% except max.,
#0 #16		1.3	4.		69.0	27.8	7.1	72.2			for each sieve except
#10		1.2	2.		45.4	18.5	9.3	81.5		00 and #200 sieves	
#50		1.1	2.		15.2	6.7	11.8	93.3			for the 3/4" sieve whe
#100		1.0	1.		1.9	1.4	5.3	98.6		e (nom. Max. 1.0")	
LBW		0.8	1.	7	0.6	0.8	0.6	99.2		· · · ·	
Production G	Gradation	O Batch Plant Gra	dations 💿 Aggi	egate Supplier Grad	dations	Adjusted WF	Intial Production	on Sample (IPS	- 		
	ess Factor:	66	Work	ability Factor:	35	37.4		eness Factor:	, 61		
				,				ability Factor:	36		
45					<u> </u>			Cumulative	%	Cumulative	
- "	45, 44				JMF Zone		Sieve	% Passing	Retained	% Retained	
1		52, 41					2"	100.0	0.0	0.0	
		56,			75, 39		1.5"	100.0	0.0	0.0	
a ⁴⁰				68, 38	Gradatio		1"	99.3	0.7	0.7	
% ⁴⁰			■ 60, ₁ 36		TOTAGATION		3/4"	89.1	10.2	10.9	
tor (%)		1	• ···/PS				1/2"	70.5	18.6	29.5	
actor (%)							3/8"	60.5	10.0	39.5	
y Factor (%)		52, 34							40.4		
lity Factor (%)	45, 33						#4	44.1	16.4	55.9	
ability Factor (%) 00 01 02 02 04 04 04 04 04 04 04 04 04 04		56,	1 1 31	67, 88 , 31			#4 #8	44.1 35.6	8.5	64.4	
nrkability Factor (%) 00 05 25 04	Operating Zone	56,	31	67, 88 , 31			#4 #8 #16	44.1 35.6 27.7	8.5 7.9	64.4 72.3	
Norkability Factor (%)		56,	31	67, 89, 31	75, 28		#4 #8 #16 #30	44.1 35.6 27.7 20.6	8.5 7.9 7.1	64.4 72.3 79.4	
ability Factor (%)	Operating Zone	56,		67, 84 31 Factor (%)	75, 28		#4 #8 #16	44.1 35.6 27.7	8.5 7.9	64.4 72.3	

Approved By: Mary 1. Ball

PLANT #	F:	P-36					Contractor:				
Sample Date:	:	12/4/23	<u>.</u>	C	oncrete Grade	: DM, 4500HP					
Dates Test R	epresents:	12/5/2023	through	12/11/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	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	63-92	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	(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	100	0.0	100.0	100.0	0.0	0.0		Suite 500	
1.5"		00.0		0.0	100.0	100.0	0.0	0.0		Farmingtor	n Hills, MI 48336
1"		97.3	10	0.0	100.0	98.7	1.3	1.3			
3/4"		78.2		0.0	100.0	89.1	9.5	10.9			
1/2"		34.5	95		100.0	66.8	22.3	33.2			
3/8"		17.5	84	-	100.0	57.2	9.6	42.8	*Maximum %	Retained must be a	above the 3/8" sieve.
#4		2.2		9.0	97.2	41.6	15.7	58.4			qual 10% except max.
#8		1.4	3.		83.9	34.3	7.3	65.7		00 and #200 sieves.	
#16		1.2		.0	69.1	28.2	6.1	71.8			for each sieve except
#30 #50		1.1 1.1	1.		49.9 20.0	20.5 8.6	7.7 11.8	79.5 91.4		00 and #200 sieves.	
#30		<u>1.1</u> 1.0	1.		3.5	2.0	6.6	91.4			o for the 3/4" sieve whe
LBW		0.9		.3	0.8	0.9	1.1	99.1	a 1.5 max. siz	e (nom. Max. 1.0") a	aggregate is used.
Production G		Batch Plant Gra		regate Supplier Grad				on Sample (IPS	S)		
	radalion								1		
	addation		Work	ability Factor:	34	36.8	Coars	eness Factor:	63		
	ss Factor:	65	Work	ability Factor:	34	36.8		eness Factor: ability Factor:	63 35		
Coarsene	ss Factor:		Work	ability Factor:		36.8	Work	eness Factor: ability Factor: Cumulative	35	Cumulative	
	addation		Work	ability Factor:	34 JMF Zone	36.8		ability Factor:		Cumulative % Retained	
	ss Factor:		Work	cability Factor:		36.8	Work Sieve 2"	ability Factor: Cumulative % Passing 100.0	35 % Retained 0.0		
45 40 40	ss Factor:	65	Work			36.8	Work Sieve 2" 1.5"	ability Factor: Cumulative % Passing 100.0 100.0	35 % Retained 0.0 0.0	% Retained 0.0 0.0	
45 4 40	ss Factor:	65		Rability Factor:	JMF Zone	36.8	Works Sieve 2" 1.5" 1"	ability Factor: Cumulative % Passing 100.0 100.0 99.1	35 % Retained 0.0 0.0 0.0 0.9	% Retained 0.0 0.0 0.9	
Coarsene	ss Factor:	65	58, 39	68, 38	JMF Zone	36.8	Works Sieve 2" 1.5" 1" 3/4"	ability Factor: Cumulative % Passing 100.0 100.0 99.1 90.3	35 % Retained 0.0 0.0 0.9 8.8	% Retained 0.0 0.0 0.9 9.7	
Coarsene	ss Factor:	65		68, 38	JMF Zone	36.8	Works 2" 1.5" 1" 3/4" 1/2"	ability Factor: Cumulative % Passing 100.0 100.0 99.1 90.3 69.2	35 % Retained 0.0 0.0 0.9 8.8 21.1	% Retained 0.0 0.0 0.9 9.7 30.8	
Coarsene	ss Factor:	65	58, 39	68, 38	JMF Zone	36.8	Works 2" 1.5" 1" 3/4" 1/2" 3/8"	ability Factor: Cumulative % Passing 100.0 100.0 99.1 90.3 69.2 59.1	35 % Retained 0.0 0.0 0.9 8.8 21.1 10.1	% Retained 0.0 0.9 9.7 30.8 40.9	
Coarsene	ss Factor:	65	58, 39	68, 38	JMF Zone	36.8	Works 2" 1.5" 1" 3/4" 1/2" 3/8" #4	ability Factor: Cumulative % Passing 100.0 100.0 99.1 90.3 69.2 59.1 41.8	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	
Coarsene	5, 44	65	58, 39	68, 38	JMF Zone 75, 39 radation	36.8	Works 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8	ability Factor: Cumulative % Passing 100.0 100.0 99.1 90.3 69.2 59.1 41.8 35.1	35 % Retained 0.0 0.0 0.9 8.8 21.1 10.1 17.3 6.6	% Retained 0.0 0.0 0.9 9.7 30.8 40.9 58.2 64.9	
Coarsene	5, 44 45, 33 Operating Zone	65	58, 39 60, 36	Production G	JMF Zone 75, 39 radation	36.8	Works 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	ability Factor: Cumulative % Passing 100.0 100.0 99.1 90.3 69.2 59.1 41.8 35.1 28.5	35 % Retained 0.0 0.0 0.9 8.8 21.1 10.1 17.3 6.6 6.6	% Retained 0.0 0.0 0.9 9.7 30.8 40.9 58.2 64.9 71.5	
Coarsene	5, 44 (45, 33	65	58, 39 60, 36	Production G	JMF Zone 75, 39 radation	36.8	Works 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	ability Factor: Cumulative % Passing 100.0 100.0 99.1 90.3 69.2 59.1 41.8 35.1 28.5 21.2	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 0.0 0.9 9.7 30.8 40.9 58.2 64.9 71.5 78.8	
Coarsene	5, 44 45, 33 Operating Zone	65	58, 39 60, 36	Production G	JMF Zone 75, 39 radation	36.8	Works 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	ability Factor: Cumulative % Passing 100.0 100.0 99.1 90.3 69.2 59.1 41.8 35.1 28.5	35 % Retained 0.0 0.0 0.9 8.8 21.1 10.1 17.3 6.6 6.6	% Retained 0.0 0.0 0.9 9.7 30.8 40.9 58.2 64.9 71.5	

Approved By: Mary 1. Ball

PLANT :		P-39					Contractor:				
Sample Date		12/4/23		C	concrete Grade	: DM, 4500HP					
Dates Test R	epresents:	12/5/2023	through	12/11/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	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		Superior I 30701 W. 2	<u>Materials, LLC</u> 10 Mile Rd.
2"	1	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"		100.0	100		100.0	100.0	0.0	0.0			
3/4"		88.3	100		100.0	93.9	6.1	6.1			
1/2"		43.8	96		100.0	70.6	23.4	29.4			
3/8"		24.1	86		100.0	59.3	11.2	40.7			above the 3/8" sieve.
#4		2.8	20		99.4	41.2	18.1	58.8	· · ·		qual 10% except max.,
#8 #16		1.5 1.3	4.		83.5 67.1	32.8 26.3	8.3 6.5	67.2 73.7		00 and #200 sieves	
#16 #30		1.3	2.		47.6	26.3 18.9	6.5 7.4	73.7 81.1			for each sieve except
#50		1.3	1.		21.4	8.9	9.9	91.1		00 and #200 sieves	for the 3/4" sieve whe
#100		1.2	1.		4.6	2.5	6.4	97.5		e (nom. Max. 1.0")	
LBW		1.1	1.		0.3	0.8	1.7	99.2			aggrogato to accar
Production G	Fradation	O Batch Plant Gra	dations 💿 Agg	regate Supplier Gra	dations	Adjusted WF	Intial Production	on Sample (IPS	S)		
Coarsene	ess Factor:	61	Work	ability Factor:	33	35.3	Coars	eness Factor:	63		
		-						ability Factor:	36		
45	-				[Cumulative	%	Cumulative	
_ 4	45, 44				JMF Zone		Sieve	% Passing	Retained	% Retained	
1		52, 41					2"	100.0	0.0	0.0	
a ⁴⁰			- 58, 40		75, 39		1.5"	100.0	0.0	0.0	
<u>ව</u>			i	68, 38	Ĩ		1"	100.0	0.0	0.0	
j l			I ■ 60 36				3/4"	89.7	10.3	10.3	
			Produ	ictRon Gradation			1/2"	70.3	19.4	29.7	
26 35 -		52, 34					3/8"	59.1	11.2	40.9	
							#4	42.8	16.3	57.2	
ity Fact	45, 33		30, 22	688883	2		#8	35.5	7.3	64.5	
10 205 - 25 0 - 05 0 - 05 0 0 - 05 0 - 05 0 0 - 05 0 0 0 - 05 0 0 0 0 - 05 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	45, 33	_		00,01			#16	29.0	6.5	71.0	
rkability Fact	45, 33 Operating Zone			00,01						-	
Vorkability Fact		:		00,01	75, 28		#30	21.2	7.7	78.8	
Workability Fa	Operating Zone	·			75, 28		#30 #50	21.2 9.8	7.7 11.5	78.8 90.2	
Norkability Factors	Operating Zone	50 55	60	Factor (%) ⁷⁰	75, 28	80	#30	21.2	7.7	78.8	

Approved By: Mary 1. Ball

PLANT		P-O2					Contractor:				
Sample Date	e:	12/4/23		C	oncrete Grade	: DM, 4500HP					
Dates Test F	Represents:	12/5/2023	through	12/11/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	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				CUD	ERIOR
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%	1	MATE	RIALS
Sieve	(6 AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		Superior 30701 W. 1	Materials, LLC
2"	1	00.0	10	0	100.0	100.0	0.0	0.0		Suite 500	
1.5"		00.0	10		100.0	100.0	0.0	0.0		Farmingto	n Hills, MI 48336
1"		97.3	10		100.0	98.7	1.3	1.3			
3/4"	-	78.2	10	0.0	100.0	89.1	9.5	10.9			
1/2"		34.5	95	.2	100.0	66.8	22.3	33.2			
3/8"		17.5	84	.8	100.0	57.2	9.6	42.8	*Maximum %	Retained must be	above the 3/8" sieve.
#4		2.2	19		96.6	41.3	15.9	58.7	*Any two adja	cent sieves must e	qual 10% except max.,
#8		1.4	3		81.4	33.3	8.0	66.7		00 and #200 sieves	
#16		1.2	2		66.1	27.0	6.3	73.0			o for each sieve except
#30		1.1	1.		50.4	20.7	6.3	79.3		00 and #200 sieves	
#50 #100		<u>1.1</u> 1.0	1.	-	27.1 6.0	11.4 3.0	9.2 8.4	88.6 97.0			5 for the 3/4" sieve whe
LBW		0.9	1		6.0 1.2	3.0	2.0	97.0	a 1.5" max. siz	e (nom. Max. 1.0")	aggregate is used.
Production G		Batch Plant Gra		regate SupplierGrad				on Sample (IPS	2)		
	ess Factor:	64		ability Factor:	33	35.8		eness Factor:	63	1	
Coarsen		04	WOIR	ability Factor.	33	35.0		ability Factor:	35		
⁴⁵ T	•						WORK	Cumulative	 %	Cumulative	
	45, 44				JMF Zone		Sieve	% Passing	Retained	% Retained	
1		52, 41					2"	100.0	0.0	0.0	
~ ⁴⁰			58.39	68, 39	75, 39		1.5"	100.0	0.0	0.0	
లి 1				68, 38			1"	100.0	0.0	0.0	
۲ ۲					1.0		3/4"	95.1	4.9	4.9	
ž 35			- 00, 30	Production Grad	ation		1/2"	74.6	20.5	25.4	
й į	\rightarrow	52, 34	—i	i			3/8"	59.3	15.3	40.7	
l It	45, 33						#4	42.1	17.2	57.9	
ig 30			58, 31	6 8 8,331			#8	35.1	7.1	64.9	
10 I	Operating Zone						#16	29.2	5.9	70.8	
논]	Boundary				75, 28		#30	21.9	7.3	78.1	
Vork							#50	9.6	12.4	90.4	
No.							#100		70	076	
25 40	45	50 55	5 60	Factor (%)	75	80	#100 LBW	2.4 0.9	7.2 1.5	97.6 99.1	

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