Production Gradation Report

									•		Gradation Repu
PLANT a	#:	P-101	_				Contractor:			_	
Sample Date):	10/16/23		С	oncrete Grade	: DM, 4500HP					
Dates Test R	Represents:	10/17/2023	through	10/23/2023			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%	1		RIALS
Sieve		6 AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior I</u> 30701 W. 1	<u>Materials, LLC</u> 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	1	Farmingtor	n Hills, MI 48336
1"	1	00.0	100).0	100.0	100.0	0.0	0.0	1		
3/4"		85.0	100		100.0	92.5	7.5	7.5			
1/2"		39.1	96		100.0	69.1	23.4	30.9			
3/8"		23.5	85		100.0	60.3	8.9	39.7	*Maximum %	Retained must be a	above the 3/8" sieve.
#4		3.7	20		96.0	42.0	18.3	58.0	· · ·		qual 10% except max.,
#8		2.3	5.		80.5	33.6	8.4	66.4		00 and #200 sieves.	
#16		2.1	2.		65.7	27.4	6.2	72.6			for each sieve except m
#30 #50		2.0 1.9	1.		51.1 26.6	21.5 11.7	5.9 9.8	78.5 88.3	· · · · ·	00 and #200 sieves.	
#50 #100		1.9	1.		6.9	3.9	9.0 7.8	96.1		e (nom. Max. 1.0") a	for the 3/4" sieve when
LBW		1.6	1.		1.0	1.3	2.5	98.7	a 1.5 max. siz	3 (10111. Max. 1.0) a	aggregate is used.
Production G	Gradation	Batch Plant Gra		regate Supplier Grad	-	-		on Sample (IPS	∎ S)		
Coarsene	ess Factor:	60	Work	ability Factor:	34	, 36.1		eness Factor:	62		
45							Work	ability Factor:	35		
		_						ability Factor:	35 %	Cumulative	
-	45, 44				JMF Zone		Work Sieve	Cumulative	%	Cumulative % Retained	
	45, 44	52, 41			JMF Zone			-		Cumulative % Retained 0.0	
e ⁴⁰	45, 44	52, 41	57, 39	67, 39	75. 39		Sieve	Cumulative % Passing	% Retained	% Retained	
40 (%)	45, 44	52, 41	57, 39	68, 38	75. 39		Sieve 2"	Cumulative % Passing 100.0	% Retained 0.0	% Retained 0.0	
tor (%)	45, 44	52, 41	57, <u>39</u>		75. 39		Sieve 2" 1.5"	Cumulative % Passing 100.0 100.0 100.0 95.0	% Retained 0.0 0.0 0.0 5.0	% Retained 0.0 0.0 0.0 5.0	
actor (%)	45, 44	52, 41	57, <u>39</u>	68, 38	75. 39		Sieve 2" 1.5" 1"	Cumulative % Passing 100.0 100.0 100.0 95.0 70.5	% Retained 0.0 0.0 0.0 5.0 24.5	% Retained 0.0 0.0 0.0	
/ Factor (%)	\rightarrow	52, 41	57, 39		75. 39		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8"	Cumulative % Passing 100.0 100.0 100.0 95.0 70.5 60.0	% Retained 0.0 0.0 5.0 24.5 10.5	% Retained 0.0 0.0 0.0 5.0 29.5 40.0	
lity Factor (%)	45, 44		57, 39	etion Gradation	75, 39		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4	Cumulative % Passing 100.0 100.0 95.0 70.5 60.0 44.4	% Retained 0.0 0.0 5.0 24.5 10.5 15.6	% Retained 0.0 0.0 5.0 29.5 40.0 55.6	
ability Factor (%)	\rightarrow		57, 39		75, 39		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8	Cumulative % Passing 100.0 100.0 95.0 70.5 60.0 44.4 35.5	% Retained 0.0 0.0 0.0 5.0 24.5 10.5 15.6 9.0	% Retained 0.0 0.0 0.0 29.5 40.0 55.6 64.5	
rkability Factor (%)	\rightarrow	52, 34	57, 39	etion Gradation	1		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	Cumulative % Passing 100.0 100.0 95.0 70.5 60.0 44.4 35.5 28.5	% Retained 0.0 0.0 0.0 24.5 10.5 15.6 9.0 7.0	% Retained 0.0 0.0 0.0 29.5 40.0 55.6 64.5 71.5	
Vorkability Factor (%)	45, 33	52, 34	57, 39	etion Gradation	75, 39		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	Cumulative % Passing 100.0 100.0 95.0 70.5 60.0 44.4 35.5 28.5 21.5	% Retained 0.0 0.0 0.0 24.5 10.5 15.6 9.0 7.0 7.0	% Retained 0.0 0.0 0.0 29.5 40.0 55.6 64.5 71.5 78.5	
lity Factor (%)	45, 33 Operating Zone	52, 34	57, 39	etion Gradation	1		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30 #50	Cumulative % Passing 100.0 100.0 95.0 70.5 60.0 44.4 35.5 28.5 28.5 21.5 10.2	% Retained 0.0 0.0 0.0 5.0 24.5 10.5 15.6 9.0 7.0 7.0 11.3	% Retained 0.0 0.0 0.0 29.5 40.0 55.6 64.5 71.5 78.5 89.8	
Workability Factor (%)	45, 33 Operating Zone	52, 34	57, 31	etion Gradation	75, 39 1 75, 28		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	Cumulative % Passing 100.0 100.0 95.0 70.5 60.0 44.4 35.5 28.5 21.5	% Retained 0.0 0.0 0.0 24.5 10.5 15.6 9.0 7.0 7.0	% Retained 0.0 0.0 0.0 29.5 40.0 55.6 64.5 71.5 78.5	

Approved By: Mart 1. Ball

PLANT #	#:	P-102					Contractor:				
Sample Date		10/16/23		C	concrete Grade:	DM, 4500HP					
Dates Test R	epresents:	10/17/2023	through	10/23/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	58-003	Stoneco	1500	8.94	2.69	50.8					
26A	58-003	Stoneco	300	1.79	2.69	10.2					
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. 1	Materials, LLC
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			n Hills, MI 48336
1"		00.0	100		100.0	100.0	0.0	0.0		C	
3/4"		87.9	100		100.0	93.8	6.2	6.2			
1/2"	4	49.5	100		100.0	74.3	19.5	25.7			
3/8"		22.6	83	.2	100.0	58.9	15.4	41.1	*Maximum %	Retained must be a	above the 3/8" sieve.
#4		3.2	8.	.5	98.9	41.0	17.9	59.0	*Any two adja	cent sieves must e	qual 10% except max.,
#8		1.8	3.	.1	86.4	34.9	6.1	65.1	nom. max., #10	00 and #200 sieves.	
#16		1.4	2.		68.4	27.6	7.3	72.4	*% Retained	must be at least 4%	for each sieve except
#30		1.0	2.		47.6	19.3	8.4	80.7	,	00 and #200 sieves	
#50		0.8	2.		23.0	9.6	9.7	90.4			o for the 3/4" sieve when
#100 LBW		0.8 1.1	2.		4.4	2.3 0.9	7.3 1.4	97.7 99.1	a 1.5" max. siz	e (nom. Max. 1.0") a	aggregate is used.
LDVV		1.1		-							
		○ - · · · ·			dations						
Production G	radation	O Batch Plant Gra	dations (Agg	regate Supplier Grad	uations	Adjusted WF	Intial Production	on Sample (IPS	5)		
	radation ss Factor:	 Batch Plant Gra 63 		regate Supplier Grad	35	Adjusted WF 37.4		on Sample (IPS eness Factor:	S) 61		
Coarsene							Coars				
Coarsene	ess Factor:				35		Coars Work	eness Factor:	61	Cumulative	
Coarsene		63					Coars Work Sieve	eness Factor: ability Factor: Cumulative % Passing	61 36 % Retained	% Retained	
Coarsene	ess Factor:				35		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:	63			35		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:	63	Work	sability Factor:	35 JMF Zone 75, 39		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:	63	Work	cability Factor:	35 JMF Zone 75, 39		Coars Work Sieve 2" 1.5" 1" 3/4"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.2	61 36 % Retained 0.0 0.0 0.7 10.1	% Retained 0.0 0.0 0.7 10.8	
45 40 40	ess Factor:	63	Work	cability Factor:	35 JMF Zone 75, 39		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.2 70.7	61 36 % Retained 0.0 0.0 0.7 10.1 18.5	% Retained 0.0 0.0 0.7 10.8 29.3	
45 40 40	PSS Factor:	63	Work	cability Factor:	35 JMF Zone 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 99.3 89.2 70.7 60.7	61 36 % Retained 0.0 0.0 0.7 10.1 18.5 10.0	% Retained 0.0 0.7 10.8 29.3 39.3	
45 40 40	ess Factor:	63	Work	c7 40 Production Gradat	35 JMF Zone 75, 39		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 89.2 70.7 60.7 44.4	61 36 % Retained 0.0 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	
45 40 40	45, 33	63 52, 41 52, 34 52, 34 56,	Work	cability Factor:	35 JMF Zone 75, 39		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 89.2 70.7 60.7 44.4 35.9	61 36 % <u>Retained</u> 0.0 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	
45 40 40	15, 44 45, 33 Operating Zone	63 52, 41 52, 34 52, 34 56,	Work	c7 40 Production Gradat	35 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 99.3 89.2 70.7 60.7 44.4 35.9 27.3	61 36 % Retained 0.0 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	
ability Factor (%)	45, 33	63 52, 41 52, 34 52, 34 56,	Work	c7 40 Production Gradat	35 JMF Zone 75, 39		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 89.2 70.7 60.7 44.4 35.9 27.3 19.1	61 36 % <u>Retained</u> 0.0 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	
	15, 44 45, 33 Operating Zone	63 52, 41 52, 34 52, 34 56,	Work	c7 40 Production Gradat	35 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 99.3 89.2 70.7 60.7 44.4 35.9 27.3	61 36 % Retained 0.0 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:

PLANT #	#:	P-103					Contractor:				
Sample Date	#]	10/16/23	-	C	concrete Grade	DM, 4500HP					
Dates Test R	epresents:	10/17/2023	through	10/23/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific	%					
6AA	58-003	Stoneco	1500	8.94	Gravity 2.69	Contribution 50.8					
26A	58-003	Stoneco	300	1.79	2.69	10.2					
20A 2NS	81-019	Pleasant Lake		6.95	2.65	39.0					
2110	01010	Total Wt		17.68	2.00	100.0	< Verify this n	umber is 100%	_	SUP	ERIOR
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained			Materials, LLC 10 Mile Rd.
2"	1	100.0	100		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"		87.9	100		100.0	93.8	6.2	6.2			
1/2"		49.5	100		100.0	74.3	19.5	25.7			
3/8"		22.6	83		100.0	58.9	15.4	41.1			above the 3/8" sieve.
#4 #8		3.2	8.		98.9	41.0 34.9	17.9	59.0			qual 10% except max.,
#8 #16		1.8 1.4	3.		86.4 68.4	27.6	6.1 7.3	65.1 72.4	-	00 and #200 sieves	
#10		1.0	2.	-	47.6	19.3	8.4	80.7		must be at least 4% 00 and #200 sieves	for each sieve except
#50 #50		0.8	2.		23.0	9.6	9.7	90.4	-		5 for the 3/4" sieve whe
#100		0.8	2.		4.4	2.3	7.3	97.7		e (nom. Max. 1.0")	
LBW		1.1	2.		0.4	0.9	1.4	99.1		- (
Production G	adation	O Batch Plant Gra	adations 💿 Agg	regate Supplier Gra	dations	Adjusted WF	Intial Production	on Sample (IPS	5)		
	ess Factor:	63	Work	ability Factor:	35	37.4		eness Factor:	-) 61		
					00			ability Factor:	36		
45								Cumulative	%	Cumulative	
4	45, 44				JMF Zone		Sieve	% Passing	Retained	% Retained	
		52, 41					2"	100.0	0.0	0.0	
• ⁴⁰		-56	40		75, 39		1.5"	100.0	0.0	0.0	
8				68, 38			1"	99.3	0.7	0.7	
2			•	Production Gradat	tion		3/4"	89.2	10.1	10.8	
t 35			■ 60 1 3§	i			1/2"	70.7	18.5	29.3	
Ц Ц	\rightarrow	52, 34	-				3/8"	60.7	10.0	39.3	
> 1	45, 33		L				#4	44.4	16.3	55.6	
£	1	56,	32	67, 32 , 31			#8	35.9	8.5	64.1	
bility							#16	27.3	8.6	72.7	
kability	Operating Zone	,			•		#30	19.1	8.2	80.9	
orkability	Operating Zone Boundary	2			75, 28						
Worka					75, 28		#50	7.4	11.7	92.6	
Norkability 25 40		50 55		65 Factor (%)	75, 28 75	80		7.4 1.9 0.7			

Approved BY: Mary P. Bal

PLANT :		14	1				Contractor:				
Sample Date	-	10/16/23		C	Concrete Grade:	DM, 4500HP					
Dates Test R	Represents:	10/17/2023	through	10/23/2023	-		MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution				57	
6AA	58-003	Stoneco	1500	8.94	2.69	50.7					
26A	58-003	Stoneco	360	2.14	2.69	12.2					
2NS	19-04	Schlegel	1100	6.60	2.67	37.2				BUI	I ders'
		Total Wt	2960	17.68		100.0	< Verify this n	umber is 100%	1		st With Builders'
Sieve	F	6AA	26	A	2NS	Cumulative	% Retained	Cumulative		<u>Builders R</u>	edi-Mix
						% Passing		% Retained		30701 W. 1	0 Mile Rd.
2"		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		Farmington	n Hills, MI 48336
1"		00.0	100		100.0	100.0	0.0	0.0			
3/4"	-	37.9	100		100.0	93.9	6.1	6.1			
1/2"		49.5	100		100.0	74.4	19.5	25.6			
3/8"		22.6	83		100.0	58.7	15.7	41.3			bove the 3/8" sieve.
#4 #8		3.2 1.8	8.	-	100.0 91.3	39.8 35.2	18.9 4.6	60.2 64.8			ual 10% except max.,
#0 #16		1.4	2.		71.5	27.6	7.6	72.4	· ·	00 and #200 sieves.	for each sieve except
#10		1.0	2.		47.5	18.4	9.2	81.6		00 and #200 sieves.	
#50 #50		0.8	2.		15.5	6.4	12.0	93.6			for the 3/4" sieve whe
#100		0.8	2.		2.5	1.6	4.8	98.4		e (nom. Max. 1.0") a	
LBW		1.1	2.	.0	0.3	0.9	0.7	99.1		· · · · ·	
Production G	Gradation	O Batch Plant Gra	dations 💿 Agg	regate Supplier Gra	dations	Adjusted WF	Intial Production	on Sample (IPS	5)		
Coarsene	ess Factor:	64	Work	ability Factor:	35	37.7	Coars	eness Factor:	63		
				ability i abtoil				0110001 40101.			
15							Work	ability Factor:	36		
45	15 //				IME Zone				36 %	Cumulative	
	45, 44				JMF Zone		Work Sieve	ability Factor:		Cumulative % Retained	
	45, 44	52, 41	57, 40	68, 40	JMF Zone	<u>ן</u>	Sieve 2"	ability Factor: Cumulative % Passing 100.0	% Retained 0.0	% Retained 0.0	
- 40	45, 44	52, 41	57, 40	68, 40	JMF Zone		Sieve 2" 1.5"	ability Factor: Cumulative % Passing 100.0 100.0	% Retained 0.0 0.0	% Retained 0.0 0.0	
- 40	45, 44	52, 41	1		75, 39		Sieve 2" 1.5" 1"	ability Factor: Cumulative % Passing 100.0 100.0 99.3	% Retained 0.0 0.0 0.7	% Retained 0.0 0.0 0.7	
40	45, 44	52, 41	1	68, 40	75, 39		Sieve 2" 1.5" 1" 3/4"	ability Factor: Cumulative % 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	45, 44			68, 40	75, 39		Sieve 2" 1.5" 1" 3/4" 1/2"	ability Factor: Cumulative % 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	
- 40		52, 41		68, 40	75, 39		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8"	ability Factor: Cumulative % 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	
40	45, 44			68, 40 68, 38 Production Grad	75, 39		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4	ability Factor: Cumulative % 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 18.0	% Retained 0.0 0.0 0.7 11.0 29.7 40.1 58.1	
- 40	45, 33	52, 34		68, 40	75, 39		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8	ability Factor: Cumulative % Passing 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 6.0	% Retained 0.0 0.7 11.0 29.7 40.1 58.1 64.1	
- 40	45, 33 Operating Zone	52, 34		68, 40 68, 38 Production Grad	75, 39		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	ability Factor: Cumulative % 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 (%) 00 01 02 02 02 04 04 04 04 05 04 05 05 05 05 05 05 05 05 05 05	45, 33	52, 34		68, 40 68, 38 Production Grad	75, 39		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8	ability Factor: Cumulative % Passing 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 6.0	% Retained 0.0 0.7 11.0 29.7 40.1 58.1 64.1	
40	45, 33 Operating Zone	52, 34	• 60, 36	68, 40 68, 38 Production Grad	75, 39		Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	ability Factor: Cumulative % Passing 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	

Approved By: Mary P. Bal

PLANT		12					Contractor:			
Sample Date		10/16/23	the man second		concrete Grade:	DIVI, 4500HP				
Dates Test R	epresents:	10/17/2023	through	10/23/2023	Specific	%	MDOT No.:			
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Gravity	Contribution				
6AA	71-47	Presque Isle	1450	8.87	2.62	49.9				
26A	71-47	Presque Isle	305	1.87	2.62	10.5				
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6				SUP
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%		MATE
Sieve	(6AA	26	Α	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior N</u> 30701 W. 10
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
1"		98.8	100		100.0	99.4	0.6	0.6		
3/4"		80.8	100		100.0	90.4	9.0	9.6		
1/2"		36.6	96		100.0	68.0	22.4	32.0		
3/8" #4		17.1 3.0	89 23		100.0 96.3	57.5 42.1	10.5	42.5 57.9		Retained must be a
#4 #8		3.0 1.9	23		96.3 81.3	33.7	15.4 8.4	66.3		cent sieves must eq
#16		1.7	2.		65.6	27.1	6.7	72.9		00 and #200 sieves. must be at least 4%
#30		1.6	2.		49.1	20.5	6.6	79.5		00 and #200 sieves.
#50		1.6	2.		24.2	10.6	9.9	89.4		must be at least 4%
#100		1.5	1.		5.5	3.1	7.5	96.9		e (nom. Max. 1.0") a
LBW		1.1	1.	7	0.6	1.0	2.2	99.0		
Production G	Gradation	O Batch Plant Gra	dations 💿 Agg	regate Supplier Gra	dations	Adjusted WF	Intial Production	on Sample (IPS	- 5)	
Coarsene	ess Factor:	64	Work	ability Factor:	34	36.2	Coars	eness Factor:	63	
45							Work	ability Factor:	36	
	45, 44				JMF Zone		Ciava	Cumulative	%	Cumulative
-		52, 41					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
5 35			■ 60, 36	Production Grad	dation		3/4"	89.0	10.3	11.0
Workability Factor (%)		52, 34		Ì			1/2"	70.3	18.7	29.7
ţ	45, 33	02, 04					3/8"	59.9	10.4	40.1
	/		57, 22	68, 32 68, 31			#4	41.9	18.0	58.1
g ³⁰] _		_		00, 01			#8 #16	35.9 27.8	6.0 8.2	64.1 72.2
<u>z</u>	Operating Zone				75, 28		#16 #30	27.8 18.9	8.2 8.8	72.2 81.1
	Boundary				. 5, 20		#30 #50	6.3	12.6	93.7
25							#50	0.3	12.0	93.1

75

80

#100

LBW

1.7

1.0

RIALS

Materials, LLC LO Mile Rd. Hills, MI 48336

above the 3/8" sieve. equal 10% except max., 6 for each sieve except max., 6 for the 3/4" sieve when aggregate is used.

98.3

99.0

4.6

0.7

PREPARED BY: SM, LLC Technical Service

50

55

 $\mathbf{Coarseness} \ \mathbf{Factor} \ \mathbf{(\%)}^{70}$

40

45

ActionLimits Boundary = - - - - -



Sample Date:		p11 10/16/23		c	Concrete Grade		Contractor:			-	
Dates Test R		10/17/2023	through	10/23/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1355	8.29	2.62	46.6					
26A	71-47	Presque Isle	400	2.45	2.62	13.8					
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		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained			Materials, LLC 10 Mile Rd.
2"		100.0	100	0.0	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	on Hills, MI 48336
1"		97.0	100		100.0	98.6	1.4	1.4			
3/4"		71.4	100		100.0	86.7	11.9	13.3			
1/2"		25.8	96		100.0	65.0	21.7	35.0			
3/8"		13.1	89		100.0	58.0	6.9	42.0			above the 3/8" sieve.
#4		2.3	23		97.3	42.9	15.2	57.1	· · ·		equal 10% except max.,
#8		1.6	5.		85.9	35.6	7.3	64.4		00 and #200 sieves	
#16		1.5	2.		70.9	29.1	6.4	70.9			6 for each sieve except
#30 #50		1.5 1.4	2.		52.1 24.7	21.6 10.7	7.5 10.9	78.4 89.3		00 and #200 sieves	
#30		1.4	1.		7.5	3.9	6.8	96.1		must be at least 4%	6 for the 3/4" sieve when
π 100										o (nom Max 1 0")	
LBW				-					a 1.5" max. siz	e (nom. Max. 1.0")	aggregate is used.
LBW Production G	radation	1.4 1.0	1.	7	1.5	1.3	2.6	98.7		e (nom. Max. 1.0")	aggregate is used.
Production G		1.0 Batch Plant Gra	1. Indations () Aggr	7 egate Supplier Gra	1.5 dations	1.3 Adjusted WF	2.6 Intial Production	98.7 on Sample (IPS	5)	e (nom. Max. 1.0")	aggregate is used.
Production G Coarsene	iradation ess Factor:	1.0 Batch Plant Gra	1. Indations () Aggr	7	1.5 dations	1.3	2.6 Intial Productio Coars	98.7 on Sample (IPS eness Factor:	5) 62	e (nom. Max. 1.0")	aggregate is used.
Production G Coarsene		1.0 Batch Plant Gra	1. Indations () Aggr	7 egate Supplier Gra	1.5 dations	1.3 Adjusted WF	2.6 Intial Productio Coars	98.7 on Sample (IPS eness Factor: ability Factor: Cumulative	5) 62 36 %	Cumulative	
Production G Coarsene	ess Factor:	1.0 Batch Plant Gra	1. Indations () Aggr	7 egate Supplier Gra ability Factor:	1.5 dations 36	1.3 Adjusted WF	2.6 Intial Productio Coars Work Sieve	98.7 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing	5) 62 36 % Retained	Cumulative % Retained	aggregate is used.
Coarsene	ess Factor:	1.0 () Batch Plant Gra 65	1. Indations () Aggr	7 regate Supplier Gra rability Factor:	1.5 dations 36 JMF Zone	1.3 Adjusted WF	2.6 Intial Productio Coars Work Sieve 2"	98.7 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0	6) 62 36 % Retained 0.0	Cumulative % Retained 0.0	
Coarsene	ess Factor:	1.0 () Batch Plant Gra 65	1. Indations () Aggr	7 egate Supplier Gra ability Factor:	1.5 dations 36 JMF Zone	1.3 Adjusted WF	2.6 Intial Productio Coars Work Sieve 2" 1.5"	98.7 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0	62 36 % Retained 0.0 0.0	Cumulative % Retained 0.0 0.0	aggregate is used.
Production G Coarsene	ess Factor:	1.0 () Batch Plant Gra 65	1. Idations () Aggr Work	7 egate Supplier Gra ability Factor: 67, 40 Provection G	1.5 dations 36 JMF Zone	1.3 Adjusted WF	2.6 Intial Productio Coars Work Sieve 2"	98.7 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0	6) 62 36 % Retained 0.0	Cumulative % Retained 0.0 0.0 0.0	
Production G Coarsene	ess Factor:	1.0 () Batch Plant Gra 65	1. Indations () Aggr	7 egate Supplier Gra ability Factor: 67, 40 Provection G	1.5 dations 36 JMF Zone	1.3 Adjusted WF	2.6 Intial Productio Coars Work Sieve 2" 1.5" 1"	98.7 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0	5) 62 36 % Retained 0.0 0.0 0.0 0.0	Cumulative % Retained 0.0 0.0	
Hactor G Coarsene 45 40 40 40 40 40 40 40 40 40	ess Factor:	1.0 () Batch Plant Gra 65	1. Idations () Aggr Work	7 egate Supplier Gra ability Factor: 67, 40 Provection G	1.5 dations 36 JMF Zone	1.3 Adjusted WF	2.6 Intial Productio Coars Work Sieve 2" 1.5" 1" 3/4"	98.7 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0 95.0	5) 62 36 % Retained 0.0 0.0 0.0 0.0 5.0	Cumulative % Retained 0.0 0.0 0.0 5.0	
Hactor G Coarsene 45 40 40 40 40 40 40 40 40 40	ess Factor:	1.0 () Batch Plant Gra 65 52, 41 56	1. Idations () Aggr Work	7 egate Supplier Gra ability Factor: 67, 40 Protection C S	1.5 dations 36 JMF Zone	1.3 Adjusted WF	2.6 Intial Productio Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4	98.7 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0 95.0 72.3 60.4 42.6	5) 62 36 % Retained 0.0 0.0 0.0 0.0 5.0 22.8	Cumulative % Retained 0.0 0.0 0.0 5.0 27.7 39.6 57.4	
Hactor G Coarsene 45 40 40 40 40 40 40 40 40 40	ess Factor:	1.0 () Batch Plant Gra 65 52, 41 56	1. Idations () Aggr Work	7 egate Supplier Gra ability Factor: 67, 40 Provection G	1.5 dations 36 JMF Zone	1.3 Adjusted WF	2.6 Intial Productio Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8	98.7 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0 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	Cumulative % Retained 0.0 0.0 0.0 5.0 27.7 39.6 57.4 64.0	
Hactor G Coarsene 45 40 40 40 40 40 40 40 40 40	ess Factor:	1.0 () Batch Plant Gra 65 52, 41 52, 34 52, 34	1. Idations () Aggr Work	7 egate Supplier Gra ability Factor: 67, 40 Protection C S	1.5 dations 36 JMF Zone Gradation	1.3 Adjusted WF	2.6 Intial Productio Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	98.7 on Sample (IPS eness Factor: ability Factor: % Passing 100.0 100.0 100.0 95.0 72.3 60.4 42.6 36.0 29.5	62 36 % Retained 0.0 0.0 0.0 0.0 5.0 22.8 11.8 17.8 6.6 6.5	Cumulative % Retained 0.0 0.0 0.0 5.0 27.7 39.6 57.4 64.0 70.5	
Hactor G Coarsene 45 40 40 40 40 40 40 40 40 40	ess Factor:	1.0 () Batch Plant Gra 65 52, 41 52, 34 52, 34	1. Idations () Aggr Work	7 egate Supplier Gra ability Factor: 67, 40 Protection C S	1.5 dations 36 JMF Zone	1.3 Adjusted WF	2.6 Intial Production Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	98.7 on Sample (IPS eness Factor: ability Factor: % Passing 100.0 100.0 100.0 95.0 72.3 60.4 42.6 36.0 29.5 20.3	62 36 % Retained 0.0 0.0 0.0 22.8 11.8 17.8 6.6 6.5 9.2	Cumulative % Retained 0.0 0.0 0.0 5.0 27.7 39.6 57.4 64.0 70.5 79.7	
45 45 40 45 40 40 40 40 40 40 40 40 40 40 40 40 40	45, 44 45, 33 Operating Zone	1.0 () Batch Plant Gra 65 52, 41 52, 34 52, 34	1. idations () Aggr Work 60, 38 60, 38	7 egate Supplier Gra ability Factor: 67, 40 Protection C S	1.5 dations 36 JMF Zone Gradation 75, 39 75, 28	1.3 Adjusted WF	2.6 Intial Productio Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	98.7 on Sample (IPS eness Factor: ability Factor: % Passing 100.0 100.0 100.0 95.0 72.3 60.4 42.6 36.0 29.5	62 36 % Retained 0.0 0.0 0.0 0.0 5.0 22.8 11.8 17.8 6.6 6.5	Cumulative % Retained 0.0 0.0 0.0 5.0 27.7 39.6 57.4 64.0 70.5	

Approved By: Mart P. Ball

PLANT #		P-32					Contractor:				
Sample Date			dia and a state		Concrete Grade	DIVI, 4500HP					
Dates Test R	epresents:	10/17/2023	through	10/23/2023	Creatitia	0/	MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1355	8.29	2.62	46.6					
26A	71-47	Presque Isle	400	2.45	2.62	13.8					
2NS	95-013	Smelter Bay	1150	6.95	2.65	39.6				SUD	EBLOB
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%		MATE	ERIALS
Sieve	(6AA	26	Ā	2NS	Cumulative	% Retained	Cumulative % Retained			Materials, LLC
						% Passing					10 Mile Rd.
2"		00.0	10		100.0	100.0	0.0	0.0		Suite 500	- 11:11- 141 40220
1.5"		00.0	10		100.0	100.0	0.0	0.0		Farmingto	n Hills, MI 48336
1" 3/4"		97.0 71.4	10 10		100.0 100.0	98.6 86.7	1.4 11.9	1.4 13.3			
3/4" 1/2"		25.8	96		100.0	65.0	21.7	35.0			
3/8"		13.1	89		100.0	58.0	6.9	42.0	*Maximum %	Retained must be	above the 3/8" sieve.
#4		2.3	23		97.3	42.9	15.2	57.1			qual 10% except max.
#8		1.6	5	.8	85.9	35.6	7.3	64.4		00 and #200 sieves	
#16		1.5	2	.6	70.9	29.1	6.4	70.9	*% Retained	must be at least 4%	6 for each sieve except
#30		1.5	2		52.1	21.6	7.5	78.4	nom. max., #1	00 and #200 sieves	S.
#50		1.4	2		24.7	10.7	10.9	89.3			6 for the 3/4" sieve whe
#100 LBW		<u>1.4</u> 1.0	1.		7.5 1.5	3.9 1.3	6.8 2.6	96.1 98.7	a 1.5" max. siz	e (nom. Max. 1.0")	aggregate is used.
		-		-							
Production G		Batch Plant Gra	0 55	regate Supplier Gra				on Sample (IPS			
Coarsene	ess Factor:	65	Work	ability Factor:	36	38.1	Coars	eness Factor:	62		
45							Work	ability Factor:	36		
	45, 44				JMF Zone		Sieve	Cumulative	%	Cumulative	
-		52, 41					0"	% Passing	Retained	% Retained	
40		56	à. 40¥	67, 40	75.65		2" 1.5"	100.0 100.0	0.0	0.0	
8				68, 38 Production G	75, 39		1.0	100.0	0.0	0.0	
Factor (%)			I I		Judation		3/4"	95.0	5.0	5.0	
ž 35			■ 60, 3 E	s			1/2"	72.3	22.8	27.7	
	\rightarrow	52, 34	-	!			3/8"	60.4	11.8	39.6	
lity	45, 33		!				#4	42.6	17.8	57.4	
Workability			,	67, 32 68, 31			#8	36.0	6.6	64.0	
ka	Operating Zone						#16	29.5	6.5	70.5	
Ŝ ∣∟	Boundary				75, 28		#30 #50	20.3 9.5	9.2 10.8	79.7 90.5	
							#50	9.5 3.4	6.1	90.5 96.6	
> ₂₅											
	45	50 55	60	Factor (%)	75	80	LBW	1.3	2.1	98.7	

Approved By:

PLANT		P-35		-			Contractor:			-	
Sample Date		10/16/23			oncrete Grade	DM, 4500HP					
Dates Test R	Represents:	10/17/2023	through	10/23/2023			MDOT No.:			-	
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific	%					
6AA	58-003	Stoneco	1500	8.94	<u>Gravity</u> 2.69	Contribution 50.8					
26A	58-003	Stoneco	300	1.79	2.69	10.2					
2NS	81-019	Pleasant Lake	1150	6.95	2.65	39.0					
		Total Wt	2950	17.68		100.0	< Verify this n	umber is 100%	_	SUP MATE	ERIOR
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		Superior I 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"		00.0	100		100.0	100.0	0.0	0.0			
3/4"		87.9	100		100.0	93.8	6.2	6.2			
1/2"		49.5	100		100.0	74.3	19.5	25.7			
3/8"		22.6	83		100.0	58.9	15.4	41.1			above the 3/8" sieve.
#4		3.2	8.		98.9	41.0	17.9	59.0			qual 10% except max.,
#8 #16		1.8 1.4	3.		86.4 68.4	34.9 27.6	6.1 7.3	65.1 72.4		00 and #200 sieves	
#16 #30		1.4	2.		47.6	19.3	7.3 8.4	72.4 80.7			for each sieve except
#30 #50		0.8	2		23.0	9.6	9.7	90.4		00 and #200 sieves	6 for the 3/4" sieve wher
#100		0.8	2.		4.4	2.3	7.3	97.7		e (nom. Max. 1.0")	
LBW		1.1	2.		0.4	0.9	1.4	99.1			aggrogato to acca.
Production G	Gradation	O Batch Plant Gra	dations 💿 Aggr	egate Supplier Grad	ations	Adjusted WF	Intial Production	on Sample (IPS	s)		
	ess Factor:	63		ability Factor:	35	37.4		eness Factor:	,, 61	1	
								ability Factor:	36		
45								Cumulative	%	Cumulative	
	45, 44				JMF Zone		Sieve	% Passing	Retained	% Retained	
1		52, 41					2"	100.0	0.0	0.0	
_ 40 -		56,	40		75, 39		1.5"	100.0	0.0	0.0	
			!	68, 38 Production Gradati			1"	99.3	0.7	0.7	
(%)			■ 60, ₁ 26		on		3/4"	89.1	10.2	10.9	
or (%)			- ⁰⁰ ,198	i			1/2"	70.5	18.6	29.5	
actor (%)			1				3/8"	60.5	10.0	39.5	
Factor (%)	\rightarrow	52, 34	i	•			#4	44.1	16.4	55.9	
ity Factor (%)	45, 33	52, 34									
bility Factor (%)	45, 33	52, 34 56,	31	67 , 68 , 31			#8	35.6	8.5	64.4	
kability Factor (%)		56,	1 31	67 , 89, 31			#16	27.7	7.9	72.3	
lorkability Factor (%)	45, 33 Operating Zone Boundary	56,	31	67, 89, 31	75, 28		#16 #30	27.7 20.6	7.9 7.1	72.3 79.4	
Workability Factor (%)	Operating Zone	56,	1 31	67, 89, 31	75, 28		#16 #30 #50	27.7 20.6 8.7	7.9 7.1 11.8	72.3 79.4 91.3	
Workability Factor (%)	Operating Zone	56,		67, 68, 31 Factor (%)	75, 28	80	#16 #30	27.7 20.6	7.9 7.1	72.3 79.4	

Approved By: Mary 1. Ball

PLANT #		P-36					Contractor:				
Sample Date		10/16/23			concrete Grade	: DM, 4500HP					
Dates Test R	epresents:	10/17/2023	through	10/23/2023		0/	MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific	% Contribution					
6AA	71-47	Presque Isle	1450	8.87	Gravity 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				SUD	ERIOR
-		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		Superior 30701 W. 2	<u>Materials, LLC</u> 10 Mile Rd.
2"	1	00.0	10	0.0	100.0	100.0	0.0	0.0		Suite 500	
1.5"	1	00.0	100	0.0	100.0	100.0	0.0	0.0		Farmingto	n Hills, MI 48336
1"		98.8	10		100.0	99.4	0.6	0.6			
3/4"		30.8	100		100.0	90.4	9.0	9.6			
1/2"		36.6	96		100.0	68.0	22.4	32.0			
3/8" #4		17.1 3.0	89		100.0 97.4	57.5 42.5	10.5 15.0	42.5 57.5			above the 3/8" sieve.
#4 #8		3.0 1.9	23		84.2	34.9	7.7	65.1		00 and #200 sieves	qual 10% except max.,
#16		1.7	2.	-	69.9	28.8	6.1	71.2	,		for each sieve except
#30		1.6	2		51.4	21.4	7.4	78.6		00 and #200 sieves	•
#50		1.6	2.		22.0	9.7	11.7	90.3	-		for the 3/4" sieve wher
#100		1.5	1.		3.6	2.4	7.3	97.6	a 1.5" max. siz	e (nom. Max. 1.0")	aggregate is used.
LBW		1.1	1.	7	0.8	1.0	1.3	99.0			
Production G	radation	Batch Plant Gra	idations 💿 Agg	regate Supplier Gra	dations	Adjusted WF	Intial Production	on Sample (IPS	S)		
Coarsene	ess Factor:	65	Work	ability Factor:	35	37.4	Coars	eness Factor:	63		
				•			Work	ability Factor:	35		
45		_			JMF Zone		Cievre	Cumulative	%	Cumulative	
4	15, 44				Jivii 2011e		Sieve	% Passing	Retained	% Retained	
		52, 41					2"	100.0	0.0	0.0	
ू ⁴⁰			58, 39	68 , 39	75, 39		1.5"	100.0	0.0	0.0	
<u>ی</u>			i i	Production C	Fradation		1"	99.1	0.9	0.9	
D I			■ 60, 36				3/4"	90.3	8.8	9.7	
41 05		l l	Ī	IPS			1/2"	69.2	21.1	30.8	
b 35		52, 34		ļ			3/8"	59.1	10.1	40.9	
							#4 #8	41.8 35.1	17.3 6.6	58.2 64.9	
llity Fac	45, 33		58.31	68,33			#0 #16	28.5	6.6	71.5	
ability Fac		-	50, 51	00, 5			<i>π</i> 10	20.0	0.0		
orkability Fac	Operating Zone	7	56, 51	00,0				21.2	73	-	
Norkability Fac			56, 51	00,0	75, 28		#30	21.2 8.7	7.3 12.5	78.8	
ability Fa	Operating Zone]		5 Factor (%) ⁷⁰	75, 28			21.2 8.7 1.8	7.3 12.5 7.0	-	

Approved By: Mary 1. Ball

PLANT i Sample Date		P-38 10/16/23		~	oncrete Grade		Contractor:				
Dates Test R		10/17/2023	through	10/23/2023	oncrete Grade		MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution	MDOT NO				
6AA	58-003	Stoneco	1500	8.94	2.69	50.8					
26A	58-003	Stoneco	300	1.79	2.69	10.2					
2NS	81-019	Pleasant Lake	1150	6.95	2.65	39.0				SUD	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		Superior I 30701 W. 2	Materials, LLC L0 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"		87.9	100		100.0	93.8	6.2	6.2			
1/2"		49.5	100		100.0	74.3	19.5	25.7			
3/8"		22.6	83		100.0	58.9	15.4	41.1			above the 3/8" sieve.
#4		3.2	8.		98.9	41.0	17.9	59.0			qual 10% except max.,
#8 #16		1.8 1.4	3.		86.4 68.4	34.9 27.6	6.1 7.3	65.1 72.4		00 and #200 sieves	
#16 #30		1.4	2.	-	68.4 47.6	19.3	7.3 8.4	72.4 80.7			for each sieve except
#30 #50		0.8	2.		23.0	9.6	9.7	90.4		00 and #200 sieves	for the 3/4" sieve wher
#100		0.8	2.		4.4	2.3	7.3	97.7		e (nom. Max. 1.0")	
LBW		1.1	2.		0.4	0.9	1.4	99.1	a 1.0 max. 312		aggregate is used.
Production G	radation	Batch Plant Gra	dations 🔘 Agg	regate Supplier Gra	dations	Adjusted WF	Intial Production	on Sample (IPS	3)		
	ess Factor:	63		ability Factor:	35	37.4		eness Factor:	, ₎ 61		
Coarsene	55 T actor.	05	WOIK	ability ractor.		57.4			36		
45 T)	WORK	ability Factor: Cumulative	30 %	Cumulative	
1 -	45, 44				JMF Zone		Sieve	% Passing	76 Retained	% Retained	
1		52, 41		_			2"	100.0	0.0	0.0	
		56,	40	67,40	75, 39		1.5"	100.0	0.0	0.0	
40				68, 38			1"	99.3	0.0	0.7	
(%)				Production Gradat	ion		3/4"	89.1	10.2	10.9	
40 (%) Jo							1/2"	70.5	18.6	29.5	
40 35			■ 60, ₁ ≱§								
Factor (%)		52. 34	■ ⁶⁰ , β §				3/8"	60.5	10.0	39.5	
ty Factor (%)	45, 33	52, 34	■ 60,185				3/8" #4		10.0 16.4	39.5 55.9	
oility Factor (%)	45, 33	52, 34 56,					3/8"	60.5 44.1 35.6	16.4 8.5		
(%) (%) (%) (%) (%) (%) (%) (%) (%) (%)		56,		67, 64 , 31			3/8" #4 #8 #16	60.5 44.1 35.6 27.7	16.4 8.5 7.9	55.9	
orkability Factor (%)	45, 33 Operating Zone Boundary	56,			75, 28		3/8" #4 #8 #16 #30	60.5 44.1 35.6 27.7 20.6	16.4 8.5 7.9 7.1	55.9 64.4 72.3 79.4	
Workability Factor (%)	Operating Zone	56,			75, 28		3/8" #4 #16 #30 #50	60.5 44.1 35.6 27.7 20.6 8.7	16.4 8.5 7.9 7.1 11.8	55.9 64.4 72.3 79.4 91.3	
Norkability Factor (%)	Operating Zone	56,	31		75, 28		3/8" #4 #8 #16 #30	60.5 44.1 35.6 27.7 20.6	16.4 8.5 7.9 7.1	55.9 64.4 72.3 79.4	

Approved By: Mart 1. Ball

PLANT :		P-39					Contractor:				
Sample Date		10/16/23			oncrete Grade	: DM, 4500HP					
Dates Test R	(epresents:	10/17/2023	through	10/23/2023		^ /	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	1100	6.65	2.65	37.9				SUD	ERIOR
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%			ERIOR
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		Superior I 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"		100.0	10		100.0	100.0	0.0	0.0			
3/4"		85.0	100	-	100.0	92.2	7.8	7.8			
1/2"		39.1	96		100.0	68.0	24.2	32.0			
3/8" #4		23.5 3.7	85		100.0 98.8	58.9 41.4	9.1 17.5	41.1 58.6			above the 3/8" sieve.
#4 #8		2.3	5.		90.0 84.2	33.6	7.8	66.4	· ·		qual 10% except max.
#0 #16		2.3	2.		66.4	26.5	7.0	73.5		00 and #200 sieves	5 for each sieve except
#30		2.0	1.		47.9	19.4	7.1	80.6		00 and #200 sieves	•
#50		1.9	1.		21.4	9.3	10.1	90.7	· · · ·		5 for the 3/4" sieve whe
#100		1.9	1.		5.0	3.0	6.2	97.0		e (nom. Max. 1.0")	
LBW		1.6	1.	4	0.8	1.3	1.8	98.7			
Production G	Fradation	O Batch Plant Gra	dations 💿 Agg	egate Supplier Gra	dations	Adjusted WF	Intial Production	on Sample (IPS	5)		
Coarsene	ess Factor:	62	Work	ability Factor:	34	36.1		eness Factor:	63		
		<u></u>		-			Work	ability Factor:	36		
45					JMF Zone		0:	Cumulative	%	Cumulative	
1	45, 44				JIVII ZOIIE		Sieve	% Passing	Retained	% Retained	
		52, 41	\downarrow				2"	100.0	0.0	0.0	
			-58,40	68, 38	75, 39		1.5"	100.0	0.0	0.0	
२ ⁴⁰			-				1"	100.0	0.0	0.0	
(%) ⁴⁰			60,38	oquetion Gradation			3/4"	89.7	10.3	10.3	
tor (%)							1/2" 3/8"	70.3 59.1	19.4	29.7	
actor (%)	_			li			3/ð	59.1	11.2	40.9	
y Factor (%)	45.33	52, 34		İ			<i>#</i> Λ	12.8	16.2	57.2	
ility Factor (%) 25 10	45, 33	52, 34			2		#4 #8	42.8	16.3 7.3	57.2 64.5	
ability Factor (%)			50, 22	688832	2		#8	35.5	7.3	64.5	
orkability Factor (%)	Operating Zone		50, 22	688 ₈ 32			#8 #16			64.5 71.0	
ability Factor (%) 05 25 1 1 1 25				68,8,8,72	2		#8	35.5 29.0	7.3 6.5	64.5	
Workability Factor (%)	Operating Zone		50, 22	65 Factor (%) ⁷⁰		80	#8 #16 #30	35.5 29.0 21.2	7.3 6.5 7.7	64.5 71.0 78.8	

Approved By: Mart P. Ball

	#:	P-02		-			Contractor:				
Sample Date		10/16/23			Concrete Grade	<u>DM, 4500HP</u>					
Dates Test R	epresents:	10/17/2023	through	10/23/2023	0	0/	MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific	%					
6AA	71-47	Presque Isle	1450	8.87	Gravity 2.62	Contribution 49.9					
26A	71-47	Presque Isle	305	1.87	2.62	10.5					
20A 2NS	63-115	Ray Rd	1150	6.95	2.65	39.6					
2110	00 110	Total Wt		17.69	2.00	100.0	< Verify this n	umber is 100%	_	SUP MATE	ERIOR
Sieve	(6AA	26	5A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior I</u> 30701 W. 1	Materials, LLC L0 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		Farmingtor	n Hills, MI 48336
1"	ę	98.8	10	0.0	100.0	99.4	0.6	0.6			
3/4"		80.8	-	0.0	100.0	90.4	9.0	9.6			
1/2"		36.6		5.9	100.0	68.0	22.4	32.0			
3/8"		17.1	89		100.0	57.5	10.5	42.5			above the 3/8" sieve.
#4		3.0	23		96.3	42.1	15.4	57.9			qual 10% except max.,
#8 #16		1.9	5.		81.3	33.7	8.4 6.7	66.3 72.9		00 and #200 sieves	
#16 #30		1.7 1.6		.6 .2	65.6 49.1	27.1 20.5	6.6	72.9			for each sieve except i
#50		1.6	2.		24.2	10.6	9.9	89.4	,	00 and #200 sieves	o for the 3/4" sieve wher
#100		1.5		.9	5.5	3.1	7.5	96.9		e (nom. Max. 1.0") ;	
LBW		1.1	1.		0.6	1.0	2.2	99.0			aggrogato lo accal
Production G	radation	O Batch Plant Gra	dations 💿 Agg	regate SupplierGrad	lations	Adjusted WF	Intial Production	on Sample (IPS	5)		
Toddollon O				5 11		najaotoa m					
Coarsene		64	Work	ability Factor:	34	36.2	Coars	eness Factor	63		
	ess Factor:	64	Work	cability Factor:	34	36.2		eness Factor: ability Factor:	63 35		
45	ess Factor:	64	Work	cability Factor:		36.2	Work	ability Factor:	35	Cumulative	
45		64	Work	cability Factor:	34 JMF Zone	36.2		ability Factor: Cumulative	35 %	Cumulative % Retained	
45	ess Factor:	64	Work	cability Factor:		36.2	Work	ability Factor:	35	Cumulative % Retained 0.0	
	ess Factor:		Work			36.2	Work Sieve	ability Factor: Cumulative % Passing	35 % Retained	% Retained	
	ess Factor:			68, 39	JMF Zone	36.2	Works Sieve 2" 1.5" 1"	ability Factor: Cumulative % Passing 100.0 100.0 100.0	35 % Retained 0.0 0.0 0.0	% Retained 0.0 0.0 0.0	
	ess Factor:		58, 39	68, 39 68, 38 Production Grac	JMF Zone	36.2	Works Sieve 2" 1.5" 1" 3/4"	ability Factor: Cumulative % Passing 100.0 100.0 100.0 95.1	35 % Retained 0.0 0.0 0.0 4.9	% Retained 0.0 0.0 0.0 4.9	
	ess Factor:		58, 39		JMF Zone	36.2	Works 2" 1.5" 1" 3/4" 1/2"	ability Factor: Cumulative % Passing 100.0 100.0 100.0 95.1 74.6	35 % Retained 0.0 0.0 0.0 4.9 20.5	% Retained 0.0 0.0 0.0 4.9 25.4	
	PSS Factor:		58, 39	68, 39 68, 38 Production Grac	JMF Zone	36.2	Works 2" 1.5" 1" 3/4" 1/2" 3/8"	ability Factor: Cumulative % Passing 100.0 100.0 100.0 95.1 74.6 59.3	35 % Retained 0.0 0.0 0.0 4.9 20.5 15.3	% Retained 0.0 0.0 0.0 0.0 25.4 40.7	
	ess Factor:	52, 41	58, 39 • 60, 36	68, 39 68, 38 Production Grac	JMF Zone	36.2	Works 2" 1.5" 1" 3/4" 1/2" 3/8" #4	ability Factor: Cumulative % Passing 100.0 100.0 100.0 95.1 74.6 59.3 42.1	35 % Retained 0.0 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	
	PSS Factor:	52, 41	58, 39	68, 39 68, 38 Production Grac	JMF Zone	36.2	Works 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8	ability Factor: Cumulative % Passing 100.0 100.0 95.1 74.6 59.3 42.1 35.1	35 % Retained 0.0 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	
	45, 33 Operating Zone	52, 41	58, 39 • 60, 36	68, 39 68, 38 Producion Grad IPS	JMF Zone 75, 39 dation	36.2	Works 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	ability Factor: Cumulative % Passing 100.0 100.0 95.1 74.6 59.3 42.1 35.1 29.2	35 % Retained 0.0 0.0 4.9 20.5 15.3 17.2 7.1 5.9	% Retained 0.0 0.0 0.0 25.4 40.7 57.9 64.9 70.8	
	45, 33	52, 41	58, 39 • 60, 36	68, 39 68, 38 Producion Grad IPS	JMF Zone	36.2	Works 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	ability Factor: Cumulative % Passing 100.0 100.0 95.1 74.6 59.3 42.1 35.1 29.2 21.9	35 % Retained 0.0 0.0 4.9 20.5 15.3 17.2 7.1 5.9 7.3	% Retained 0.0 0.0 0.0 0.0 4.9 25.4 40.7 57.9 64.9 70.8 78.1	
ability Factor (%)	45, 33 Operating Zone	52, 41	58, 39 • 60, 36	68, 39 68, 38 Producion Grad IPS	JMF Zone 75, 39 dation	36.2	Works 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	ability Factor: Cumulative % Passing 100.0 100.0 95.1 74.6 59.3 42.1 35.1 29.2	35 % Retained 0.0 0.0 4.9 20.5 15.3 17.2 7.1 5.9	% Retained 0.0 0.0 0.0 25.4 40.7 57.9 64.9 70.8	

Approved By: