Production Gradation Report

PLANT :	#:	P-101					Contractor:				
Sample Date		8/9/21			Concrete Grade:	DM					
Dates Test R	Represents:	8/10/2021	through	8/16/2021	0	0/	MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1560	9.54	2.62	53.6					
26A	71-47	Presque Isle	200	1.22	2.62	6.9					
2NS	75-051	Mid-Michigan	1150	6.93	2.66	39.5				GU	
		Total Wt	2910	17.69		100.0	< Verify this n	umber is 100%	_	MA	
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superi</u> 30701	
2"	1	100.0	10	0.0	100.0	100.0	0.0	0.0		Suite 5	
1.5"	1	100.0	10	0.0	100.0	100.0	0.0	0.0		Farmin	
1"		97.8	10	0.0	100.0	98.8	1.2	1.2			
3/4"		85.4	100	0.0	100.0	92.2	6.6	7.8			
1/2"		45.9	96		100.0	70.8	21.4	29.2			
3/8"		25.2	87		100.0	59.0	11.7	41.0	*Maximum %	Retained mus	
#4		3.7	20		99.2	42.6	16.5	57.4	*Any two adja	vo adjacent sieves mu	
#8		1.6	5.		83.0	34.0	8.6	66.0	nom. max., #10	00 and #200 si	
#16		1.4	2.		67.7	27.7	6.3	72.3	*% Retained I	must be at lea	
#30		1.4	2.		52.1	21.5	6.2	78.5	nom. max., #100 and #200		
#50		1.3	2.	-	26.8	11.4	10.1	88.6	*% Retained I	must be at leas	
#100		1.2	1.		6.1	3.2	8.2	96.8	a 2" max. size	(nom. Max. 1.	
LBW		1.2	1.	-	0.7	1.0	2.1	99.0			
Production G		Batch Plant Gra	0	regate Supplier Gr				on Sample (IPS	,		
Coarsene	ess Factor:	62	WOR	ability Factor	: 34	36.5		eness Factor:	62		
(45 						_)	Work	ability Factor:	35		
	45, 44				JMF Zone		Sieve	Cumulative % Passing	% Retained	Cumulati % Retaine	
		52, 41					2"	100.0	0.0	0.0	
२ ⁴⁰			5/, 39	67, 39 68, 3	75, 39		1.5"	100.0	0.0	0.0	
<u>ی</u>			!				1"	100.0	0.0	0.0	
<u>ē</u>			60 , 3	Production Gradat	tion		3/4"	95.0	5.0	5.0	
5 35			l				1/2"	70.5	24.5	29.5	
μË]	\rightarrow	52, 34		i			3/8"	60.0	10.5	40.0	
<u>i</u>	45, 33						#4	44.4	15.6	55.6	
			57, 31	67 ₆ 31	31		#8	35.5	9.0	64.5	
iq 30 -							#16	28.5	7.0	71.5	
kabi	Operating Zone										
orkabi	Operating Zone Boundary	2			75, 28		#30	21.5	7.0	78.5	
Norka		2			75, 28		#50	10.2	11.3	89.8	
30 A Norkabi			55 60	s Factor (%)		80					



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

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

PREPARED BY: SM, LLC Technical Service

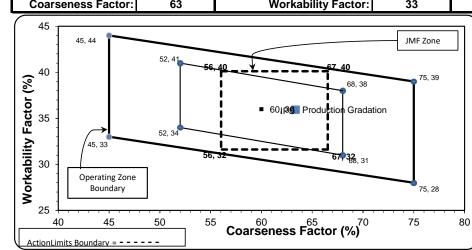
Approved By: Mary 1. Ball

PLANT #	#:	P-102					Contractor:			
Sample Date	:	8/9/21			Concrete Grade:	DM	_			
Dates Test R	epresents:	8/10/2021	through	8/16/2021			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	305	1.82	2.69	10.3				
2NS	63-114	Highland	1150	6.95	2.65	38.9				SUPE
		Total Wt	2955	17.71		100.0	< Verify this n	umber is 100%		MATE
Sieve	e	6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior N</u> 30701 W. 10
2"	1	00.0	100	0.0	100.0	100.0	0.0	0.0		Suite 500
1.5"	1	00.0	100).0	100.0	100.0	0.0	0.0		Farmington
1"	ç	99.2	100).0	100.0	99.6	0.4	0.4		
3/4"		79.5	100		100.0	89.6	10.0	10.4		
1/2"		12.2	99	-	100.0	70.6	19.0	29.4		
3/8"	2	21.7	76	.5	100.0	57.8	12.8	42.2	*Maximum %	Retained must be at
#4		4.5	5.	6	99.0	41.4	16.4	58.6	*Any two adja	icent sieves must eq
#8		1.8	1.		83.3	33.4	7.9	66.6	nom. max., #10	00 and #200 sieves.
#16		1.7	1.	-	63.6	25.7	7.7	74.3	*% Retained I	must be at least 4% f
#30		1.5	0.		44.7	18.2	7.5	81.8	nom. max., #10	00 and #200 sieves.
#50		1.4	0.		20.6	8.8	9.4	91.2		must be at least 8% f
#100 LBW		<u>1.4</u> 1.0	0.		4.5	2.5 0.9	6.3 1.6	97.5 99.1	a 2" max. size	(nom. Max. 1.5") agg
Production G		Batch Plant Gra	_	regate Supplier (on Sample (IPS	5)	
	ess Factor:	63	Work	ability Facto	or: 33	35.9		eness Factor:	61	
45							Work	ability Factor:	36	
	45, 44				JMF Zone		Sieve	Cumulative % Passing	% Retained	Cumulative % Retained



laterials, LLC 0 Mile Rd. Hills, MI 48336

pove the 3/8" sieve. ual 10% except max., or each sieve except max., or the 1" sieve when regate is used.



		/	
	seness Factor:	61	
Wor	kability 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: Mary 1. Ball

PLANT #	#:	P-20					Contractor:				
Sample Date	:	8/9/21			Concrete Grade	DM					
Dates Test R	epresents:	8/10/2021	through	8/16/2021			MDOT No.:				- A
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	63-92	Grange Hall	1100	6.65	2.65	37.9				SUD	FRIOR
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%		MATI	ERIALS
Sieve		6AA	26	Α	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	1	Suite 500	
1.5"	1	00.0	10	0.0	100.0	100.0	0.0	0.0	1	Farmingto	n Hills, MI 48336
1"		96.3	10	0.0	100.0	97.8	2.2	2.2			
3/4"		79.0	100	0.0	100.0	87.7	10.2	12.3			
1/2"		45.4	97		100.0	67.9	19.8	32.1			
3/8"		26.0	90		100.0	56.2	11.6	43.8	*Maximum %	Retained must be	above the 3/8" sieve.
#4		4.8	28		98.4	41.1	15.2	58.9	*Any two adja	cent sieves must e	equal 10% except max.,
#8		2.4	8.		85.4	34.0	7.0	66.0	nom. max., #10	00 and #200 sieves	3.
#16		2.0	3.		70.2	27.9	6.2	72.1			6 for each sieve except r
#30		1.8	2.		50.2	20.1	7.7	79.9	· ·	00 and #200 sieves	
#50		1.7	2.		20.6	8.9	11.3	91.1			6 for the 1" sieve when
#100 LBW		1.6 1.5	1.		<u>3.1</u> 0.4	2.2	6.7 1.1	97.8 98.9	a 2" max. size	(nom. Max. 1.5") a	ggregate is used.
Production G		Batch Plant Gra		egate Supplier Gr				on Sample (IPS	2) 2)		
	ess Factor:	66	0 55	ability Factor		36.5		eness Factor:	63		
					-			ability Factor:	36		
	45, 44				JMF Zone		Sieve	Cumulative % Passing	% Retained	Cumulative % Retained	
		52, 41	F7. 40				2"	100.0	0.0	0.0	
				68,40	75, 39		1.5"	100.0	0.0	0.0	
ల్				68, 3	° 1		1"	100.0	0.0	0.0	
Factor (%)			6 0, 36	Producti	ion Gradation		3/4"	89.2	10.8	10.8	
2 35			- 00, 30				1/2"	68.4	20.8	31.6	
		52, 34		1			3/8"	59.9	8.6	40.1	
l it	45, 33		_ <u>L</u>				#4	43.0	16.9	57.0	
ig 30 [_	51,8	68, 3	2		#8	35.9	7.1	64.1	
66	Operating Zone						#16	29.0	6.8	71.0	
0	Boundary				75, 28		#30	21.3	7.7	78.7	
							#50	9.9	11.4	90.1	
25 <u> </u> 40	45	50 55	Coarseness	65 7	0 75	80	#100 LBW	2.4 1.2	7.5 1.2	97.6 98.8	

Approved By:

PREPARED BY: SM, LLC Technical Service

ActionLimits Boundary = - - - - -

PLANT #	#:	P-32					Contractor:					
Sample Date	:	8/9/21		C	Concrete Grade	DM				-		
Dates Test R	epresents:	8/10/2021	through	8/16/2021			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	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%	1	MATE	RIALS	
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior I</u> 30701 W. 2	Materials, LLC 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	10	0.0	100.0	100.0	0.0	0.0]	Farmingtor	n Hills, MI 48336	
1"		96.5	100		100.0	98.1	1.9	1.9]			
3/4"		82.0	10		100.0	90.4	7.7	9.6				
1/2"		46.5	93		100.0	71.0	19.4	29.0				
3/8"		26.7	80		100.0	59.5	11.5	40.5			above the 3/8" sieve.	
#4		5.8	15		96.5	42.4	17.2	57.6			qual 10% except max.,	
#8		2.5	4.	-	83.2	34.6	7.7	65.4	nom. max., #100 and #200 sieves. *% Retained must be at least 4% for each sieve except			
#16 #30		2.1 2.0	2.		66.8 47.8	27.7 20.1	6.9 7.6	72.3 79.9		nom. max., #100 and #200 sieves.		
#30 #50		<u>2.0</u> 1.9	1.		22.7	10.1	10.0	89.9	,		o for the 1" sieve when	
#30 #100		1.8	1.		5.7	3.3	6.8	96.7		(nom. Max. 1.5") ac		
				5	1.0	1.2	2.1	98.8	a 2 max. 5120	(110111. 11107. 1.0) 42	ggregate is used.	
LBW		1.4										
	radation	Batch Plant Gra	-	regate Supplier Gra				on Sample (IPS	6)	_		
Production G	aradation	-	dations 💿 Agg	-			Intial Production		62	1		
Production G Coarsene		O Batch Plant Gra	dations 💿 Agg	regate Supplier Gra	dations	Adjusted WF	Intial Productio	on Sample (IPS				
Production G Coarsene	ess Factor:	O Batch Plant Gra	dations 💿 Agg	regate Supplier Gra	dations 35	Adjusted WF	Intial Productio Coars Work	on Sample (IPS eness Factor:	62	Cumulative		
Production G Coarsene		Batch Plant Gra 62	dations 💿 Agg	regate Supplier Gra	dations	Adjusted WF	Intial Productio	on Sample (IPS eness Factor: ability Factor:	62 36	% Retained		
Coarsene	ess Factor:	O Batch Plant Gra	dations 💿 Agg	regate Supplier Gra	dations 35	Adjusted WF	Intial Productio Coars Work Sieve 2"	on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0	62 36 % Retained 0.0	% Retained 0.0		
Coarsene	ess Factor:	Batch Plant Gra 62	dations 💿 Agg	regate Supplier Grac tability Factor:	dations 35	Adjusted WF	Intial Productio Coars Work Sieve 2" 1.5"	on Sample (IPS 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:	Batch Plant Gra 62	dations Agg Work	67, 40	dations 35 JMF Zone 75, 39	Adjusted WF	Intial Productio Coars Work Sieve 2" 1.5" 1"	on Sample (IPS 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		
Coarsene	ess Factor:	Batch Plant Gra 62	dations Agg Work	67, 40	dations 35 JMF Zone 75, 39	Adjusted WF	Intial Production Coars Work Sieve 2" 1.5" 1" 3/4"	on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0 95.0	62 36 % Retained 0.0 0.0 0.0 5.0	% Retained 0.0 0.0 0.0 5.0		
Coarsene	ess Factor:	Batch Plant Gra	dations Agg Work	67, 40	dations 35 JMF Zone 75, 39	Adjusted WF	Intial Production Coars Work Sieve 2" 1.5" 1" 3/4" 1/2"	on Sample (IPS 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		
Lactor (%)	45, 44	Batch Plant Gra 62	dations Agg Work	67, 40	dations 35 JMF Zone 75, 39	Adjusted WF	Intial Productio Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8"	on Sample (IPS 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 0.0 27.7 39.6		
Lactor (%)	ess Factor:	Batch Plant Gra	dations Agg Work	67, 40 68, 38 roduction Gradation	dations 35 JMF Zone 75, 39	Adjusted WF	Intial Production Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4	on Sample (IPS 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 (%)	45, 44 45, 33	Batch Plant Gra	dations Agg Work	67, 40	dations 35 JMF Zone 75, 39	Adjusted WF	Intial Productio Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8	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	% Retained 0.0 0.0 0.0 0.0 27.7 39.6		
Lactor (%)	45, 44	Batch Plant Gra	dations Agg Work	67, 40 68, 38 roduction Gradation	dations 35 JMF Zone 75, 39	Adjusted WF	Intial Production Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4	on Sample (IPS 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 64.0		
Norkability Factor (%)	45, 44 45, 33 Operating Zone	Batch Plant Gra	dations Agg Work	67, 40 68, 38 roduction Gradation	dations 35 JMF Zone 75, 39	Adjusted WF	Intial Production Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	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 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		
Lactor (%)	45, 44 45, 33 Operating Zone	Batch Plant Gra	dations Agg Work	67, 40 68, 38 roduction Gradation	dations 35 JMF Zone 75, 39	Adjusted WF	Intial Production Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	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 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 5.0 27.7 39.6 57.4 64.0 70.5 79.7		

Approved By: Mart P. Ball

PLANT #	#:	P-35	_				Contractor:			_	
Sample Date	e:	8/9/21	-	(Concrete Grade:	DM				-	
Dates Test R	Represents:	8/10/2021	through	8/16/2021			MDOT No.:			_	
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	58-003	Stoneco	1505	8.97	2.69	50.9					
26A	58-003	Stoneco	350	2.09	2.69	11.8					
2NS	81-093	Burmeister	1100	6.65	2.65	37.2				SUP	ERIOR
		Total Wt	2955	17.70		100.0	< Verify this n	umber is 100%	1		RIALS
Sieve		6AA	26	Α	2NS	Cumulative % Passing	% Retained	Cumulative % Retained			<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	10		100.0	100.0	0.0	0.0	1	Farmingto	n Hills, MI 48336
1"		99.2	10).0	100.0	99.6	0.4	0.4]		
3/4"		79.5	100		100.0	89.6	10.0	10.4			
1/2"		42.2	99	.3	100.0	70.5	19.1	29.5			
3/8"		21.7	76		100.0	57.3	13.1	42.7	*Maximum %	Retained must be	above the 3/8" sieve.
#4		4.5	5.		98.8	39.7	17.6	60.3	*Any two adja	icent sieves must e	qual 10% except max.,
#8		1.8	1.		86.3	33.2	6.6	66.8	· · ·	00 and #200 sieves	
#16		1.7	1.		70.5	27.2	5.9	72.8			6 for each sieve except n
#30		1.5	0.	-	51.6	20.1	7.2	79.9	· · · · ·	00 and #200 sieves	
#50 #100		1.4 1.4	0.		17.9 3.1	7.5	12.6 5.5	92.5 98.1			6 for the 1" sieve when
LBW		1.4	0.	-	3.1 1.0	1.9 0.9	5.5 1.0	98.1 99.1	a 2° max. size	(nom. Max. 1.5") a	ggregate is used.
Production G	Gradation	Batch Plant Gra		egate Supplier Gra			-	on Sample (IPS	5)		
	ess Factor:	64	Work	ability Factor:	33	35.7		eness Factor:	61		
		-						ability Factor:	36		
45		_			JMF Zone			Cumulative	%	Cumulative	
1 1	45, 44				JIVIF ZONE		Sieve	% Passing	Retained	% Retained	
		52, 41					2"	100.0	0.0	0.0	
ू ⁴⁰]		50		68, 38	75, 39		1.5"	100.0	0.0	0.0	
۵			-		I		1"	99.3	0.7	0.7	
to 1			= 60,,36	Production Gra	dation		3/4"	89.1	10.2	10.9	
Factor (%)		Ţ	1		Gauon		1/2"	70.5	18.6	29.5	
ш] >		52, 34	i				3/8"	60.5	10.0	39.5	
lit?	45, 33						#4 #8	44.1 35.6	16.4	55.9	
ig 30 -		56,	51	67, 88, 31			-	27.7	8.5 7.9	64.4 72.3	
ž	Operating Zone						#16 #30				
Ş ∣L	Boundary				75, 28						
2 5								-			
40	45	50 58	5 60	65 70	75	80	LBW	1.0	0.6	98.9	
	Boundary	 505	⁵ Coarseness	⁶⁵ Factor (%)	75, 28	80	#30 #50 #100	20.6 8.7 1.6	7.1 11.8 7.1	79.4 91.3 98.4	

Approved By: Mart P. Ball

PLANT #	#:	P-36	_				Contractor:				
Sample Date	:	8/9/21	-	C	Concrete Grade:	DM				-	
Dates Test R	epresents:	8/10/2021	- through	8/16/2021			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	200	1.22	2.62	6.9					
2NS	63-92	Grange Hall	1100	6.65	2.65	37.9				SUP	ERIOR
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%		MATE	RIALS
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"	9	99.2	100	0.0	100.0	99.6	0.4	0.4			
3/4"		87.2	10		100.0	92.9	6.6	7.1			
1/2"		51.2	93	.7	100.0	72.6	20.3	27.4			
3/8"		28.8	80	-	100.0	59.3	13.3	40.7	*Maximum %	Retained must be	above the 3/8" sieve.
#4		4.1	15		98.4	40.6	18.8	59.4	*Any two adja	cent sieves must e	qual 10% except max.,
#8		2.0	4.		85.4	33.8	6.8	66.2		00 and #200 sieves	
#16		1.7	2.		70.2	27.7	6.1	72.3			for each sieve except n
#30 #50		1.6	2.		50.2 20.6	20.0	7.7 11.2	80.0	,	00 and #200 sieves	
#50 #100		1.6 1.5	1.		20.6	8.8 2.1	6.7	91.2 97.9			for the 1" sieve when
LBW		1.2	1.		0.4	0.9	1.2	97.9 99.1	a z max. size	(nom. Max. 1.5") ag	gregate is used.
Production G	radation	Batch Plant Gra		regate Supplier Gra	••••		-	on Sample (IPS	5)		
Coarsene	ess Factor:	61	Work	ability Factor:	34	36.3		eness Factor:	63		
		-	-		-			ability Factor:	35		
⁴⁵]	-							Cumulative	%	Cumulative	
- 4	45, 44				JMF Zone		Sieve	% Passing	Retained	% Retained	
1		52, 41	$ \rightarrow $				2"	100.0	0.0	0.0	
			58, 39	68, 99	75, 39		1.5"	100.0	0.0	0.0	
Factor (%)			i	68, 38	Ť		1"	99.1	0.9	0.9	
o l				duction Gradation			3/4"	90.3	8.8	9.7	
26 35 -			- 00, 00	IPS			1/2"	69.2	21.1	30.8	
		52, 34		i			3/8"	59.1	10.1	40.9	
lif)	45, 33						#4	41.8 35.1	17.3	58.2	
Workability	ļ		58, 31	688, ³ 31	ı 🚺		#8 #16	28.5	6.6 6.6	64.9 71.5	
ž	Operating Zone						#16 #30	28.5	7.3	71.5	
₽ ∟	Boundary				75, 28		#50	8.7	12.5	91.3	
> ₂₅							#100	1.8	7.0	98.2	
	45	50 55	- co	0.5 70	75	80					
40	45	<u> </u>		Factor (%)	75	00	LBW	0.7	1.0	99.3	

Approved By:

PLANT #	#:	P-39					Contractor:						
Sample Date	:	8/9/21		C	Concrete Grade	DM							
Dates Test R	epresents:	8/10/2021	through	8/16/2021			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	200	1.22	2.62	6.9							
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	Α	2NS	Cumulative % Passing	% Retained	Cumulative % Retained			Materials, LLC 10 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		Farmingto	n Hills, MI 48336		
1"		97.8	100		100.0	98.8	1.2	1.2					
3/4"		85.4	100		100.0	91.9	6.9	8.1					
1/2"		45.9	96		100.0	69.9	22.0	30.1					
3/8"		25.2	87	-	100.0	57.8	12.1	42.2	*Maximum %	Retained must be	above the 3/8" sieve.		
#4		3.7	20		97.6	40.4	17.4	59.6			qual 10% except max.,		
#8		1.6	5.		78.9	31.1	9.3	68.9		om. max., #100 and #200 sieves. *% Retained must be at least 4% for each sieve except m			
#16		1.4	2.		61.2	24.1	7.0	75.9					
#30 #50		1.4 1.3	2.		44.8 22.5	17.9 9.4	6.2 8.5	82.1 90.6		00 and #200 sieves	for the 1" sieve when		
#100		1.2	1.		7.4	3.6	5.8	96.4		(nom. Max. 1.5") ag			
LBW		1.2	1.	-	1.2	1.2	2.4	98.8		(1011: 102: 1.5) 4	ggregate is used.		
roduction G	radation	O Batch Plant Gra	dations 💿 Agg	regate Supplier Gra	dations	Adjusted WF	Intial Production	on Sample (IPS	■ 6)				
Coarsene	ess Factor:	61	Work	ability Factor:	31	33.6	Coars	eness Factor:	63				
45					-		Work	ability Factor:	36				
45	5, 44				JMF Zone		Sieve	Cumulative	%	Cumulative			
1 1	5, 44				51011 20116			% Passing	Retained	% Retained			
		52, 41					2"	100.0	0.0	0.0			
40													
ج ⁴⁰			58,40	68, 38	75, 39		1.5"	100.0	0.0	0.0			
%				68, 38	75, 39		1.5" 1"	100.0	0.0	0.0			
etor (%)			58, 40 60, 36		75, 39		1.5" 1" 3/4"	100.0 89.7	0.0 10.3	0.0 10.3			
Factor (%)				IPS	75, 39		1.5" 1" 3/4" 1/2"	100.0 89.7 70.3	0.0 10.3 19.4	0.0 10.3 29.7			
ty Factor (%)	45.33	52, 34			75, 39		1.5" 1" 3/4" 1/2" 3/8"	100.0 89.7 70.3 59.1	0.0 10.3 19.4 11.2	0.0 10.3 29.7 40.9			
oility Factor (%)	45, 33	52, 34		IPS duction Gradation			1.5" 1" 3/4" 1/2" 3/8" #4	100.0 89.7 70.3 59.1 42.8	0.0 10.3 19.4	0.0 10.3 29.7 40.9 57.2			
(%) 40 00 00 20 20 20 20 20 20 20 20 20 20 20				IPS			1.5" 1" 3/4" 1/2" 3/8"	100.0 89.7 70.3 59.1	0.0 10.3 19.4 11.2 16.3	0.0 10.3 29.7 40.9			
orkability Factor (%)	45, 33 Operating Zone Boundary			IPS duction Gradation			1.5" 1" 3/4" 1/2" 3/8" #4 #8	100.0 89.7 70.3 59.1 42.8 35.5	0.0 10.3 19.4 11.2 16.3 7.3	0.0 10.3 29.7 40.9 57.2 64.5			
Workability Factor (%)	Operating Zone			IPS duction Gradation	2		1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30 #50	100.0 89.7 70.3 59.1 42.8 35.5 29.0 21.2 9.8	0.0 10.3 19.4 11.2 16.3 7.3 6.5 7.7 11.5	0.0 10.3 29.7 40.9 57.2 64.5 71.0 78.8 90.2			
% % % % % % % % % %	Operating Zone		50, 22	IPS duction Gradation	2	80	1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	100.0 89.7 70.3 59.1 42.8 35.5 29.0 21.2	0.0 10.3 19.4 11.2 16.3 7.3 6.5 7.7	0.0 10.3 29.7 40.9 57.2 64.5 71.0 78.8			

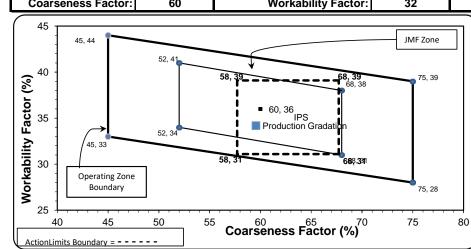
Approved By: Mart P. Ball

PLANT #	#:	P-O2					Contractor:				
Sample Date	:	8/9/21			Concrete Grades	DM	_			-	
Dates Test R	epresents:	8/10/2021	through	8/16/2021			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	200	1.22	2.62	6.9	1				
2NS	63-115	Ray Rd	1100	6.65	2.65	37.9				CUD	EDI
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%		SUP MATE	RIA
Sieve		6AA	20	6A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior</u> 30701 W.	
2"	1	100.0	10	0.0	100.0	100.0	0.0	0.0		Suite 500	
1.5"	1	100.0	10	0.0	100.0	100.0	0.0	0.0		Farmingto	n Hills, M
1"		99.2	10	0.0	100.0	99.6	0.4	0.4			
3/4"		87.2	10	0.0	100.0	92.9	6.6	7.1			
1/2"	:	51.2	93	3.7	100.0	72.6	20.3	27.4			
3/8"		28.8	80).5	100.0	59.3	13.3	40.7	*Maximum %	Retained must be	above the 3
#4		4.1	15	5.0	95.7	39.5	19.8	60.5	*Any two adja	acent sieves must e	qual 10% e
#8		2.0	4	.8	79.9	31.7	7.8	68.3	nom. max., #1	00 and #200 sieves	
#16		1.7	2	.6	64.9	25.7	6.0	74.3	*% Retained	must be at least 4%	for each s
#30		1.6	2	.2	49.2	19.7	6.0	80.3	nom. max., #1	00 and #200 sieves	
#50		1.6	1	.9	25.6	10.7	9.0	89.3	*% Retained	must be at least 8%	for the 1"
#100		1.5	1	.8	6.0	3.2	7.5	96.8	a 2" max. size	(nom. Max. 1.5") ag	gregate is
LBW		1.2	1	.5	0.8	1.1	2.2	98.9			
Production G	radation	O Batch Plant Gra	dations 💿 Agg	regate SupplierG	radations	Adjusted WF	Intial Production	on Sample (IPS	5)		
	ess Factor:	60	Worl	ability Facto	or: 32	34.2		eness Factor:	63	1	
		•		-	•		Work	ability Factor:	35	1	
	15 44				IME Zone		Siovo	Cumulative	%	Cumulative	



als, LLC Rd. VII 48336

3/8" sieve. except max., sieve except max., sieve when is used.



Coars	eness Factor:	63			
Work	ability 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"	95.1	4.9	4.9		
1/2"	74.6	20.5	25.4		
3/8"	59.3	15.3	40.7		
#4	42.1	17.2	57.9		
#8	35.1	7.1	64.9		
#16	29.2	5.9	70.8		
#30	21.9	7.3	78.1		
#50	9.6	12.4	90.4		
#100	2.4	7.2	97.6		
LBW	0.9	1.5	99.1		

Approved By: Mart P. Ball