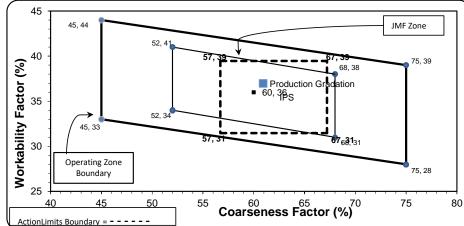
Production	Gradation	Report
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DI ANT.	и.	D 404					_			
PLANT :		P-101					Contractor:			-
Sample Date		6/27/22			Concrete Grade:	DM, 4500HP				
Dates Test R	Represents:	6/28/2022	through	7/4/2022			MDOT No.:			-
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific	%				
	71-47		1560	9.54	Gravity 2.62	Contribution 53.6				
6AA 26A	71-47	Presque Isle Presque Isle	200	1.22	2.62	6.9				
20A 2NS	75-051	Mid Michigan	1150	6.93	2.66	39.5				
2110	10 001	Total Wt	2910	17.69	2.00	100.0	< Verify this n	umber is 100%		SUI M A T
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superio</u> 30701 W
2"	-	100.0	100	0.0	100.0	100.0	0.0	0.0		Suite 50
1.5"		100.0	100	0.0	100.0	100.0	0.0	0.0	1	Farming
1"		100.0	100	0.0	100.0	100.0	0.0	0.0		
3/4"		89.5	100	-	100.0	94.4	5.6	5.6		
1/2"		50.6	98.		100.0	73.4	21.0	26.6		
3/8"		27.5	84.		100.0	60.1	13.3	39.9	*Maximum %	Retained must b
#4		4.6	23.		98.8	43.1	16.9	56.9	*Any two adja	acent sieves mus
#8		2.2	5.0	-	83.4	34.5	8.7	65.5	· · ·	00 and #200 siev
#16		1.7	3.0		66.9	27.6	6.9	72.4		must be at least
#30		1.6	2.4		49.8	20.7	6.9	79.3		00 and #200 sie\
#50		1.5	2.:		24.3	10.6	10.1	89.4		must be at least
#100 LBW		1.4 1.3	2.0		6.5 0.9	3.5 1.2	7.1 2.3	96.5 98.8	a 2" max. size	(nom. Max. 1.5")
							_			
Production G	Gradation	Batch Plant Gra	dations (•) Aggr	egate Supplier G	1	Adjusted WF	Initial Producti	ion Sample (IP	S)	•
Coarsene	ess Factor:	61	Work	ability Factor	r: 34	37.0		eness Factor:	62	
45							Work	ability Factor:	35	
	45, 44				JMF Zone		Sieve	Cumulative	%	Cumulative
-		52,44				-		% Passing	Retained	% Retained
40		52, 41	57.39				2"	100.0	0.0	0.0
?			57, 39	68,	38 75, 39		1.5"	100.0	0.0	0.0
			Pro	duction Gradatio	n		1"	100.0	0.0	0.0
1 2			■ 6 0, 3	duction Gradatio			3/4"	95.0	5.0	5.0
rkability Factor (%)							1/2"	70.5	24.5	29.5
	45, 33	52, 34					3/8"	60.0	10.5	40.0
	40,00		57. 3		104		#4	44.4	15.6	55.6
ig 30		_		0769	,•31		#8	35.5	9.0	64.5
ž	Operating Zone	2					#16	28.5	7.0	71.5



ior Materials, LLC W. 10 Mile Rd. 00 gton Hills, MI 48336

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



Coars	eness Factor:	62	
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"	95.0	5.0	5.0
1/2"	70.5	24.5	29.5
3/8"	60.0	10.5	40.0
#4	44.4	15.6	55.6
#8	35.5	9.0	64.5
#16	28.5	7.0	71.5
#30	21.5	7.0	78.5
#50	10.2	11.3	89.8
#100	3.1	7.1	96.9
LBW	1.3	1.8	98.7

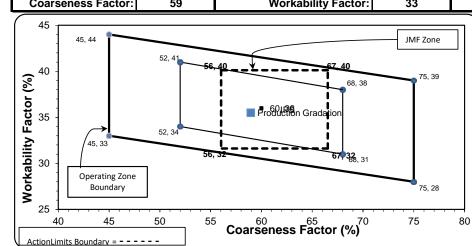
Approved By:

PLANT #	#:	P-102					Contractor:			
Sample Date	:	6/27/22			Concrete Grade	: DM, 4500HP				
Dates Test R	epresents:	6/28/2022	through	7/4/2022			MDOT No.:			
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution]			
6AA	58-003	Stoneco	1600	9.53	2.69	54.2				
26A	58-003	Stoneco	200	1.19	2.69	6.8				
2NS	81-019	Pleasant Lake	1150	6.95	2.65	39.0				SUP
		Total Wt	2950	17.68		100.0	< Verify this n	umber is 100%	-	MATE
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		Superior I 30701 W. 1
2"		100.0	100	0.0	100.0	100.0	0.0	0.0		Suite 500
1.5"		100.0	100	0.0	100.0	100.0	0.0	0.0		Farmingtor
1"		100.0	100	0.0	100.0	100.0	0.0	0.0		
3/4"		84.5	100		100.0	91.6	8.4	8.4		
1/2"		50.6	99	.4	100.0	73.2	18.4	26.8		
3/8"		28.7	87	⁷ .9	100.0	60.5	12.7	39.5	*Maximum %	Retained must be a
#4		4.9	11	.5	99.6	42.3	18.2	57.7	*Any two adja	icent sieves must e
#8		1.6	3.		81.8	33.0	9.3	67.0	nom. max., #1	00 and #200 sieves.
#16		1.2	2.		64.2	25.9	7.2	74.1	*% Retained	must be at least 4%
#30		1.1	2.		46.7	18.9	6.9	81.1	nom. max., #10	00 and #200 sieves
#50		1.0	1.	-	24.9	10.4	8.6	89.6	*% Retained	must be at least 8%
#100		1.0	1.		8.1	3.8	6.6	96.2	a 2" max. size	(nom. Max. 1.5") ag
LBW		0.8	1.	6	1.6	1.2	2.7	98.8		
Production G	radation	Batch Plant Gra	dations 🛛 🔘 Agg	regate Supplier G	iradations	Adjusted WF	Intial Production	on Sample (IPS	S)	
Coarsene	ess Factor:	59	Work	ability Facto	r: 33	35.5	Coars	eness Factor:	61	
45							Work	ability Factor:	36	
	45, 44				JMF Zone		Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
		ED 41						70 T assiriy	Retained	/onceameu



Materials, LLC 10 Mile Rd. on Hills, MI 48336

above the 3/8" sieve. equal 10% except max., 6 for each sieve except max., 6 for the 1" sieve when ggregate is used.



Coar	seness Factor:	61	
Wor	kability Factor:	36	
Sieve	Cumulative	%	Cumulative
51676	% 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 a	#:	P-103					Contractor:					
Sample Date	e:	6/27/22		C	Concrete Grade	DM, 4500HP						
Dates Test R	Represents:	6/28/2022	through	7/4/2022			MDOT No.:			_		
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution						
6AA	58-003	Stoneco	1600	9.53	2.69	54.2						
26A	58-003	Stoneco	200	1.19	2.69	6.8						
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</u> 30701 W. 3	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"		84.5	100		100.0	91.6	8.4	8.4				
1/2"		50.6	99		100.0	73.2	18.4	26.8				
3/8"		28.7	87	.9	100.0	60.5	12.7	39.5	*Maximum %	Retained must be a	above the 3/8" sieve.	
#4		4.9	11		99.6	42.3	18.2	57.7	*Any two adja	cent sieves must e	qual 10% except max.,	
#8		1.6	3.		81.8	33.0	9.3	67.0	nom. max., #100 and #200 sieves.			
#16		1.2	2.		64.2	25.9	7.2	74.1		*% Retained must be at least 4% for each sieve except m		
#30		1.1	2.		46.7	18.9	6.9	81.1		00 and #200 sieves		
#50		1.0	1.		24.9	10.4	8.6	89.6			for the 1" sieve when	
#100 LBW		1.0 0.8	1.	-	8.1 1.6	3.8 1.2	6.6 2.7	96.2 98.8	a 2" max. size	(nom. Max. 1.5") ag	ggregate is used.	
		Batch Plant Gra		regate Supplier Gra	-							
Production G		O						on Sample (IPS	<i>,</i>	l		
Coarsene	ess Factor:	59	Work	ability Factor:	33	35.5		eness Factor:	61			
45							Work	ability Factor:	36		1	
	45, 44				JMF Zone		Sieve	Cumulative	%	Cumulative		
		52, 41						% Passing	Retained	% Retained		
- 40		^{32, 4} 56	40	67 40	_		2"	100.0	0.0	0.0		
?				68, 38	75, 39		1.5" 1"	100.0 99.3	0.0	0.0		
			!				3/4"	99.3 89.2	10.1	10.8		
Factor (%)				n Gradation				70.7	18.5	29.3		
	\rightarrow	52, 34		i			3/8"	60.7	10.0	39.3		
	45, 33	52, 34					#4	44.4	16.3	55.6		
ii a		56,	32	67,32 _{68,31}			#8	35.9	8.5	64.1		
9 30	 Operating Zone			00, 31			#16	27.3	8.6	72.7		
	Operating 2016				75, 28		#30	19.1	8.2	80.9		
orka	Boundary				. 5, 20		1150	7.4	11.7	00.0		
Worka	Boundary						#50	7.4	11.7	92.6		
25 40	Boundary 45	 		65 Factor (%)	75	80	#50 #100 LBW	1.9 0.7	5.6	92.6 98.1 99.3		

Approved BY: Mary 1. Ball

PLANT #	#:	P-12					Contractor:				
Sample Date	:	6/27/22			Concrete Grade:	DM, 4500HP				-	
Dates Test R	epresents:	6/28/2022	through	7/4/2022			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1455	8.90	2.62	50.1					
26A	71-47	Presque Isle	300	1.83	2.62	10.3					
2NS	63-115	Ray Rd	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		<u>Superior I</u> 30701 W. 1	Materials, LLC L0 Mile Rd.
2"		00.0	100	-	100.0	100.0	0.0	0.0		Suite 500	
1.5"		00.0	100		100.0	100.0	0.0	0.0]	Farmingtor	n Hills, MI 48336
1"		98.3	100	-	100.0	99.1	0.9	0.9			
3/4"		74.8	100		100.0	87.4	11.8	12.6			
1/2"		30.8	97		100.0	65.1	22.3	34.9			
3/8"		14.1	87		100.0	55.7	9.3	44.3	*Maximum %	Retained must be	above the 3/8" sieve.
#4		2.9	32		96.8	43.2	12.6	56.8	*Any two adja	icent sieves must e	equal 10% except max.,
#8		2.1	10		80.0	33.8	9.4	66.2	nom. max., #1	00 and #200 sieves	3.
#16		1.9	4.		63.2	26.4	7.3	73.6	*% Retained	must be at least 4%	6 for each sieve except
#30		1.8	3.		47.4	20.0	6.4	80.0	,	00 and #200 sieves	
#50		1.7	2.		26.3	11.5	8.4	88.5			6 for the 1" sieve when
#100		1.7	2.		5.3	3.2	8.3	96.8	a 2" max. size	(nom. Max. 1.5") a	ggregate is used.
LBW		1.4	1.		0.6	1.1	2.1	98.9	J		
Production G	radation	O Batch Plant Gra	dations 💿 Agg	egate Supplier G	aradations	Adjusted WF	Intial Production	on Sample (IPS	6)		
Coarsene	ess Factor:	67	Work	ability Facto	r: 34	36.3	Coars	eness Factor:	63		
45							Work	ability Factor:	36		
_	45, 44							Cumulative	%	Cumulative	
1	,				JMF Zone		Sieve	% Passing	Retained	% Retained	
40		52, 41	57, 40	68, 40)		2"	100.0	0.0	0.0	
⊋ ⁴∿]				68, 3	75, 39		1.5"	100.0	0.0	0.0	
<u>ې</u>			İ		-		1"	99.3	0.7	0.7	
1			■ 60, 36	PS 📕 🗖 rodu	ction Gradation		3/4"	89.0	10.3	11.0	
Factor (%)			i				1/2"	70.3	18.7	29.7	
		52, 34		Ĭ			3/8"	59.9	10.4	40.1	
	45, 33		57.22		22		#4	41.9	18.0	58.1	
ig 30				68,5	31		#8	35.9	6.0	64.1	
Workability	Providence						#16	27.8	8.2	72.2	
<u></u>	Boundary				75, 28		#30	18.9	8.8	81.1	
							#50	6.3	12.6	93.7	

75

80

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

#100

LBW

1.7

1.0

4.6

0.7

98.3

99.0

Approved By: Mary 1. Ball

PREPARED BY: SM, LLC Technical Service

45

ActionLimits Boundary = - - - - -

50

55

25

40

PLANT #	#:	P-32	_				Contractor:				
Sample Date	:	6/27/22			Concrete Grade	: DM, 4500HP					
Dates Test R	epresents:	6/28/2022	through	7/4/2022			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1305	7.98	2.62	44.9					
26A	71-47	Presque Isle	450	2.75	2.62	15.5					
2NS	95-013	Smelter Bay	1150	6.95	2.65	39.6				SUP	ERIOR
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%			RIALS
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained			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"		96.5	100	0.0	100.0	98.4	1.6	1.6			
3/4"		76.8	100		100.0	89.6	8.8	10.4			
1/2"		34.6	97	.3	100.0	70.2	19.4	29.8			
3/8"		15.4	87	-	100.0	60.1	10.1	39.9	*Maximum %	Retained must be	above the 3/8" sieve.
#4		3.2	32		96.7	44.8	15.3	55.2	*Any two adja	cent sieves must e	qual 10% except max.,
#8		2.0	10		84.5	35.9	8.9	64.1	-	00 and #200 sieves	
#16		1.8	4.		69.5	29.0	6.9	71.0			for each sieve except
#30		1.7	3.		49.8	20.9	8.0	79.1	,	00 and #200 sieves	
#50		1.6	2.		24.3	10.7	10.2	89.3			for the 1" sieve when
#100 LBW		1.5 1.1	2.		6.7 1.1	3.7 1.2	7.0 2.5	96.3 98.8	a 2" max. size	(nom. Max. 1.5") a	ggregate is used.
Production G		Batch Plant Gra		egate Supplier Gr		_		on Sample (IPS	5)		
	ess Factor:	62	Work	ability Factor	: 36	38.4		eness Factor:	62		
		-						ability Factor:	36		
⁴⁵]								Cumulative	%	Cumulative	
- 4	45, 44				JMF Zone		Sieve	% Passing	Retained	% Retained	
1		52, 41	5. 40 V	67, 40			2"	100.0	0.0	0.0	
2 ⁴⁰					75, 39		1.5"	100.0	0.0	0.0	
8			∎P	roduction Gradati	bn		1"	100.0	0.0	0.0	
Factor (%)			■ 60, 3 8				3/4"	95.0	5.0	5.0	
te 35				`!			1/2"	72.3	22.8	27.7	
ш́		52, 34	i.	1			3/8"	60.4	11.8	39.6	
i Į	45, 33		!				#4	42.6	17.8	57.4	
Workability			, , , ,	67 , 32,	1		#8	36.0	6.6	64.0	
Å	Operating Zone						#16	29.5	6.5	70.5	
ğ	Boundary				75, 28		#30	20.3	9.2	79.7	
							#50 #100	9.5	10.8	90.5	
					· · · · · · · · · · · · · · · · · · ·			3.4	6.1	96.6	
25 40	45	50 55	b 60	Factor (%)) 75	80	LBW	1.3	2.1	98.7	

Approved By:

PLANT 3 Sample Date		P-35 6/27/22			Concrete Grade:		Contractor:			•	
Dates Test R		6/28/2022	through	7/4/2022	Concrete Grade.	DW, 450011	MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	58-003	Stoneco	1600	9.53	2.69	54.2					
26A	58-003	Stoneco	200	1.19	2.69	6.8					
2NS	81-019	Pleasant Lake	1150	6.95	2.65	39.0				SUP	EF
		Total Wt	2950	17.68		100.0	< Verify this n	umber is 100%		MATE	R
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior</u> 30701 W.	
2"		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 Hi
1"		100.0	100		100.0	100.0	0.0	0.0			
3/4"		84.5	100		100.0	91.6	8.4	8.4			
1/2"		50.6	99		100.0	73.2	18.4	26.8			
3/8"		28.7	87	.9	100.0	60.5	12.7	39.5	*Maximum %	Retained must be	abov
#4		4.9	11	.5	99.6	42.3	18.2	57.7	*Any two adja	icent sieves must e	qual
#8		1.6	3.	7	81.8	33.0	9.3	67.0	nom. max., #10	00 and #200 sieves	
#16		1.2	2.		64.2	25.9	7.2	74.1	*% Retained	must be at least 4%	o for
#30		1.1	2.		46.7	18.9	6.9	81.1	nom. max., #10	00 and #200 sieves	•
#50		1.0	1.		24.9	10.4	8.6	89.6	*% Retained	must be at least 8%	o for t
#100		1.0	1.		8.1	3.8	6.6	96.2	a 2" max. size	(nom. Max. 1.5") ag	jgre
LBW		0.8	1.	6	1.6	1.2	2.7	98.8			
Production G	radation	O Batch Plant Gra	dations 💿 Aggı	regate Supplier G	radations	Adjusted WF	Intial Production	on Sample (IPS	5)		
Coarsene	ess Factor:	59	Work	ability Facto	r: 33	35.5	Coars	eness Factor:	61		
				•	_		Work	ability Factor:	36		
45	45, 44				JMF Zone		Sieve	Cumulative % Passing	% Retained	Cumulative % Retained	
-		52, 41					2"	100.0	0.0	0.0	l
3 ⁴⁰		56,			75, 39		1.5"	100.0	0.0	0.0	l
8							1"	99.3	0.7	0.7	l
jo j			- 60.36				3/4"	89.1	10.2	10.9	l
26 35 -			Produbil	n Gradation			1/2"	70.5	18.6	29.5	
Workability Factor (%)	\rightarrow	52, 34	+	!			3/8"	60.5	10.0	39.5	
Ē	45, 33						#4	44.1	16.4	55.9	
iq 30 1		56,	31	67, 88, 3	31		#8	35.6	8.5	64.4	
ž	Operating Zone	2					#16	27.7	7.9	72.3	
<u></u>	Boundary				75, 28		#30	20.6	7.1	79.4	I
<							#50	8.7	11.8	91.3	
25 +	45	50 55	60	65 7	0 75	80	#100	1.6	7.1	98.4	l

75

80



ials, LLC Rd. MI 48336

ne 3/8" sieve. % except max., h sieve except max., 1" sieve when is used.

1.1

LBW

0.6

98.9

50

55

Coarseness Factor (%)⁷⁰

Approved By:

Mart P. Ball

45

ActionLimits Boundary = - - - - -

40

PLANT #	#:	P-36	_				Contractor:			_		
Sample Date:	:	6/27/22	-		Concrete Grade	DM, 4500HP						
Dates Test R	epresents:	6/28/2022	through	7/4/2022			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	355	2.17	2.62	12.2						
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%	1		ERIALS	
Sieve	(6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained			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	1	Farmingto	n Hills, MI 48336	
1"	9	98.3	100	0.0	100.0	99.2	0.8	0.8	1			
3/4"	-	74.8	100	-	100.0	87.4	11.7	12.6]			
1/2"		30.8	97		100.0	65.1	22.3	34.9				
3/8"		14.1	87	-	100.0	55.6	9.5	44.4	*Maximum %	Retained must be	above the 3/8" sieve.	
#4		2.9	32		97.9	42.5	13.1	57.5	*Any two adja	icent sieves must e	equal 10% except max.,	
#8		2.1	10		84.5	34.3	8.3	65.7		00 and #200 sieves		
#16		1.9	4.		70.5	28.2	6.1	71.8		$^{\ast }\%$ Retained must be at least 4% for each sieve except r		
#30		1.8	3.		53.6	21.6	6.6	78.4	· · · · ·	00 and #200 sieves		
#50		1.7	2.		26.7	11.3 2.7	10.3	88.7			6 for the 1" sieve when	
#100 LBW		<u>1.7</u> 1.4	2.		4.0	1.1	8.6 1.6	97.3 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	6)			
Coarsene	ss Factor:	67	Work	ability Factor	: 34	36.8		eness Factor:	63			
				,,,.,,,.,,.,,.,,.,,.,,,				ability Factor:	35			
45								Cumulative	%	Cumulative		
4	5, 44				JMF Zone		Sieve	% Passing	Retained	% Retained		
1		52, 41					2"	100.0	0.0	0.0		
			58, 39	68, 99	75, 39		1.5"	100.0	0.0	0.0		
<u>گ</u>				68, 38			1"	99.1	0.9	0.9		
Factor (%)			6 0, 36	Produ	uction Gradation		3/4"	90.3	8.8	9.7		
5 35			- 00, 30	IPS			1/2"	69.2	21.1	30.8		
		52, 34		i			3/8"	59.1	10.1	40.9		
lity	45, 33						#4	41.8	17.3	58.2		
Norkability		_	58, 31	68,3	31		#8	35.1	6.6	64.9		
8	Operating Zone						#16 #30	28.5 21.2	6.6 7.3	71.5 78.8		
§]L	Boundary				75, 28		#30 #50	8.7	12.5	78.8 91.3		
> 25							#30 #100	0.7 1.8	7.0	91.3		
40	45	50 55	5 Coarseness	_65 70) 75	80	LBW	0.7	1.0	99.3		
	10		^	E - + + + + (0/)	, ,,,	<u> </u>		0.7	1.0	99.5		

Approved By:

PLANT #		P-39					Contractor:			-	
Sample Date		6/27/22		C	Concrete Grade	DM, 4500HP					
Dates Test R	epresents:	6/28/2022	through	7/4/2022			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	1100	6.65	2.65	37.9				SUP	ERIOR
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%			RIALS
Sieve		6AA	26	6A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		Superior I 30701 W. 1	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		0.0	100.0	100.0	0.0	0.0		Farmingtor	n Hills, MI 48336
1"		100.0		0.0	100.0	100.0	0.0	0.0			
3/4"		89.5		0.0	100.0	94.2	5.8	5.8			
1/2"		50.6		3.3	100.0	72.6	21.6	27.4			
3/8"		27.5	84		100.0	58.9	13.7	41.1			above the 3/8" sieve.
#4		4.6	23		97.2	41.0	17.9	59.0			qual 10% except max.,
#8		2.2		.0	83.4	33.1	7.8	66.9	-	00 and #200 sieves.	
#16 #30		1.7 1.6		.0 .4	68.0 50.9	26.9 20.3	6.2 6.6	73.1 79.7			for each sieve except
#30 #50		1.5		.4 .2	26.4	11.0	9.3	89.0	-	00 and #200 sieves	for the 1" sieve when
#100		1.4		.0	9.2	4.4	6.6	95.6		(nom. Max. 1.5") ag	
LBW		1.3	1		2.0	1.6	2.8	98.4	a 2 111ax. 3126	(1011. Max. 1.5) ag	gregate is used.
		_		regate Supplier Gra	adations	Adjusted M/E					
Production G	radation	Batch Plant Gra	dations 🕑 Agg	legate Supplier Ore	duciónio	Adjusted WF	Intial Productio	on Sample (IPS	5)		
	radation ss Factor:	Batch Plant Gra 61			1	35.6		on Sample (IPS eness Factor:	63	1	
Coarsene		0		kability Factor:	1		Coars	eness Factor:	63]	
Coarsene	ess Factor:	0			33		Coars Work		63 36	Cumulative	
Coarsene		0			1		Coars	eness Factor: ability Factor:	63	Cumulative % Retained	
Coarsene	ess Factor:	0			33		Coars Work Sieve 2"	eness Factor: ability Factor: Cumulative % Passing 100.0	63 36 % Retained 0.0	% Retained 0.0	
Coarsene	ess Factor:	61		kability Factor:	33		Coars Work Sieve	eness Factor: ability Factor: Cumulative % Passing	63 36 % Retained	% Retained	
Coarsene	ess Factor:	61			33 JMF Zone		Coars Work Sieve 2" 1.5" 1"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0	63 36 % Retained 0.0 0.0 0.0	% Retained 0.0 0.0 0.0	
Coarsene 45 40	ess Factor:	61	58, 40	kability Factor:	33 JMF Zone		Coars Work Sieve 2" 1.5" 1" 3/4"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0 89.7	63 36 % Retained 0.0 0.0 0.0 10.3	% Retained 0.0 0.0 0.0 10.3	
Coarsene 45 40	ess Factor:	61	58, 40	kability Factor:	33 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 89.7 70.3	63 36 % Retained 0.0 0.0 0.0 10.3 19.4	% Retained 0.0 0.0 0.0 10.3 29.7	
Eactor (%)	Pess Factor:	61	58, 40	kability Factor:	33 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 89.7 70.3 59.1	63 36 % Retained 0.0 0.0 0.0 10.3 19.4 11.2	% Retained 0.0 0.0 0.0 10.3 29.7 40.9	
Eactor (%)	ess Factor:	61	58, 40	kability Factor:	33 JMF Zone 75, 39		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 100.0 89.7 70.3 59.1 42.8	63 36 % <u>Retained</u> 0.0 0.0 10.3 19.4 11.2 16.3	% Retained 0.0 0.0 0.0 0.0 29.7 40.9 57.2	
Eactor (%)	Pess Factor:	61	58, 40	kability Factor:	33 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 89.7 70.3 59.1 42.8 35.5	63 36 % Retained 0.0 0.0 0.0 10.3 19.4 11.2 16.3 7.3	% Retained 0.0 0.0 10.3 29.7 40.9 57.2 64.5	
Eactor (%)	255 Factor:	61	58, 40	kability Factor:	33 JMF Zone 75, 39 2		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 89.7 70.3 59.1 42.8 35.5 29.0	63 36 % Retained 0.0 0.0 0.0 10.3 19.4 11.2 16.3 7.3 6.5	% Retained 0.0 0.0 10.3 29.7 40.9 57.2 64.5 71.0	
Factor (%)	ess Factor:	61	58, 40	kability Factor:	33 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 89.7 70.3 59.1 42.8 35.5 29.0 21.2	63 36 % <u>Retained</u> 0.0 0.0 10.3 19.4 11.2 16.3 7.3 6.5 7.7	% Retained 0.0 0.0 10.3 29.7 40.9 57.2 64.5 71.0 78.8	
45 40 40 35 35 40 40 40 40 40 40 40 40 40 40 40 40 40	255 Factor:	61	58, 40	kability Factor:	33 JMF Zone 75, 39 2		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 89.7 70.3 59.1 42.8 35.5 29.0	63 36 % Retained 0.0 0.0 0.0 10.3 19.4 11.2 16.3 7.3 6.5	% Retained 0.0 0.0 10.3 29.7 40.9 57.2 64.5 71.0	

Approved By: Mart P. Ball

PLANT #	#:	P-02					Contractor:			<u>-</u>	
Sample Date	:	6/27/22			Concrete Grade:	DM, 4500HP					
Dates Test R	epresents:	6/28/2022	through	7/4/2022			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1455	8.90	2.62	50.1					
26A	71-47	Presque Isle	300	1.83	2.62	10.3					
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6				SUP	ERIOR
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%	•		ERIALS
Sieve	(6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained			Materials, LLC 10 Mile Rd.
2"	1	00.0	100).0	100.0	100.0	0.0	0.0	1	Suite 500	
1.5"		00.0	100		100.0	100.0	0.0	0.0]	Farmingto	n Hills, MI 48336
1"		98.3	100		100.0	99.1	0.9	0.9]		
3/4"		74.8	100	-	100.0	87.4	11.8	12.6	1		
1/2"		30.8	97		100.0	65.1	22.3	34.9	1		
3/8"		14.1	87		100.0	55.7	9.3	44.3			above the 3/8" sieve.
#4		2.9	32	-	96.8	43.2	12.6	56.8			equal 10% except max.
#8		2.1	10		80.0	33.8	9.4	66.2		00 and #200 sieves	
#16		1.9	4.		63.2	26.4	7.3	73.6			6 for each sieve except
#30 #50		1.8 1.7	3.		47.4 26.3	20.0 11.5	6.4 8.4	80.0 88.5	· · · ·	00 and #200 sieves	
#50 #100		1.7	2.		5.3	3.2	8.3	96.8			6 for the 1" sieve when
H BW		1.4	1.		0.6	<u> </u>	2.1	98.9	a z max. size	(nom. Max. 1.5") a	ggregate is used.
Production G		Batch Plant Gra		egate SupplierGra				on Sample (IPS	⊿ 6)		
Coarsene	ess Factor:	67	Work	ability Factor	: 34	36.3		eness Factor:	ŕ	1	
		-	-	,	-			ability Factor:			
45	15, 44				JMF Zone		Sieve	Cumulative	%	Cumulative	
4		52, 41			L			% Passing	Retained	% Retained	
40			¥	00			<u>2"</u> 1.5"	100.0 100.0	0.0	0.0	
%			58, 39	68, 39 68, 38	75, 39		1.5 1"	100.0	0.0	0.0	
ž 1				_1			3/4"	95.1	4.9	4.9	
Factor (%)			■ 60, 36	IPS	tion Gradation		1/2"	74.6	20.5	25.4	
	\rightarrow	52, 34	1				3/8"	59.3	15.3	40.7	
5	45, 33	02, 34		i			#4	42.1	17.2	57.9	
			58. 31	6 8 8,33	n		#8	35.1	7.1	64.9	
Workability	I Operating Zone	7		009.04			#16	29.2	5.9	70.8	
5	Boundary				75, 28		#30	21.9	7.3	78.1	
					, 20		#50	9.6	12.4	90.4	
25 +		50 54	5 60	65 7(75		#100	2.4	7.2	97.6	

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LBW

0.9

1.5

99.1

PREPARED BY: SM, LLC Technical Service

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ActionLimits Boundary = - - - - -

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

Approved By: Mart P. Ball