Production	Gradation	Report
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PLANT #	#:	P-101					Contractor:			
Sample Date	:	7/31/23			Concrete Grade:	DM, 4500HP				•
Dates Test R	epresents:	8/1/2023	through	8/7/2023			MDOT No.:			_
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution				
6AA	71-47	Presque Isle	1650	10.09	2.62	56.9				
26A	71-47	Presque Isle	100	0.61	2.62	3.4				
2NS	75-051	Mid Michigan	1150	6.93	2.66	39.7				é
		Total Wt	2900	17.63		100.0	< Verify this n	umber is 100%	_	S
Sieve	l	6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Sup</u> 307(
2"	1	100.0	100	0.0	100.0	100.0	0.0	0.0		Suite
1.5"	1	100.0	100	0.0	100.0	100.0	0.0	0.0		Farm
1"		95.5	100	0.0	100.0	97.4	2.6	2.6		
3/4"		71.1	100		100.0	83.6	13.9	16.4		
1/2"		35.0	97	.2	100.0	62.9	20.6	37.1		
3/8"		24.3	89		100.0	56.6	6.4	43.4	*Maximum %	Retained m
#4		5.0	23	.2	96.8	42.0	14.5	58.0	*Any two adja	icent sieves
#8		2.1	4.		82.9	34.2	7.8	65.8	nom. max., #1	00 and #200
#16		1.9	2.		68.5	28.3	5.9	71.7	*% Retained	must be at le
#30		1.8	1.	-	52.0	21.7	6.6	78.3	nom. max., #1	00 and #200
#50		1.7	1.		24.2	10.6	11.1	89.4	*% Retained	must be at le
#100		1.6	1.		5.9	3.3	7.3	96.7	a 2" max. size	(nom. Max.
LBW		1.4	1.	2	1.3	1.4	1.9	98.6		
Production G	radation	O Batch Plant Gra	dations 💿 Agg	regate Supplier Gr	adations	Adjusted WF	Initial Producti	on Sample (IP	S)	
Coarsene	ess Factor:	66	Work	ability Factor	: 34	36.7	Coars	eness Factor:	62	
45							Work	ability Factor:	35	
	45, 44				JMF Zone		Sieve	Cumulative	%	Cumula
	,	50.44			3111 20112		Sleve	% Passing	Retained	% Retai
10		52, 41					2"	100.0	0.0	0.0
ू ⁴⁰			57,39	68, 35	75, 39		1.5"	100.0	0.0	0.0
<u>ຼ</u>							1"	100.0	0.0	0.0
<u></u>			■ 60, 3	Be Freduct	tion Gradatior		3/4"	95.0	5.0	5.0
5 35		L.					1/2"	70.5	24.5	29.5
		52, 34		i			3/8"	60.0	10.5	40.0
kability Factor (%)	45, 33		57, 31	═╼╼╼┛┟			#4	44.4	15.6	55.6
ig 30 -		_	51, 51	67 ₆ 3,	31		#8	35.5	9.0	64.5
	Operating Zone	<u>, </u>					#16	28.5	7.0	71.5

80



perior Materials, LLC 01 W. 10 Mile Rd. te 500 mington Hills, MI 48336

nust be above the 3/8" sieve. must equal 10% except max., sieves. least 4% for each sieve except max., sieves. least 8% for the 1" sieve when 1.5") aggregate is used.

------75, 28 Work Operating Zone Boundary 25 $\textbf{Coarseness Factor (\%)}^{60}$ 50 40 45 55 75

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

PREPARED BY: SM, LLC Technical Service

ActionLimits Boundary = - - - - -

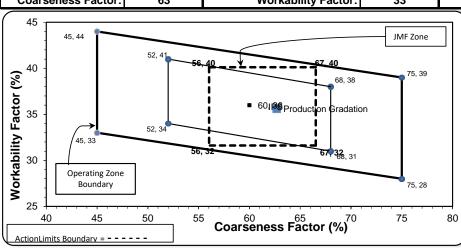
Approved By:

PLANT #	#:	P-102					Contractor:			
Sample Date	:	7/31/23		(Concrete Grade	: DM, 4500HP				-
Dates Test R	epresents:	8/1/2023	through	8/7/2023			MDOT No.:			
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution				
6AA	58-003	Stoneco	1575	9.38	2.69	53.4				
26A	58-003	Stoneco	225	1.34	2.69	7.6				
2NS	81-019	Pleasant Lake	1150	6.95	2.65	39.0				SUPE
		Total Wt	2950 17.68			100.0	< Verify this n	umber is 100%		MATE
Sieve		6AA	26	6A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior M</u> 30701 W. 10
2"	100.0		10	0.0	100.0	100.0	0.0	0.0		Suite 500
1.5"		100.0	10	0.0	100.0	100.0	0.0	0.0		Farmington
1"		100.0	-	0.0	100.0	100.0	0.0	0.0		
3/4"		83.5	-	0.0	100.0	91.2	8.8	8.8		
1/2"		46.1	99		100.0	71.2	20.0	28.8		
3/8"		23.0		9.2	100.0	58.1	13.1	41.9		Retained must be ab
#4		3.9).2	98.1	41.1	17.0	58.9		icent sieves must equ
#8		1.9	-	.7	81.6	33.1	8.0	66.9	,	00 and #200 sieves.
#16 #20		1.4		.9 .5	63.6 44.7	25.8	7.3 7.5	74.2 81.7		must be at least 4% f
#30 #50		1.2		.5 .3	22.9	18.3 9.7	8.5	90.3		00 and #200 sieves. must be at least 8% f
#100		1.1		.2	6.1	3.1	6.6	96.9		(nom. Max. 1.5") agg
LBW		1.1		.1	1.3	1.3	1.9	98.7	a 2 max. 5120	(nom: wax: 1.5) agg
Production G	radation	O Batch Plant Gra	dations () Agg	regate Supplier Gra	dations	Adjusted WF	Intial Production	on Sample (IPS	■ 6)	
Coarsene	ess Factor:	63	Worl	ability Factor:	33	35.6	Coars	eness Factor:	61	
45							Work	ability Factor:	36	
	15, 44				JMF Zone		Cieve	Cumulative	%	Cumulative
1	io,				Jivii 2011e		Sieve	% Passing	Retained	% Retained
		52, 41 56	40	67_40			2"	100.0	0.0	0.0
گ ⁴⁰				68, 38	75, 39		1.5"	100.0	0.0	0.0
ల్			i				1"	99.3	0.7	0.7
			•	• 1			0/4	00.0	40.4	10.0



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.



Coars	seness Factor:	61	
Worl	ability Factor:	36	
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	99.3	0.7	0.7
3/4"	89.2	10.1	10.8
1/2"	70.7	18.5	29.3
3/8"	60.7	10.0	39.3
#4	44.4	16.3	55.6
#8	35.9	8.5	64.1
#16	27.3	8.6	72.7
#30	19.1	8.2	80.9
#50	7.4	11.7	92.6
#100	1.9	5.6	98.1
LBW	0.7	1.2	99.3
	•		

Approved By: Mary P. Ball

PLANT	#:	P-103					Contractor:				
Sample Date		7/31/23			Concrete Grade	DM, 4500HP					
Dates Test F	Represents:	8/1/2023	through	8/7/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	58-003	Stoneco	1575	9.38	2.69	53.4					
26A	58-003	Stoneco	225	1.34	2.69	7.6					
2NS	81-019	Pleasant Lake	1150	6.95	2.65	39.0				SUP	ERIOR
		Total Wt	2950	17.68		100.0	< Verify this n	umber is 100%			RIALS
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		Superior 30701 W. :	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		Farmingto	n Hills, MI 48336
1"		100.0	10	0.0	100.0	100.0	0.0	0.0			
3/4"		83.5	10	0.0	100.0	91.2	8.8	8.8			
1/2"		46.1	99).1	100.0	71.2	20.0	28.8			
3/8"		23.0	89	0.2	100.0	58.1	13.1	41.9	*Maximum %	Retained must be a	above the 3/8" sieve.
#4	 	3.9	10.2		98.1	41.1	17.0	58.9	*Any two adjacent sieves must equal 10% excep		
#8	 	1.9	3		81.6	33.1	8.0	66.9	nom. max., #100 and #200 sieves.		
#16		1.4	2		63.6	25.8	7.3	74.2	*% Retained must be at least 4% for each sieve except		
#30	 	1.2	2.5 2.3		44.7	18.3	7.5	81.7	,	00 and #200 sieves	
#50	 	1.2		-	22.9	9.7	8.5	90.3			for the 1" sieve when
#100 LBW	 	1.1 1.1	2	2	6.1 1.3	3.1 1.3	6.6 1.9	96.9 98.7	a 2" max. size	(nom. Max. 1.5") ag	ggregate is used.
	<u> </u>	Batch Plant Gra		regate Supplier Gra	-	-	-		•		
roduction G		Ŭ		5 11	33	Adjusted WF 35.6		on Sample (IPS		1	
Coarsen	ess Factor:	63	wor	ability Factor:	33	35.0		eness Factor:	61		
45)	WORK	ability Factor:	36	Ourselation	
	45, 44				JMF Zone		Sieve	Cumulative	% Detained		
-		52, 41					2"	% Passing 100.0	Retained 0.0	% Retained 0.0	
40		56,	40	67.40	75, 39		1.5"	100.0	0.0	0.0	
				68, 38	75, 39		1"	99.3	0.0	0.7	
8								00.0	-	-	
or (%				1			3/4"	89.2	10.1	10.8	
% ctor (%			■ 601	Production Gradatio	on		3/4"	89.2 70.7	10.1 18.5	10.8 29.3	
Factor (%	\rightarrow	52. 34	■ 60j i3e	Production Gradatio	on					10.8 29.3 39.3	
<u>щ</u> –	45, 33	52, 34	• 601 36	Production Gradatio	on		3/4" 1/2"	70.7	18.5	29.3	
bility Factor (%	45, 33	52, 34		Production Gradatio	on		3/4" 1/2" 3/8"	70.7 60.7 44.4 35.9	18.5 10.0	29.3 39.3 55.6 64.1	
kability Factor (%		56,			n		3/4" 1/2" 3/8" #4	70.7 60.7 44.4	18.5 10.0 16.3	29.3 39.3 55.6	
orkability Factor (%	45, 33 Operating Zone Boundary	56,			on 75, 28		3/4" 1/2" 3/8" #4 #8 #16 #30	70.7 60.7 44.4 35.9 27.3 19.1	18.5 10.0 16.3 8.5 8.6 8.2	29.3 39.3 55.6 64.1 72.7 80.9	
Workability	Operating Zone	56,					3/4" 1/2" 3/8" #4 #8 #16 #30 #50	70.7 60.7 44.4 35.9 27.3 19.1 7.4	18.5 10.0 16.3 8.5 8.6 8.2 11.7	29.3 39.3 55.6 64.1 72.7 80.9 92.6	
Workability Factor (%	Operating Zone	56,	32			80	3/4" 1/2" 3/8" #4 #8 #16 #30	70.7 60.7 44.4 35.9 27.3 19.1	18.5 10.0 16.3 8.5 8.6 8.2	29.3 39.3 55.6 64.1 72.7 80.9	

Approved BY: Mary P. Ball

#:	14					Contractor:				
-	7/31/23		(Concrete Grade	: DM, 4500HP					
epresents:	8/1/2023	through	8/7/2023			MDOT No.:				
Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution				Γ	
58-003	Stoneco	1600	9.53	2.69	54.1					
58-003	Stoneco	260	1.55	2.69	8.8				L	
19-04	Schlegel			2.67					Bui	lders'
	Total Wt	2960	17.68		100.0	< Verify this n	umber is 100%	•		DI-MIX
6	AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Builders l</u>	
1(0.0	100).0	100.0	100.0	0.0	0.0	1	Suite 500	
				100.0	100.0	0.0	0.0	1	Farmingto	n Hills, MI 48336
				100.0	100.0	0.0	0.0]		
8	3.5			100.0			8.9			
							29.2			
							42.6	*Maximum %	Retained must be	above the 3/8" sieve.
		-			-			*Any two adjacent sieves must equal 10% except max.		
								nom. max., #100 and #200 sieves.		
								*% Retained must be at least 4% for each sieve except r		
				-				nom. max., #100 and #200 sieves.		
								*% Retained must be at least 8% for the 1" sieve when		
				14.3	6.2	11.2	93.8			
,	1.1	2.	2	2.7	1.8	4.4	98.2		must be at least 8% (nom. Max. 1.5") a	
		2. 2.	2 1	2.7 0.2	1.8 0.9	4.4 0.9	98.2 99.1	a 2" max. size		
	1.1 1.1	2. 2. dations () Aggr	2	2.7 0.2 adations	1.8 0.9	4.4 0.9 Intial Productio	98.2	a 2" max. size S)		
Gradation	1.1 1.1) Batch Plant Gra	2. 2. dations () Aggr	2 1 regate Supplier Gra	2.7 0.2 adations	1.8 0.9 Adjusted WF	4.4 0.9 Intial Productio Coars	98.2 99.1 on Sample (IPS eness Factor:	a 2" max. size S)		
Gradation	1.1 1.1) Batch Plant Gra	2. 2. dations () Aggr	2 1 regate Supplier Gra	2.7 0.2 adations	1.8 0.9 Adjusted WF	4.4 0.9 Intial Productio Coars	98.2 99.1 on Sample (IPS	a 2" max. size		
Gradation	1.1 1.1) Batch Plant Gra	2. 2. dations	2 1 regate Supplier Gra ability Factor :	2.7 0.2 adations 35	1.8 0.9 Adjusted WF	4.4 0.9 Intial Productio Coars Work	98.2 99.1 on Sample (IPS eness Factor: ability Factor: Cumulative	a 2" max. size S) 63 36 %	(nom. Max. 1.5") a Cumulative	
Gradation	1.1 1.1 O Batch Plant Gra 65	2. 2. dations () Aggr	2 1 regate Supplier Gra ability Factor: 68, 40	2.7 0.2 adations 35 JMF Zone	1.8 0.9 Adjusted WF	4.4 0.9 Intial Productio Coars Work Sieve	98.2 99.1 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0	a 2" max. size 63 36 % Retained	(nom. Max. 1.5") a Cumulative <u>% Retained</u> 0.0 0.0	
Gradation	1.1 1.1 O Batch Plant Gra 65	2. 2. dations	2 1 regate Supplier Gra ability Factor: 68, 40 68, 38	2.7 0.2 adations 35 JMF Zone	1.8 0.9 Adjusted WF	4.4 0.9 Intial Production Coars Work Sieve 2" 1.5" 1"	98.2 99.1 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3	a 2" max. size 63 63 63 63 64 63 64 60 0.0 0.0 0.0 0.7	(nom. Max. 1.5") a Cumulative % Retained 0.0 0.0 0.7	
Gradation	1.1 1.1 O Batch Plant Gra 65	2. 2. dations • Aggr Work	2 1 regate Supplier Gra ability Factor: 68, 40 68, 38 Production	2.7 0.2 adations 35 JMF Zone	1.8 0.9 Adjusted WF	4.4 0.9 Intial Production Coars Work Sieve 2" 1.5" 1" 3/4"	98.2 99.1 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.0	a 2" max. size 63 63 63 86 96 Retained 0.0 0.0 0.0 0.7 10.3	(nom. Max. 1.5") a Cumulative % Retained 0.0 0.0 0.7 11.0	
Gradation	1.1 1.1 O Batch Plant Gra 65	2. 2. dations	2 1 regate Supplier Gra ability Factor: 68, 40 68, 38 Production	2.7 0.2 adations 35 JMF Zone	1.8 0.9 Adjusted WF	4.4 0.9 Intial Production Coars Work Sieve 2" 1.5" 1" 3/4" 1/2"	98.2 99.1 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.0 70.3	a 2" max. size 63 63 63 64 76 8 8 8 8 9 8 8 9 8 9 8 9 9 9 9 9 9 9 9 9 9 9 9 9	(nom. Max. 1.5") a Cumulative % Retained 0.0 0.0 0.7 11.0 29.7	
Bradation ess Factor:	1.1 1.1 O Batch Plant Gra 65	2. 2. dations • Aggr Work	2 1 regate Supplier Gra ability Factor: 68, 40 68, 38 Production	2.7 0.2 adations 35 JMF Zone	1.8 0.9 Adjusted WF	4.4 0.9 Intial Production Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8"	98.2 99.1 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.0 70.3 59.9	a 2" max. size 63 63 63 8 8 8 8 8 9 8 8 9 8 9 8 9 9 9 9 9 9 9 9 9 9 9 9 9	(nom. Max. 1.5") a Cumulative % Retained 0.0 0.0 0.7 11.0 29.7 40.1	
Gradation	1.1 1.1 Batch Plant Gra 65 52, 41	2. 2. dations • Aggr Work	2 1 regate Supplier Gra ability Factor: 68, 40 68, 38 Production PS	2.7 0.2 adations JMF Zone Gradation	1.8 0.9 Adjusted WF	4.4 0.9 Intial Production Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4	98.2 99.1 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.0 70.3 59.9 41.9	a 2" max. size 63 63 63 64 86 76 87 76 76 76 76 76 76 76 76 76 7	(nom. Max. 1.5") a Cumulative % Retained 0.0 0.0 0.7 11.0 29.7 40.1 58.1	
Bradation ess Factor:	1.1 1.1 Batch Plant Gra 65 52, 41	2. 2. dations • Aggr Work	2 1 regate Supplier Gra ability Factor: 68, 40 68, 38 Production	2.7 0.2 adations JMF Zone Gradation	1.8 0.9 Adjusted WF	4.4 0.9 Intial Production Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8	98.2 99.1 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.0 70.3 59.9 41.9 35.9	a 2" max. size 63 63 63 63 64 86 76 76 76 70 70 70 70 70 70 70 70 70 70	(nom. Max. 1.5") a Cumulative % Retained 0.0 0.0 0.7 11.0 29.7 40.1 58.1 64.1	
Gradation ess Factor:	1.1 1.1 Batch Plant Gra 65 52, 41	2. 2. dations • Aggr Work	2 1 regate Supplier Gra ability Factor: 68, 40 68, 38 Production PS	2.7 0.2 adations JMF Zone Gradation	1.8 0.9 Adjusted WF	4.4 0.9 Intial Production Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	98.2 99.1 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.0 70.3 59.9 41.9 35.9 27.8	a 2" max. size 63 63 63 64 76 84 86 76 76 76 76 76 76 76 76 76 7	Cumulative % Retained 0.0 0.7 11.0 29.7 40.1 58.1 64.1 72.2	
6radation ess Factor:	1.1 1.1 Batch Plant Gra 65 52, 41	2. 2. dations • Aggr Work	2 1 regate Supplier Gra ability Factor: 68, 40 68, 38 Production PS	2.7 0.2 adations JMF Zone Gradation	1.8 0.9 Adjusted WF	4.4 0.9 Intial Production Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	98.2 99.1 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.0 70.3 59.9 41.9 35.9 27.8 18.9	a 2" max. size 63 63 63 64 76 84 84 85 85 85 85 85 85 85 85 85 85	(nom. Max. 1.5") a Cumulative % Retained 0.0 0.0 0.7 11.0 29.7 40.1 58.1 64.1 72.2 81.1	
Gradation ess Factor:	1.1 1.1 Batch Plant Gra 65 52, 41	2. 2. dations • Aggr Work	2 1 regate Supplier Gra ability Factor: 68, 40 68, 38 Production PS	2.7 0.2 adations JMF Zone	1.8 0.9 Adjusted WF	4.4 0.9 Intial Production Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	98.2 99.1 on Sample (IPS eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.0 70.3 59.9 41.9 35.9 27.8	a 2" max. size 63 63 63 64 76 84 86 76 76 76 76 76 76 76 76 76 7	Cumulative % Retained 0.0 0.7 11.0 29.7 40.1 58.1 64.1 72.2	
)	epresents: Pit # 58-003 58-003 19-04 6 10 10 10 10 10 10 10 10 10 10	7/31/23 epresents: 8/1/2023 Pit # Source 58-003 Stoneco 58-003 Stoneco	7/31/23 epresents: 7/31/23 Pit # Source Weight (ssp) 58-003 Stoneco 1600 58-003 Stoneco 260 19-04 Schlegel 1100 Total Wt 2960 6AA 26 100.0 100 100.0 100 100.0 100 100.0 100 100.0 100 100.0 100 100.0 100 100.0 100 100.0 100 100.0 100 100.0 100 100.0 100 100.0 100 100.0 100 100.0 100 100.0 100 100.0 100 10.9 3.9 1.9 3. 1.4 2. 1.2 2.	7/31/23 through 8/7/2023 Pit # Source Weight (ssp) ft ³ 58-003 Stoneco 1600 9.53 58-003 Stoneco 260 1.55 19-04 Schlegel 1100 6.60 Total Wt 2960 17.68 6AA 26A 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 101.0 100.0 100.0 100.0 100.0 100.0 101.0 100.0 100.0 101.0 100.0 100.0 101.0 100.0 100.0 46.1 99.1 3.7 1.9 3.7 1.4 1.2 2.5 1.2	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	7/31/23 Concrete Grade: DM, 4500HP epresents: 8/1/2023 through 8/7/2023 Pit # Source Weight (ssp) ft ³ Specific Gravity % Contribution 58-003 Stoneco 1600 9.53 2.69 54.1 58-003 Stoneco 260 1.55 2.69 8.8 19-04 Schlegel 1100 6.60 2.67 37.2 Total Wt 2960 17.68 100.0 100.0 6AA 26A 2NS Cumulative % Passing 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 3.5 100.0 100.0 57.4 </td <td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td> <td>T/31/23 Concrete Grade: DM, 4500HP MDOT No.: Pit # Source Weight (sso) ft³ Specific Gravity % Contribution 58-003 Stoneco 1600 9.53 2.69 54.1 58-003 Stoneco 260 1.55 2.69 8.8 19-04 Schlegel 1100 6.60 2.67 37.2 Total Wt 2960 17.68 100.0 Cumulative % Passing Retained Cumulative % Retained 100.0 100.0 100.0 100.0 0.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 0.0 100.0 100.0 100.0 100.0 20.3 29.2 23.0</td> <td>T/31/23 Concrete Grade: DM, 4500HP epresents: 8/1/2023 through 8/7/2023 Pit # Source Weight (ssp) ft³ Specific Gravity MDOT No.: Pit # Source Weight (ssp) ft³ Specific Gravity Contribution 58-003 Stoneco 1600 9.53 2.69 54.1 58-003 Stoneco 260 1.55 2.69 8.8 19-04 Schlegel 1100 6.60 2.67 37.2 Total Wt 2960 17.68 100.0 c Verify this Verify this</td> <td>Image: 1/31/23 Concrete Grade: DM, 4500HP MDOT No.: Pit # Source Weight (ssp) ft³ Specific Gravity Contribution % 58-003 Stoneco 1600 9.53 2.69 54.1 % 58-003 Stoneco 260 1.55 2.69 8.8 19.04 Schlegel 1100 6.60 2.67 37.2 ************************************</td>	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	T/31/23 Concrete Grade: DM, 4500HP MDOT No.: Pit # Source Weight (sso) ft ³ Specific Gravity % Contribution 58-003 Stoneco 1600 9.53 2.69 54.1 58-003 Stoneco 260 1.55 2.69 8.8 19-04 Schlegel 1100 6.60 2.67 37.2 Total Wt 2960 17.68 100.0 Cumulative % Passing Retained Cumulative % Retained 100.0 100.0 100.0 100.0 0.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 0.0 100.0 100.0 100.0 100.0 20.3 29.2 23.0	T/31/23 Concrete Grade: DM, 4500HP epresents: 8/1/2023 through 8/7/2023 Pit # Source Weight (ssp) ft ³ Specific Gravity MDOT No.: Pit # Source Weight (ssp) ft ³ Specific Gravity Contribution 58-003 Stoneco 1600 9.53 2.69 54.1 58-003 Stoneco 260 1.55 2.69 8.8 19-04 Schlegel 1100 6.60 2.67 37.2 Total Wt 2960 17.68 100.0 c Verify this Verify this	Image: 1/31/23 Concrete Grade: DM, 4500HP MDOT No.: Pit # Source Weight (ssp) ft ³ Specific Gravity Contribution % 58-003 Stoneco 1600 9.53 2.69 54.1 % 58-003 Stoneco 260 1.55 2.69 8.8 19.04 Schlegel 1100 6.60 2.67 37.2 ************************************

PREPARED BY: SM, LLC Technical Service

ActionLimits Boundary = - - - -

Approved By: Mart 1. Ball

PLANT		12					Contractor:				
Sample Date		7/31/23	4h #0.1.9h		Concrete Grade:	DM, 4500HP					
Dates Test R Agg. Class	Pit #	8/1/2023 Source	through Weight (SSD)	8/7/2023 ft ³	Specific Gravity	% Contribution	MDOT No.:				
6AA	71-47	Presque Isle	1600	9.79	2.62	55.1					
26A	71-47	Presque Isle	155	0.95	2.62	5.3					
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6				CUD	
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%	_	MATE	
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior I</u> 30701 W. 2	
2"	1	00.0	100	0.0	100.0	100.0	0.0	0.0	1	Suite 500	
1.5"		00.0	100		100.0	100.0	0.0	0.0	1	Farmingto	n Hill
1"		99.4	100		100.0	99.7	0.3	0.3	1	U	
3/4"	,	85.4	100	0.0	100.0	92.0	7.7	8.0	1		
1/2"		48.1	95	.5	100.0	71.2	20.8	28.8	1		
3/8"		30.4	88	.5	100.0	61.1	10.1	38.9	*Maximum %	Retained must be	abo
#4		6.8	20	.6	96.4	43.0	18.0	57.0	*Any two adja	cent sieves must e	equa
#8		2.9	4.	8	81.3	34.0	9.0	66.0	nom. max., #1	00 and #200 sieve	s.
#16		2.4	2.		66.5	27.8	6.3	72.2	*% Retained	must be at least 4%	6 for
#30		2.3	2.		50.8	21.5	6.3	78.5	nom. max., #1	00 and #200 sieve	5.
#50		2.2	1.	-	26.3	11.7	9.8	88.3	*% Retained	must be at least 8%	∕₀ for
#100		2.1	1.5		5.6	3.5	8.2	96.5	a 2" max. size	(nom. Max. 1.5") a	ggre
LBW		1.6	1.	-	0.9	1.3	2.2	98.7	J		
Production G	Gradation	O Batch Plant Gra	dations 💿 Aggr	egate Supplier G	radations	Adjusted WF	Intial Producti	on Sample (IPS	S)	_	
Coarsene	ess Factor:	59	Work	ability Factor	: 34	36.5	Coars	eness Factor:	63		
45							Work	ability Factor:	36		
· · ·	45, 44	52, 41			JMF Zone		Sieve	Cumulative % Passing	% Retained	Cumulative % Retained	
40			57, 40	68, 40	75.00		2"	100.0	0.0	0.0	
8				68, 38	8 75, 39		1.5"	100.0	0.0	0.0	
) 2			Productio				1"	99.3	0.7	0.7	
5 35			Productio	S			3/4"	89.0	10.3	11.0	
L La		52, 34		j			1/2"	70.3	18.7	29.7	
2	45, 33	52, 54					3/8"	59.9	10.4	40.1	
Workability Factor (%)			57, 22	68,3	2		#4	41.9	18.0	58.1	1
g 30		_		00, 5			#8	35.9	6.0	64.1	
5	Operating Zone				75, 28		#16 #30	27.8	8.2 8.8	72.2 81.1	
Š L	Boundary				75,20			18.9		-	
25							#50	6.3	12.6	93.7	

80



ials, LLC Rd. MI 48336

he 3/8" sieve. % except max., ch sieve except max., 1" sieve when e is used.

25 + $\mathbf{Coarseness} \ \mathbf{F_{actor}^{65}} (\mathbf{\%})^{70}$ 50 75 40 45 55 ActionLimits Boundary = - - - - -

#100 1.7 4.6 98.3 LBW 0.7 99.0 1.0

Approved By:

PLANT		p11					Contractor:				
Sample Date	e:	7/31/23		(Concrete Grade:	DM, 4500HP					
Dates Test F	Represents:	8/1/2023	through	8/7/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1605	9.82	2.62	55.2					
26A	71-47	Presque Isle	150	0.92	2.62	5.2					
2NS	95-013	Smelter Bay	1150	6.95	2.65	39.6				SUP	ERIOR
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%			FRIALS
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained			<u>Materials, LLC</u> 10 Mile Rd.
2"	1	00.0	10	0.0	100.0	100.0	0.0	0.0	1	Suite 500	
1.5"		00.0	10		100.0	100.0	0.0	0.0		Farmingto	n Hills, MI 48336
1"		99.0	10		100.0	99.4	0.6	0.6	l		
3/4"		39.0	10		100.0	93.9	5.5	6.1			
1/2"		52.1	95		100.0	73.3	20.6	26.7			
3/8"		30.3	88		100.0	60.9	12.4	39.1			above the 3/8" sieve.
#4		4.2	20		96.3	41.5	19.4	58.5	*Any two adjacent sieves must equal 10% except m		
#8		1.3	4.		85.5	34.8	6.7	65.2	nom. max., #100 and #200 sieves.		
#16		1.1	2.	-	70.5	28.7	6.2	71.3			6 for each sieve except i
#30 #50		1.0 0.9	2.		50.3 23.9	20.6	8.1 10.5	79.4 89.9	· · · · ·	00 and #200 sieves	
#50 #100		0.8	1.		7.0	10.1 3.3	6.7	96.7			6 for the 1" sieve when
LBW		0.8	1.	-	0.7	0.7	2.6	99.3	a z max. size	(nom. Max. 1.5") a	ggregate is used.
Production G		Batch Plant Gra		gregate Supplier Gr		••••	-	on Sample (IPS	6)		
Coarsen	ess Factor:	60	Work	ability Factor:	35	37.3		eness Factor:	62		
45							Work	ability Factor:	36		
	45, 44							Cumulative	%	Cumulative	
1	- ,	50.44			JMF Zone		Sieve	% Passing	Retained	% Retained	
40		52, 4 1 -56	i. 40	67, 40			2"	100.0	0.0	0.0	
ଛ ⁴°]				68, 38	75, 39		1.5"	100.0	0.0	0.0	
			Produc	ction Gradation			1"	100.0	0.0	0.0	
Factor (%)			■ 60,38B				3/4"	95.0	5.0	5.0	
2 ³⁵			Ì	i			1/2"	72.3	22.8	27.7	
2	45, 33	52, 34		!			3/8"	60.4	11.8	39.6	
≝ 1	-0, 33	50	, 92	67, 32 68, 31			#4	42.6	17.8	57.4	
· 🚽 1		_		68, 31			#8	36.0	6.6	64.0	
	0				75, 28		#16	29.5	6.5	70.5	
orkabil	Operating Zone	1			75, 28		#30	20.3	9.2	79.7	
Workability	Boundary						1150	0 5	40.0	00 5	
25	Boundary						#50	9.5	10.8	90.5	
		50	60 Coarseness	Factor (%)	75	80	#50 #100 LBW	9.5 3.4 1.3	10.8 6.1 2.1	90.5 96.6 98.7	

Approved By:

PLANT #	#:	P-32					Contractor:				
Sample Date	:	7/31/23		C	Concrete Grade	DM, 4500HP					
Dates Test R	epresents:	8/1/2023	through	8/7/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1605	9.82	2.62	55.2					
26A	71-47	Presque Isle	150	0.92	2.62	5.2					
2NS	95-013	Smelter Bay	1150	6.95	2.65	39.6				SUP	ERIOR
		Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%	1		RIALS
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		Suite 500	
1.5"		00.0	100	0.0	100.0	100.0	0.0	0.0		Farmingto	n Hills, MI 48336
1"		99.0	100	0.0	100.0	99.4	0.6	0.6			
3/4"		89.0	100	-	100.0	93.9	5.5	6.1			
1/2"		52.1	95		100.0	73.3	20.6	26.7			
3/8"		30.3	88		100.0	60.9	12.4	39.1			above the 3/8" sieve.
#4		4.2	20	-	96.3	41.5	19.4	58.5			qual 10% except max.,
#8		1.3	4.	-	85.5	34.8	6.7	65.2		00 and #200 sieves	
#16		1.1	2.		70.5	28.7	6.2	71.3			for each sieve except i
#30 #50		1.0	2.		50.3 23.9	20.6	8.1	79.4 89.9	,	00 and #200 sieves	
#50 #100		0.9	<u> </u>		7.0	10.1 3.3	10.5 6.7	89.9 96.7			for the 1" sieve when
LBW		0.7	1.		0.7	0.7	2.6	99.3	a z max. size	(nom. Max. 1.5") ag	ggregate is used.
Production G	radation	Batch Plant Gra		egate Supplier Gra	-	-		on Sample (IPS	5)		
Coarsene	ess Factor:	60	Work	ability Factor:	35	37.3		eness Factor:	62		
				,				ability Factor:	36		
⁴⁵]								Cumulative	%	Cumulative	
- 4	45, 44				JMF Zone		Sieve	% Passing	Retained	% Retained	
1		52, 41	5.40	67, 40			2"	100.0	0.0	0.0	
G ⁴⁰					75, 39		1.5"	100.0	0.0	0.0	
8				68, 38	T I		1"	100.0	0.0	0.0	
j l			 Product 60, 38 	tion Gradation			3/4"	95.0	5.0	5.0	
ta 35 -				· !			1/2"	72.3	22.8	27.7	
Щ́ I		52, 34		i			3/8"	60.4	11.8	39.6	
li j	45, 33		!				#4	42.6	17.8	57.4	
	ļ		,	67, 32 68, 31			#8	36.0	6.6	64.0	
Workability Factor (%)	Operating Zone						#16 #30	29.5	6.5 9.2	70.5 79.7	
ā II	Boundary				75, 28		#30 #50	20.3	9.2	79.7 90.5	
× 1∟							#50 #100	9.5 3.4	6.1	90.5 96.6	
× 25 40	45	50 55	5 60	65 Factor (%) ⁷⁰	75	80	LBW	1.3	2.1	98.7	

Approved By: Mary 1. Ball

PLANT #	#:	P-35	-				Contractor:					
Sample Date	;:	7/31/23	_	(Concrete Grade:	DM, 4500HP						
Dates Test R	epresents:	8/1/2023	through	8/7/2023			MDOT No.:					
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution						
6AA	58-003	Stoneco	1575	9.38	2.69	53.4						
26A	58-003	Stoneco	225	1.34	2.69	7.6						
2NS	81-019	Pleasant Lake	1150	6.95	2.65	39.0				SUP	ERIOR	
		Total Wt	2950	17.68		100.0	< Verify this n	umber is 100%	1	MATE	RIALS	
Sieve		6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		<u>Superior</u> 30701 W. 3	Materials, LLC 10 Mile Rd.	
2"	1	100.0	10	0.0	100.0	100.0	0.0	0.0	1	Suite 500		
1.5"		100.0		0.0	100.0	100.0	0.0	0.0	1	Farmingto	n Hills, MI 48336	
1"	1	100.0	-	0.0	100.0	100.0	0.0	0.0				
3/4"		83.5	-	0.0	100.0	91.2	8.8	8.8				
1/2"		46.1	99		100.0	71.2	20.0	28.8				
3/8"		23.0	89		100.0	58.1	13.1	41.9			above the 3/8" sieve.	
#4		3.9).2	98.1	41.1	17.0	58.9		*Any two adjacent sieves must equal 10% except ma		
#8 #16		1.9 1.4	3.		81.6 63.6	33.1 25.8	8.0 7.3	66.9 74.2	nom. max., #100 and #200 sieves.			
#10	1.4		2.		44.7	18.3	7.5	81.7	*% Retained must be at least 4% for each sieve e nom. max., #100 and #200 sieves.			
#50 #50		1.2	2		22.9	9.7	8.5	90.3	· ·		for the 1" sieve when	
#100		1.1	2	-	6.1	3.1	6.6	96.9		(nom. Max. 1.5") ag		
LBW		1.1	2.	.1	1.3	1.3	1.9	98.7		(55 - 5	
Production G	radation	O Batch Plant Gra	dations 💿 Agg	regate Supplier Gra	adations	Adjusted WF	Intial Production	on Sample (IPS	5)			
Coarsene	ess Factor:	63	Worl	ability Factor:	: 33	35.6	Coars	eness Factor:	61			
								01100001 001011				
								ability Factor:	36			
45 -					IME Zopo		Work		36 %	Cumulative		
	45, 44				JMF Zone			ability Factor:		Cumulative % Retained		
4	45, 44	52, 41			JMF Zone		Work Sieve 2"	ability Factor: Cumulative % Passing 100.0	% Retained 0.0	% Retained 0.0		
- 40	15, 44		++	07, 40 68, 38	75.39		Work 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		++	68, 38	75.39		Work 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				75, 39		Work Sieve 2" 1.5" 1" 3/4"	ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1	% Retained 0.0 0.0 0.7 10.2	% Retained 0.0 0.0 0.7 10.9		
40	45, 44	52, 41 		68, 38 Production Gradati	75, 39		Work Sieve 2" 1.5" 1" 3/4" 1/2"	ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5	% Retained 0.0 0.0 0.7 10.2 18.6	% Retained 0.0 0.0 0.7 10.9 29.5		
Factor (%)	\rightarrow		• 60,1		75, 39		Work 2" 1.5" 1" 3/4" 1/2" 3/8"	ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5	% Retained 0.0 0.7 10.2 18.6 10.0	% Retained 0.0 0.7 10.9 29.5 39.5		
Factor (%)	45, 44	52, 41 		Production Gradati	75, 39		Work 2" 1.5" 1" 3/4" 1/2" 3/8" #4	ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5	% Retained 0.0 0.7 10.2 18.6 10.0 16.4	% Retained 0.0 0.0 0.7 10.9 29.5		
Factor (%)	45, 33	52, 41 56 , 52, 34 56 ,			75, 39		Work 2" 1.5" 1" 3/4" 1/2" 3/8"	ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5 44.1	% Retained 0.0 0.7 10.2 18.6 10.0	% Retained 0.0 0.7 10.9 29.5 39.5 55.9		
Factor (%)	\rightarrow	52, 41 56 , 52, 34 56 ,		Production Gradati	75, 39		Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5 44.1 35.6 27.7 20.6	% Retained 0.0 0.7 10.2 18.6 10.0 16.4 8.5	% Retained 0.0 0.7 10.9 29.5 39.5 55.9 64.4 72.3 79.4		
Workability Factor (%)	45, 33 Operating Zone	52, 41 56 , 52, 34 56 ,		Production Gradati	75, 39		Work 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5 44.1 35.6 27.7	% Retained 0.0 0.7 10.2 18.6 10.0 16.4 8.5 7.9	% Retained 0.0 0.7 10.9 29.5 39.5 55.9 64.4 72.3		
Factor (%)	45, 33 Operating Zone	52, 41 56 , 52, 34 56 ,	31	Production Gradati	tion 75, 39 75, 28		Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5 44.1 35.6 27.7 20.6	% Retained 0.0 0.7 10.2 18.6 10.0 16.4 8.5 7.9 7.1	% Retained 0.0 0.7 10.9 29.5 39.5 55.9 64.4 72.3 79.4		

Approved By:

	7/31/23											
	1/31/23		(Concrete Grade:	DM, 4500HP							
epresents:	8/1/2023	through	8/7/2023			MDOT No.:						
Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution							
71-47	Presque Isle	1600	9.79	2.62	55.1							
				-								
63-92				2.65					SUP	ERIOR		
	i otai vvt	2905	17.69		100.0	< Verify this n	umber is 100%	I	MATE	FIALS		
e	5AA	26	Α	2NS	Cumulative % Passing	% Retained	Cumulative % Retained			Materials, LLC 10 Mile Rd.		
1	00.0	100).0	100.0	100.0	0.0	0.0		Suite 500			
				100.0	100.0	0.0	0.0		Farmingto	n Hills, MI 48336		
	99.4	100).0	100.0	99.7	0.3	0.3					
				100.0	92.0	7.7	8.0					
			-		-			*Maximum %	Retained must be	above the 3/8" sieve.		
								*Any two adjacent sieves must equal 10% except max.,				
			-					nom. max., #100 and #200 sieves.				
										•		
			-		-							
				-				a z max. size	(nom. max. 1.5) a	ggregate is used.		
	-		-) ;)				
ss Factor:	59	Work	ability Factor:	34	36.8			63				
						Work	ability Factor:	35				
							Cumulative		Cumulative			
5, 44				JMF Zone		Sieve	% Passing					
	52, 41					2"	100.0	0.0	0.0			
		58, 39	68, 99	75, 39		1.5"	100.0	0.0	0.0			
			68, 38	T I			99.1	0.9	0.9			
		Production	on Gradation				90.3	8.8	-			
	l	■ = 00, 00	IPS									
	52, 34		ļi									
45, 33												
	_	58, 31	68,3	1								
Operating Zone												
Boundary				75, 28				-				
						#100	1.8	7.0	91.3			
				· · · · · ·		11 100	1.0	1.0	00.2			
	Pit # 71-47 63-92	Pit # Source 71-47 Presque Isle 71-47 Presque Isle 63-92 Grange Hall Total Wt 6AA 100.0 100.0 100.0 99.4 85.4 48.1 30.4 6.8 2.9 2.4 2.3 2.2 2.1 1.6 adation Batch Plant Grast s Factor: 59 44 52, 41 44 52, 34	Pit # Source Weight (ssp) 71-47 Presque Isle 1600 71-47 Presque Isle 155 63-92 Grange Hall 1150 Total Wt 2905 6AA 26 100.0 100 100.0 100 99.4 100 85.4 100 48.1 95 30.4 88 6.8 20 2.9 4 2.4 2.2 2.3 2.2 2.1 1. 1.6 1. adation Batch Plant Gradations § Factor: 59 44 52, 34 45, 33 52, 34 44 52, 34 45, 33 58, 31	Pit # Source Weight (ssp) ft ³ 71-47 Presque Isle 1600 9.79 71-47 Presque Isle 155 0.95 63-92 Grange Hall 1150 6.95 Total Wt 2905 17.69 6AA 26A 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 99.4 100.0 48.1 95.5 30.4 88.5 6.8 20.6 2.9 4.8 2.4 2.6 2.3 2.0 2.2 1.8 2.1 1.8 1.6 1.5 adation Batch Plant Gradations Aggregate Supplier Gra 4 52.4 59 Workability Factor: 44 52.4 58.38 98.38 60.36 195 195 58, 31 58, 34 69.36	Pit # Source Weight (ssp) ft ³ Specific Gravity 71-47 Presque Isle 1600 9.79 2.62 63-92 Grange Hall 1150 6.95 2.62 6AA 26A 2NS 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 99.4 100.0 100.0 100.0 48.1 95.5 100.0 100.0 30.4 88.5 100.0 100.0 6.8 20.6 94.9 2.9 2.4 2.6 68.6 2.3 2.0 51.2 2.2 1.8 3.2 1.6 1.5 0.3 1.6 1.5 0.3 45.3 58.31 98.31 58.31 98.31 98.31 58.31 58.31 98.31	Pit # Source Weight (ssp) ft ³ Specific Gravity % Contribution 71-47 Presque Isle 1600 9.79 2.62 55.1 63-92 Grange Hall 1150 6.95 2.65 39.6 Garange Hall 1150 6.95 2.62 5.3 Garange Hall 1150 6.95 2.65 39.6 Total Wt 2905 17.69 100.0 6AA 26A 2NS Cumulative % Passing 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 99.4 100.0 100.0 92.0 48.1 95.5 100.0 71.2 30.4 88.5 100.0 61.1 6.8 20.6 68.6 28.6 2.3 2.0 51.2 21.6 2.2 1.8 32.9 10.4 2.1 1.8 3.2 2.5 1.6 1.5 0.3 </td <td>Pit # Source Weight (ssp) ft³ Specific Gravity Gravity % Contribution 71-47 Presque Isle 1600 9.79 2.62 55.1 63-92 Grange Hall 1150 6.95 2.65 39.6 Total Wt 2905 17.69 100.0 c Verify this n 6AA 26A 2NS Cumulative % Passing % Retained 100.0 100.0 100.0 100.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 99.4 100.0 100.0 100.0 99.7 0.3 85.4 100.0 100.0 77.7 48.1 95.5 100.0 71.2 20.8 30.4 88.5 100.0 61.1 10.1 6.8 22.0 7.7 2.9 4.8 82.0 34.3 8.1 2.2 7.0 2.2 1.8</td> <td>Pit # Source Weight (ssp.) ft³ Specific Gravity Gravity Gravity % Contribution Contribution 71-47 Presque Isle 1600 9.79 2.62 5.3 63-92 Grange Hall 1150 6.95 2.62 5.3 63-92 Grange Hall 1150 6.95 2.65 39.6 Total Wt 2905 17.69 100.0 000.0 00.0 0.00 0.0</td> <td>Pit # Source Weight (ssp) ft³ Specific Gravity Contribution Gravity 71-47 Presque Isle 155 0.95 2.62 55.1 71-47 Presque Isle 155 0.95 2.62 5.3 63-92 Grange Hall 1150 6.95 2.66 39.6 Total Wt 2905 17.69 100.0 Verify this number is 100% 6AA 26A 2NS Cumulative % Passing % Retained % Retained Cumulative % Retained 100.0 100.0 100.0 100.0 0.0 0.0 99.4 100.0 100.0 99.7 0.3 0.3 385.4 100.0 101.0 92.0 7.7 8.0 48.1 95.5 100.0 61.1 10.1 138.9 "Maximum % 2.9 4.8 82.0 34.3 8.1 65.7 71.4 2.4 2.6 68.6 28.6 5.7 71.4 "% Retained 2.1</td> <td>Pit # Source Weight (ssp) ft³ Specific Gravity Gravity Contribution Contribution 71-47 Presque Isle 155 0.95 2.62 55.1 63-92 Grange Hall 1150 6.95 2.62 55.1 Total Wt 2905 17.69 100.0 Cumulative % Passing % Retained Cumulative % Retained Superior 100.0 100.0 100.0 100.0 0.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 Farmingto 99.4 100.0 100.0 100.0 101.1 101.1 38.9 48.1 95.5 100.0 77.2 8.0 71.47 6.8 20.6 94.9 42.4 18.6 57.7 71.4 7.4 2.3 2.2 1.8 32.2 7.9 97.5 9 2* max. size (nom. max. #00 and #200 sieves must #200 sieves 92.1 7.8 97.5 9 2* max. size (nom. Max. 15*) a 2* max. size (nom. Max.</td>	Pit # Source Weight (ssp) ft ³ Specific Gravity Gravity % Contribution 71-47 Presque Isle 1600 9.79 2.62 55.1 63-92 Grange Hall 1150 6.95 2.65 39.6 Total Wt 2905 17.69 100.0 c Verify this n 6AA 26A 2NS Cumulative % Passing % Retained 100.0 100.0 100.0 100.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 99.4 100.0 100.0 100.0 99.7 0.3 85.4 100.0 100.0 77.7 48.1 95.5 100.0 71.2 20.8 30.4 88.5 100.0 61.1 10.1 6.8 22.0 7.7 2.9 4.8 82.0 34.3 8.1 2.2 7.0 2.2 1.8	Pit # Source Weight (ssp.) ft ³ Specific Gravity Gravity Gravity % Contribution Contribution 71-47 Presque Isle 1600 9.79 2.62 5.3 63-92 Grange Hall 1150 6.95 2.62 5.3 63-92 Grange Hall 1150 6.95 2.65 39.6 Total Wt 2905 17.69 100.0 000.0 00.0 0.00 0.0	Pit # Source Weight (ssp) ft ³ Specific Gravity Contribution Gravity 71-47 Presque Isle 155 0.95 2.62 55.1 71-47 Presque Isle 155 0.95 2.62 5.3 63-92 Grange Hall 1150 6.95 2.66 39.6 Total Wt 2905 17.69 100.0 Verify this number is 100% 6AA 26A 2NS Cumulative % Passing % Retained % Retained Cumulative % Retained 100.0 100.0 100.0 100.0 0.0 0.0 99.4 100.0 100.0 99.7 0.3 0.3 385.4 100.0 101.0 92.0 7.7 8.0 48.1 95.5 100.0 61.1 10.1 138.9 "Maximum % 2.9 4.8 82.0 34.3 8.1 65.7 71.4 2.4 2.6 68.6 28.6 5.7 71.4 "% Retained 2.1	Pit # Source Weight (ssp) ft ³ Specific Gravity Gravity Contribution Contribution 71-47 Presque Isle 155 0.95 2.62 55.1 63-92 Grange Hall 1150 6.95 2.62 55.1 Total Wt 2905 17.69 100.0 Cumulative % Passing % Retained Cumulative % Retained Superior 100.0 100.0 100.0 100.0 0.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 Farmingto 99.4 100.0 100.0 100.0 101.1 101.1 38.9 48.1 95.5 100.0 77.2 8.0 71.47 6.8 20.6 94.9 42.4 18.6 57.7 71.4 7.4 2.3 2.2 1.8 32.2 7.9 97.5 9 2* max. size (nom. max. #00 and #200 sieves must #200 sieves 92.1 7.8 97.5 9 2* max. size (nom. Max. 15*) a 2* max. size (nom. Max.		

Approved By:

#:	P-38					Contractor:			-		
:	7/31/23			Concrete Grade:	DM, 4500HP						
epresents:	8/1/2023	through	8/7/2023			MDOT No.:			_		
Pit #	Source	Weight (SSD)	ft ³	Gravity	% Contribution						
58-003	Stoneco				53.4						
58-003	Stoneco		1.34	2.69	7.6						
81-019				2.65				SUPERIOR			
	Total Wt	2950	17.68		100.0	< Verify this number is 100%		MATERIALS			
Sieve 6AA		26A		2NS	Cumulative % Passing	% Retained	Cumulative % Retained	Superior Materials, LLC 30701 W. 10 Mile Rd.			
1	00.0	10	0.0	100.0	100.0	0.0	0.0	1	Suite 500		
1	00.0	100	0.0	100.0	100.0	0.0	0.0]	Farmingtor	n Hills, MI 48336	
1	00.0	100	0.0	100.0	100.0	0.0	0.0]			
		-		100.0	91.2						
	-]			
							-	*Maximum % Retained must be above the 3/8" siev			
		-						*Any two adjacent sieves must equal 10%			
								nom. max., #100 and #200 sieves.			
			-					*% Retained must be at least 4% for each sieve			
							-				
			-		-			*% Retained must be at least 8% for the 1" sieve when			
				-				a 2° max. size	(nom. Max. 1.5") ag	gregate is used.	
			regate Supplier G	_		-		1			
iradation	 Batch Plant Gra 				Adjusted VVF	Infial Productio	on Sample (IPS	5)			
radation	Batch Plant Gra				Adjusted WF 35.6		on Sample (IPS eness Factor:	S) 61	1		
			ability Factor			Coars	eness Factor:	61			
ess Factor:				33		Coars Work	eness Factor: ability Factor:	61 36	Cumulative		
						Coars	eness Factor: ability Factor: Cumulative	61 36 %	Cumulative % Retained		
ess Factor:				33		Coars Work	eness Factor: ability Factor:	61 36	Cumulative % Retained 0.0		
ess Factor:	63		ability Factor	r: 33 JMF Zone		Coars Work Sieve	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0	61 36 % Retained 0.0 0.0	% Retained		
ess Factor:	63			r: 33 JMF Zone		Coars Work Sieve 2" 1.5" 1"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3	61 36 % Retained 0.0 0.0 0.7	% Retained 0.0 0.0 0.7		
ess Factor:	63	Work	sability Factor	r: 33 JMF Zone 8 75, 39		Coars Work Sieve 2" 1.5" 1" 3/4"	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1	61 36 % Retained 0.0 0.0 0.7 10.2	% Retained 0.0 0.0 0.7 10.9		
ess Factor:	63	Work	ability Factor	r: 33 JMF Zone 8 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 89.1 70.5	61 36 % Retained 0.0 0.0 0.7 10.2 18.6	% Retained 0.0 0.0 0.7 10.9 29.5		
ess Factor:	63	Work	sability Factor	r: 33 JMF Zone 8 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 89.1 70.5 60.5	61 36 % Retained 0.0 0.0 0.7 10.2 18.6 10.0	% Retained 0.0 0.7 10.9 29.5 39.5		
ess Factor:	63 52, 41 56 , 52, 34	Work	Production Grada	r: 33 JMF Zone 8 75, 39 ation		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5 44.1	61 36 % Retained 0.0 0.0 0.7 10.2 18.6 10.0 16.4	% Retained 0.0 0.0 0.7 10.9 29.5 39.5 55.9		
45, 44	63	Work	sability Factor	r: 33 JMF Zone 8 75, 39 ation		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5 44.1 35.6	61 36 % Retained 0.0 0.0 0.7 10.2 18.6 10.0 16.4 8.5	% Retained 0.0 0.7 10.9 29.5 39.5 55.9 64.4		
45, 44 45, 33 Operating Zone	63 52, 41 52, 34 52, 34 56,	Work	Production Grada	r: 33 JMF Zone 8 75, 39 ation		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5 44.1 35.6 27.7	61 36 % Retained 0.0 0.0 0.7 10.2 18.6 10.0 16.4 8.5 7.9	% Retained 0.0 0.7 10.9 29.5 39.5 55.9 64.4 72.3		
45, 33	63 52, 41 52, 34 52, 34 56,	Work	Production Grada	r: 33 JMF Zone 8 75, 39 ation		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16 #30	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5 44.1 35.6 27.7 20.6	61 36 % Retained 0.0 0.0 0.7 10.2 18.6 10.0 16.4 8.5 7.9 7.1	% Retained 0.0 0.7 10.9 29.5 39.5 55.9 64.4 72.3 79.4		
45, 44 45, 33 Operating Zone	63 52, 41 52, 34 52, 34 56,	Work	Production Grada	r: 33 JMF Zone 75, 39 ation		Coars Work Sieve 2" 1.5" 1" 3/4" 1/2" 3/8" #4 #8 #16	eness Factor: ability Factor: Cumulative % Passing 100.0 100.0 99.3 89.1 70.5 60.5 44.1 35.6 27.7	61 36 % Retained 0.0 0.0 0.7 10.2 18.6 10.0 16.4 8.5 7.9	% Retained 0.0 0.7 10.9 29.5 39.5 55.9 64.4 72.3		
•	: epresents: Pit # 58-003 58-003 81-019	7/31/23 epresents: 7/31/23 Pit # Source 58-003 Stoneco 58-003 Stoneco 81-019 Pleasant Lake Total Wt 6AA 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 101.0 102.0 102.0 103.5 46.1 23.0 3.9 1.9 1.4 1.2 1.1 1.1	7/31/23 epresents: 7/31/23 epresents: 8/1/2023 through Pit # Source Weight (ssp) 58-003 Stoneco 1575 58-003 Stoneco 225 81-019 Pleasant Lake 1150 Total Wt 2950 6AA 26 100.0 100 100 100.0 100 100 100.0 100 100 100.0 100 100 100.0 100 100 100.0 100 100 100.0 100 100 100.0 100 100 100.0 100 100 100.0 100 100 100.0 100 100 10.0 100 100 1.9 3.9 10 1.2 2. 2. 1.2 2. 2. 1.1 2. 2. <td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td> <td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td> <td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td> <td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td> <td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td> <td>T/31/23 Concrete Grade: DM, 4500HP epresents: 8/1/2023 through 8/7/2023 Pit # Source Weight (ssp) ft³ Specific Gravity % Contribution 58-003 Stoneco 1575 9.38 2.69 53.4 58-003 Stoneco 225 1.34 2.69 7.6 81-019 Pleasant Lake 1150 6.95 2.65 39.0 Total Wt 2950 17.68 100.0 cumulative % Passing % Retained 100.0 100.0 100.0 100.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 100.0 100.0 100.0 71.2 20.0 28.8 3.5 100.0</td> <td>T/31/23 Concrete Grade: DM, 4500HP epresents: 8/1/2023 through 8/7/2023 MDOT No.: Pit # Source Weight (sso) ft³ Specific Gravity Contribution S6-003 Stoneco 1575 9.38 26.9 53.4 58-003 Stoneco 225 1.34 2.69 7.6 81-019 Pleasant Lake 1150 6.95 2.65 39.0 Total Wt 2950 17.68 100.0 c Verify this number is 100% 6AA 26A 2NS Cumulative % Passing % Retained Cumulative % Retained 100.0 100.0 100.0 100.0 0.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 0.0 100.0 100.0 100.0 100.0 100.0 0.0 0.0 100.0 100.0 100.0 71.2 20.0 28.8 8.8 23.0 89.2 100.0 58.1 13.1 41.9 *Any two adjacent sieves must e 1.9</td>	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	T/31/23 Concrete Grade: DM, 4500HP epresents: 8/1/2023 through 8/7/2023 Pit # Source Weight (ssp) ft ³ Specific Gravity % Contribution 58-003 Stoneco 1575 9.38 2.69 53.4 58-003 Stoneco 225 1.34 2.69 7.6 81-019 Pleasant Lake 1150 6.95 2.65 39.0 Total Wt 2950 17.68 100.0 cumulative % Passing % Retained 100.0 100.0 100.0 100.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 100.0 100.0 100.0 71.2 20.0 28.8 3.5 100.0	T/31/23 Concrete Grade: DM, 4500HP epresents: 8/1/2023 through 8/7/2023 MDOT No.: Pit # Source Weight (sso) ft ³ Specific Gravity Contribution S6-003 Stoneco 1575 9.38 26.9 53.4 58-003 Stoneco 225 1.34 2.69 7.6 81-019 Pleasant Lake 1150 6.95 2.65 39.0 Total Wt 2950 17.68 100.0 c Verify this number is 100% 6AA 26A 2NS Cumulative % Passing % Retained Cumulative % Retained 100.0 100.0 100.0 100.0 0.0 0.0 0.0 100.0 100.0 100.0 100.0 0.0 0.0 0.0 100.0 100.0 100.0 100.0 100.0 0.0 0.0 100.0 100.0 100.0 71.2 20.0 28.8 8.8 23.0 89.2 100.0 58.1 13.1 41.9 *Any two adjacent sieves must e 1.9	

Approved By: Mart P. Ball

PLANT #	#:	P-39					Contractor:			_	
Sample Date):	7/31/23		(Concrete Grade:	DM, 4500HP				•	
Dates Test R	epresents:	8/1/2023	through	8/7/2023			MDOT No.:				
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution					
6AA	71-47	Presque Isle	1705	10.43	2.62	58.7					
26A	71-47	Presque Isle	100	0.61	2.62	3.4					
2NS 44-051		Krake Willis Rd	1100	6.65	2.65	37.9				SUP	ERIOR
		Total Wt	2905	17.69		100.0	< Verify this number is 100%		1		RIALS
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		100.0	100.0	0.0	0.0		Farmingto	n Hills, MI 48336
1"		95.5	100		100.0	97.4	2.6	2.6			
3/4"		71.1	100		100.0	83.0	14.3	17.0	1		
1/2"		35.0	97	.2	100.0	61.8	21.3	38.2	1		
3/8"		24.3	89		100.0	55.2	6.5	44.8	*Maximum % Retained must be above the 3		above the 3/8" sieve.
#4	5.0		23.2		97.7	40.7	14.5	59.3	*Any two adjacent sieves must equal 10% except ma		
#8		2.1	4.		83.2	32.9	7.8	67.1	nom. max., #10	, #100 and #200 sieves.	
#16		1.9	2.		67.2	26.6	6.3	73.4	*% Retained must be at least 4% for each siev		for each sieve except
#30		1.8	1.		49.3	19.8	6.9	80.2	nom. max., #100 and #200 sieves.		
#50		1.7	1.		22.5	9.6	10.2	90.4	*% Retained must be at least 8% for the 1" sieve wh		
#100 LBW		1.6 1.4	<u> </u>		6.3 1.3	3.4 1.4	6.2 2.0	96.6 98.6	a 2" max. size	(nom. Max. 1.5") ag	ggregate is used.
		-									
Production G	Gradation	Batch Plant Gra	dations 🕑 Agg	regate Supplier Gra	adations	Adjusted WF	Intial Production	on Sample (IPS	5)		
Coarsene	ess Factor:	67	Work	ability Factor:	: 33	35.4	Coars	eness Factor:	63		
45							Workability Factor:		36	1	
_	45, 44			JMF Zone			Sieve	Cumulative	%	Cumulative	
1	-5,				3111 20110		Sleve	% Passing	Retained	% Retained	
40		52, 41	\mathbf{V}				2"	100.0	0.0	0.0	
२ ⁴⁰			-58,40	68, 38	75, 39		1.5"	100.0	0.0	0.0	
۳			!		1		1"	100.0	0.0	0.0	
Į Į			■ 60, 36				3/4"	89.7	10.3	10.3	
5 35		Ţ		Producti	ion Gradation		1/2"	70.3	19.4	29.7	
Ľ		52, 34					3/8"	59.1	11.2	40.9	
lif.	45, 33			·			#4	42.8	16.3	57.2	
Workability Factor (%)		_	50, 54	6888 6878	52		#8	35.5	7.3	64.5	
ž	Operating Zone	2					#16	29.0	6.5	71.0	
§ ∣∟	Boundary				75, 28		#30	21.2	7.7	78.8	
S 25			<u> </u>	· · · · · · · · · · · · · · · · · · ·	<u></u>		#50 #100	9.8	11.5	90.2	
	45	50 55	60	Factor (%)	75	80	LBW	3.7 1.2	6.1 2.5	96.3 98.8	
40										20.0	

Approved By: Mart P. Ball

PLANT #	#:	P-O2					Contractor:					
Sample Date	e:	7/31/23	•		Concrete Grade:	DM, 4500HP				-		
Dates Test R	epresents:	8/1/2023	through	8/7/2023			MDOT No.:					
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution						
6AA	71-47	Presque Isle	1600	9.79	2.62	55.1						
26A	71-47	Presque Isle	155	0.95	2.62	5.3						
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%	-		ERIALS	
Sieve	Sieve 6AA		26A		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"	1	100.0	100).0	100.0	100.0	0.0	0.0	Farmington Hills, MI 48336			
1"		99.4	100).0	100.0	99.7	0.3	0.3				
3/4"		85.4	100	-	100.0	92.0	7.7	8.0				
1/2"		48.1	95		100.0	71.2	20.8	28.8				
3/8"		30.4	88		100.0	61.1	10.1	38.9	*Maximum % Retained must be above the 3/8" side			
#4		6.8	20		96.4	43.0	18.0	57.0	*Any two adja	equal 10% except max.		
#8		2.9	4.		81.3	34.0	9.0	66.0	nom. max., #10			
#16		2.4	2.		66.5	27.8	6.3	72.2	*% Retained must be at least 4% for each sieve exce			
#30		2.3	2.		50.8	21.5	6.3	78.5	nom. max., #100 and #200 sieves.			
#50		2.2	1.		26.3	11.7	9.8	88.3	*% Retained must be at least 8% for the 1" sieve			
#100 LBW		2.1 1.6	1.8 1.5		5.6 0.9	3.5 1.3	8.2 2.2	96.5 98.7	a 2" max. size	(nom. Max. 1.5") a	ggregate is used.	
LDVV		~		-					1			
Production G	Gradation	Batch Plant Gra	dations 💿 Aggr	egate SupplierGr	adations	Adjusted WF	Intial Production	on Sample (IPS	<u>S)</u>	-		
Coarseness Factor: 59		Work	Workability Factor: 34 36		36.5	Coarseness Factor:		63				
45							Workability Factor:				-	
_	45, 44				JMF Zone		Sieve	Cumulative	%	Cumulative		
1	,							% Passing	Retained	% Retained		
40		52, 41	\checkmark				2"	100.0	0.0	0.0		
इ ⁴⁰]			58, 39	68, 39	75, 39		1.5"	100.0	0.0	0.0		
<u>ຍ</u>			i		-		1"	100.0	0.0	0.0		
<u>5</u>			Productic	n Gradation			3/4"	95.1	4.9	4.9		
e 35	_		i	IPS			1/2"	74.6	20.5	25.4		
Workability Factor (%)		52, 34					3/8"	59.3 42.1	15.3	40.7 57.9		
	45, 33						#4 #8	42.1 35.1	17.2 7.1	57.9 64.9		
ig 30 -		_	58, 31	6 8 8.3	311		#8 #16	35.1 29.2	5.9	64.9 70.8		
ž	Operating Zone	·					#16 #30	29.2	5.9 7.3	70.8		
₽ L	Boundary				75, 28		#30	9.6	12.4	90.4		
> 25							#50	9.0	12.4	90.4		

75

80

2.4

0.9

7.2

1.5

97.6

99.1

#100

LBW



50

45

ActionLimits Boundary = - - - -

Coarseness Factor (%)⁷⁰

55

25

40

Approved By: Mart P. Ball