

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-36**

Sample Date: **7/4/22**

Dates Test Represents: **7/5/2022**

through **7/11/2022**

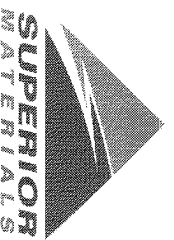
Concrete Grade: **P1M 3500HP**

MDOT No.:

Contractor:

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
CA	71-47	Presque Isle	900	5.50	2.62	29.3
IA	71-47	Presque Isle	970	5.93	2.62	31.6
NNS	63-92	Grange Hall	1200	7.26	2.65	39.1
Total Wt:						100.0

Sieve	% Retained	Cumulative % Retained
2"	0.0	0.0
1.5"	0.7	0.7
1"	14.7	15.4
3/4"	11.3	26.8
1/2"	6.7	33.5
3/8"	7.1	40.6
#4	14.6	55.2
#8	9.5	64.7
#16	7.0	71.7
#30	8.4	80.2
#50	12.0	92.1
#100	5.2	97.4
LBW	1.3	98.7



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Sieve	CA	IA	NNS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	97.5	100.0	100.0	99.3	0.7	0.7
1"	47.3	100.0	100.0	84.6	14.7	15.4
3/4"	10.9	98.0	100.0	73.2	11.3	26.8
1/2"	2.8	84.2	100.0	66.5	6.7	33.5
3/8"	2.2	62.3	100.0	59.4	7.1	40.6
#4	1.9	20.0	97.1	44.8	14.6	55.2
#8	1.9	7.9	82.5	35.3	9.5	64.7
#16	1.9	4.6	67.2	28.3	7.0	71.7
#30	1.8	3.7	46.4	19.8	8.4	80.2
#50	1.8	3.4	16.0	7.9	12.0	92.1
#100	1.6	3.2	2.9	2.6	5.2	97.4
LBW	1.2	2.6	0.3	1.3	1.3	98.7

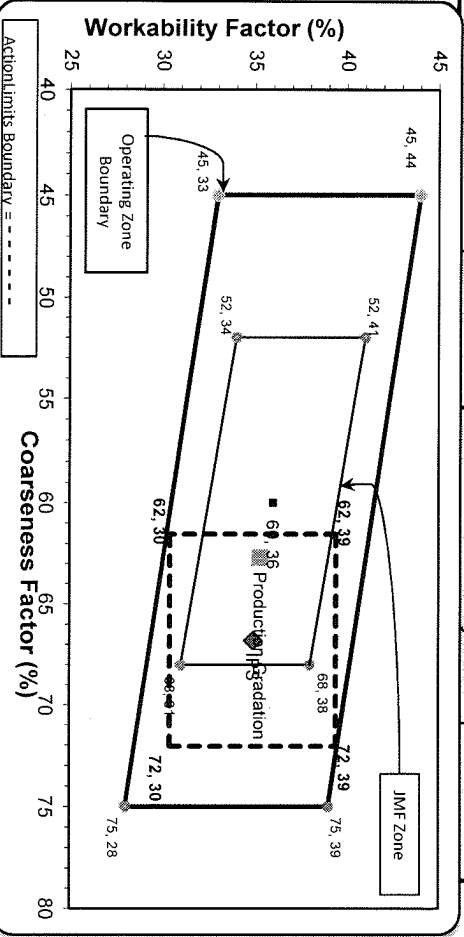
*Maximum % Retained must be above the 3/8" sieve.
*Any two adjacent sieves must equal 10% except max.
nom. max. #100 and #200 sieves.
*% Retained must be at least 4% for each sieve except max.
nom. max. #100 and #200 sieves.
*% Retained must be at least 8% for the 1" sieve when
a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Initial Production Sample (IPS)

Coarseness Factor: **63** Workability Factor: **35**

Coarseness Factor: **67** Workability Factor: **35**



Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	85.0	15.0	15.0
3/4"	72.1	12.9	27.9
1/2"	64.5	7.6	35.5
3/8"	56.5	8.0	43.5
#4	42.7	13.8	57.3
#8	34.9	7.8	65.1
#16	29.0	5.9	71.0
#30	21.0	8.0	79.0
#50	8.2	12.8	91.8
#100	1.6	6.5	98.4
LBW	0.7	0.9	99.3

PREPARED BY:
SM, LLC Technical Service

Approved By:



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2470 Auburn Road
Auburn Hills, MI 48432

Plant S36-Superior Auburn Hills

Product 1022-2NS GR

Name/Title Doug Storey / QC Technician

Period: 07/03/2022 - 07/09/2022

Report Date 07/08/2022

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	97.1	%	95-100
	#8 (2.36mm)	82.5	%	65-95
	#16 (1.18mm)	67.2	%	35-75
	#30 (.6mm)	46.4	%	20-55
	#50 (.3mm)	16.0	%	10-30
	#100 (.15mm)	2.9	%	0-10
	#200 (75µm)	0.5	%	
	FM	2.88		2.6-3
	Wash Loss (#200/75um)	0.3	%	0-3
	Total Moisture	2.86	%	



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Plant S36-Superior Auburn Hills

Product 7920-INTERMED AGG P1M LS

Name/Title Doug Storey / QC Technician

Period: 07/03/2022 - 07/09/2022

Report Date 07/08/2022

Procedure	Sieve/Test	Result	Unit	Intermed Agg P1M LS Target
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	
	1" (25mm)	100.0	%	
	3/4" (19mm)	98.0	%	
	1/2" (12.5mm)	84.2	%	
	3/8" (9.5mm)	62.3	%	
	#4 (4.75mm)	20.0	%	
	#8 (2.36mm)	7.9	%	
	#16 (1.18mm)	4.6	%	
	#30 (.6mm)	3.7	%	
	#50 (.3mm)	3.4	%	
	#100 (.15mm)	3.2	%	
	#200 (75µm)	2.8	%	
	Wash Loss (#200/75um)	2.6	%	0-3
	Total Moisture	1.96	%	



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Plant S36-Superior Auburn Hills
Product 7919-COARSE AGG P1M LS
Period: 07/03/2022 - 07/09/2022

Name/Title Doug Storey / QC Technician
Report Date 07/08/2022

Procedure	Sieve/Test	Result	Unit	Coarse Agg P1M LS Target
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	97.5	%	
	1" (25mm)	47.3	%	
	3/4" (19mm)	10.9	%	
	1/2" (12.5mm)	2.8	%	
	3/8" (9.5mm)	2.2	%	
	#4 (4.75mm)	1.9	%	
	#8 (2.36mm)	1.9	%	
	#16 (1.18mm)	1.9	%	
	#30 (.6mm)	1.8	%	
	#50 (.3mm)	1.8	%	
	#100 (.15mm)	1.6	%	
	#200 (75µm)	1.4	%	
	Wash Loss (#200/75um)	1.2	%	0-2
	Total Moisture	0.42	%	