

Aggregate Optimization Chart

PLANT #: **P-101**

Sample Date: 7/5/21 Concrete Grade: **P1M**
 Dates Test Represents: 7/6/2021 through 7/12/2021

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	1070	6.54	2.62	34.9
IA	71-47	Presque Isle	800	4.89	2.62	26.1
2NS	75-051	Mid-Michigan	1200	7.23	2.66	39.1
Total Wt			3070	18.67		100.0

<---- Verify this number is 100%



Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

Sieve	CA	IA	2NS	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	99.1	0.9	0.9
1"	50.3	100.0	100.0	82.7	16.5	17.3
3/4"	13.0	98.6	100.0	69.3	13.4	30.7
1/2"	2.8	79.1	100.0	60.7	8.6	39.3
3/8"	1.9	54.4	100.0	53.9	6.8	46.1
#4	1.4	13.6	99.1	42.8	11.2	57.2
#8	1.3	4.2	79.9	32.8	10.0	67.2
#16	1.2	2.7	62.3	25.5	7.3	74.5
#30	1.1	2.3	47.5	19.5	5.9	80.5
#50	1.1	2.1	26.3	11.2	8.3	88.8
#100	1.0	1.9	7.4	3.7	7.5	96.3
LBW	0.9	1.8	0.9	1.1	2.6	98.9

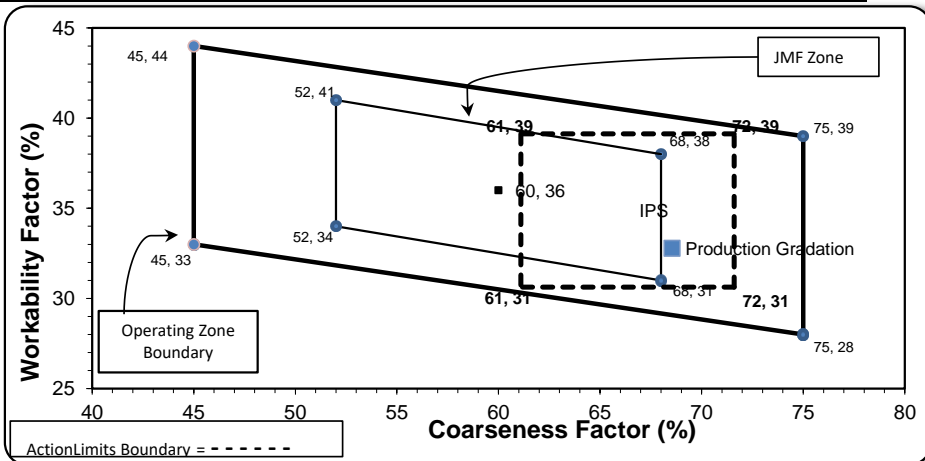
*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size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

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor:	69	Workability Factor:	33
---------------------------	-----------	----------------------------	-----------

Initial Production Sample (IPS)

Coarseness Factor:	66		
Workability Factor:	35		
Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	99.6	0.4	0.4
1"	84.3	15.3	15.7
3/4"	74.8	9.6	25.2
1/2"	64.3	10.4	35.7
3/8"	56.8	7.5	43.2
#4	43.0	13.8	57.0
#8	34.9	8.1	65.1
#16	26.4	8.5	73.6
#30	19.9	6.5	80.1
#50	10.4	9.5	89.6
#100	3.4	7.0	96.6
LBW	1.2	2.2	98.8



PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: P-102

Sample Date: 7/5/21

Concrete Grade: P1M

Contractor: _____

Dates Test Represents: 7/6/2021 through 7/12/2021

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	58-003	Stoneco	1420	8.46	2.69	45.5
IA	58-003	Stoneco	500	2.98	2.69	16.0
2NS	63-114	Highland	1200	7.26	2.65	38.5
Total Wt			3120	18.70		100.0

<----- Verify this number is 100%



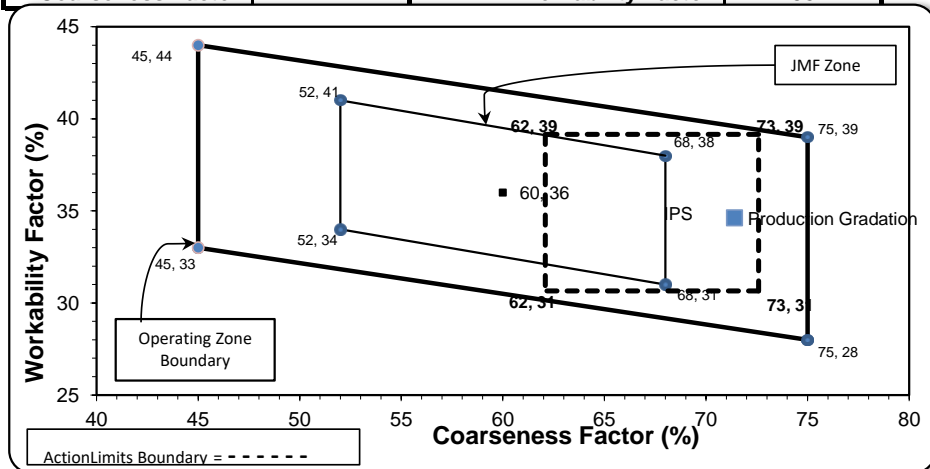
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	67.6	100.0	100.0	85.3	14.7	14.7
3/4"	35.2	100.0	100.0	70.5	14.7	29.5
1/2"	10.8	91.8	100.0	58.1	12.4	41.9
3/8"	4.4	80.2	100.0	53.3	4.8	46.7
#4	1.8	28.0	99.1	43.4	9.9	56.6
#8	1.4	7.8	85.1	34.6	8.8	65.4
#16	1.3	3.7	66.9	26.9	7.7	73.1
#30	1.1	2.2	47.0	18.9	8.0	81.1
#50	1.0	1.8	23.9	9.9	9.0	90.1
#100	0.9	1.7	5.7	2.9	7.1	97.1
LBW	0.9	1.4	0.9	1.0	1.9	99.0

*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% 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

Coarseness Factor:	71	Workability Factor:	35
---------------------------	-----------	----------------------------	-----------



Initial Production Sample (IPS)

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"	85.5	14.5	14.5
3/4"	73.4	12.1	26.6
1/2"	61.0	12.4	39.0
3/8"	56.2	4.8	43.8
#4	43.1	13.1	56.9
#8	34.9	8.2	65.1
#16	29.4	5.5	70.6
#30	21.6	7.8	78.4
#50	8.1	13.4	91.9
#100	2.2	5.9	97.8
LBW	1.4	0.8	98.6

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: P-12

Sample Date: 7/5/21

Concrete Grade: P1M

Contractor: _____

Dates Test Represents: 7/6/2021 through 7/12/2021

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	820	5.02	2.62	26.7
IA	71-47	Presque Isle	1000	6.12	2.62	32.6
2NS	63-115	Ray Rd	1250	7.56	2.65	40.7
Total Wt			3070	18.69		100.0

<----- Verify this number is 100%



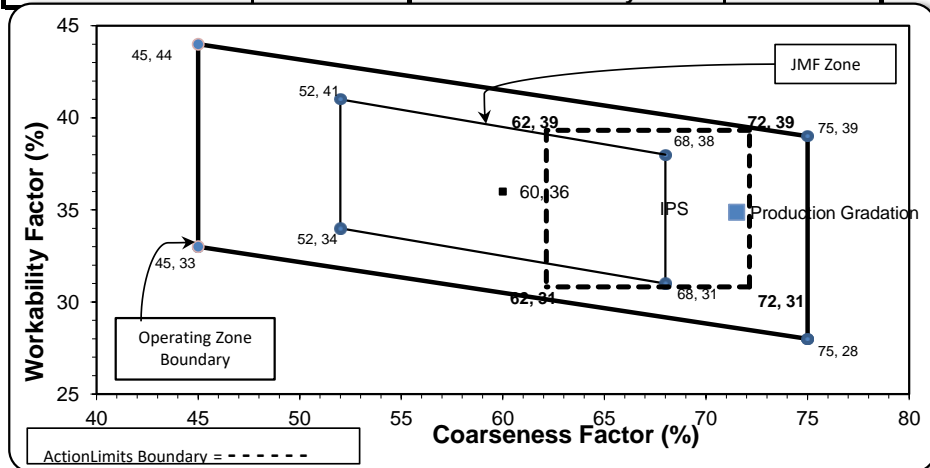
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	96.3	100.0	100.0	99.0	1.0	1.0
1"	40.2	100.0	100.0	84.0	15.0	16.0
3/4"	9.2	96.0	100.0	74.4	9.6	25.6
1/2"	2.5	58.7	100.0	60.5	13.9	39.5
3/8"	2.0	37.4	100.0	53.4	7.1	46.6
#4	1.8	8.9	96.7	42.8	10.7	57.2
#8	1.8	4.1	81.2	34.9	7.9	65.1
#16	1.8	3.4	66.5	28.7	6.2	71.3
#30	1.8	3.2	50.1	21.9	6.7	78.1
#50	1.7	3.1	24.9	11.6	10.3	88.4
#100	1.6	3.0	5.2	3.5	8.1	96.5
LBW	1.4	2.5	0.7	1.5	2.0	98.5

*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

Coarseness Factor:	72	Workability Factor:	35
---------------------------	-----------	----------------------------	-----------



Initial Production Sample (IPS)

Coarseness Factor:	67		
Workability Factor:	35		
Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	99.6	0.4	0.4
1"	83.9	15.7	16.1
3/4"	74.0	9.8	26.0
1/2"	63.7	10.3	36.3
3/8"	56.4	7.3	43.6
#4	43.0	13.4	57.0
#8	35.1	7.9	64.9
#16	29.0	6.1	71.0
#30	20.9	8.0	79.1
#50	8.1	12.8	91.9
#100	1.6	6.5	98.4
LBW	0.9	0.8	99.1

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: **P-20**

Sample Date: 7/5/21

Concrete Grade: **P1M**

Contractor: _____

Dates Test Represents: 7/6/2021 through 7/12/2021

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	950	5.81	2.62	30.9
IA	71-47	Presque Isle	920	5.63	2.62	30.0
2NS	63-92	Grange Hall	1200	7.26	2.65	39.1
Total Wt			3070	18.70		100.0

<----- Verify this number is 100%



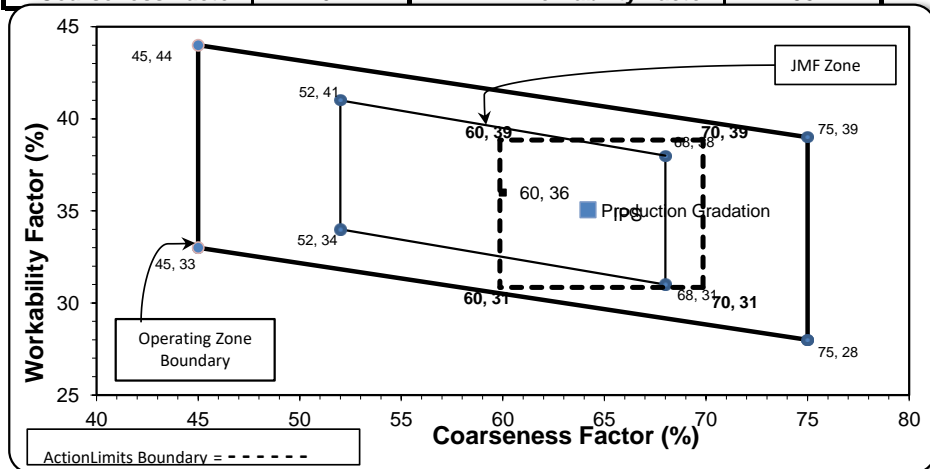
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

Sieve	CA	IA	2NS	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	99.2	0.8	0.8
1"	45.2	100.0	100.0	83.0	16.2	17.0
3/4"	11.5	99.1	100.0	72.3	10.7	27.7
1/2"	2.7	82.3	100.0	64.6	7.8	35.4
3/8"	2.1	62.0	100.0	58.3	6.3	41.7
#4	1.8	17.3	98.4	44.2	14.1	55.8
#8	1.7	4.5	84.9	35.1	9.1	64.9
#16	1.6	2.8	69.8	28.6	6.4	71.4
#30	1.5	2.4	50.0	20.7	7.9	79.3
#50	1.4	2.2	23.5	10.3	10.4	89.7
#100	1.3	2.1	3.2	2.3	8.0	97.7
LBW	1.1	1.9	0.8	1.2	1.1	98.8

*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

Coarseness Factor:	64	Workability Factor:	35
---------------------------	-----------	----------------------------	-----------



Initial Production Sample (IPS)

Coarseness Factor:	65		
Workability Factor:	35		
Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	99.1	0.9	0.9
1"	80.8	18.2	19.2
3/4"	71.3	9.6	28.7
1/2"	64.0	7.3	36.0
3/8"	57.7	6.2	42.3
#4	42.8	15.0	57.2
#8	34.8	7.9	65.2
#16	28.4	6.4	71.6
#30	20.2	8.2	79.8
#50	7.6	12.6	92.4
#100	1.6	6.0	98.4
LBW	1.0	0.6	99.0

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: **P-32**

Sample Date: 7/5/21

Concrete Grade: **P1M**

Contractor: _____

Dates Test Represents: 7/6/2021 through 7/12/2021

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	700	4.28	2.62	22.8
IA	71-47	Presque Isle	1120	6.85	2.62	36.5
2NS	95-013	Smelter Bay	1250	7.56	2.65	40.7
Total Wt			3070	18.69		100.0

<----- Verify this number is 100%



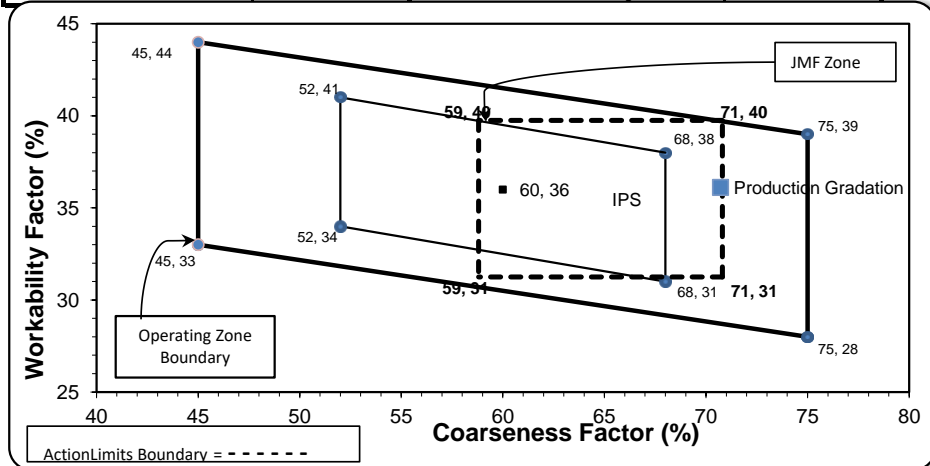
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	96.3	100.0	100.0	99.2	0.8	0.8
1"	40.2	100.0	100.0	86.4	12.8	13.6
3/4"	9.2	96.0	100.0	77.8	8.5	22.2
1/2"	2.5	58.7	100.0	62.7	15.1	37.3
3/8"	2.0	37.4	100.0	54.8	7.9	45.2
#4	1.8	8.9	96.0	42.7	12.1	57.3
#8	1.8	4.1	84.0	36.1	6.6	63.9
#16	1.8	3.4	68.8	29.7	6.4	70.3
#30	1.8	3.2	49.4	21.7	8.0	78.3
#50	1.7	3.1	23.4	11.0	10.6	89.0
#100	1.6	3.0	6.2	4.0	7.1	96.0
LBW	1.4	2.5	1.4	1.8	2.2	98.2

*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

Coarseness Factor: **71** **Workability Factor:** **36**



Initial Production Sample (IPS)

Coarseness Factor: 65		Workability Factor: 36	
Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	99.0	0.6	0.6
1"	84.0	15.3	16.0
3/4"	73.5	10.5	26.5
1/2"	65.2	8.2	34.8
3/8"	58.2	7.1	41.8
#4	44.1	14.1	55.9
#8	35.5	8.6	64.5
#16	29.1	6.4	70.9
#30	21.9	7.3	78.1
#50	9.6	12.2	90.4
#100	2.6	7.1	97.4
LBW	1.0	1.6	99.0

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: **P-35**

Sample Date: 7/5/21

Concrete Grade: **P1M**

Contractor: _____

Dates Test Represents: 7/6/2021 through 7/12/2021

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	58-003	Stoneco	1370	8.16	2.69	43.9
IA	58-003	Stoneco	550	3.28	2.69	17.6
2NS	81-093	Burmeister	1200	7.26	2.65	38.5
Total Wt			3120	18.70		100.0

<----- Verify this number is 100%



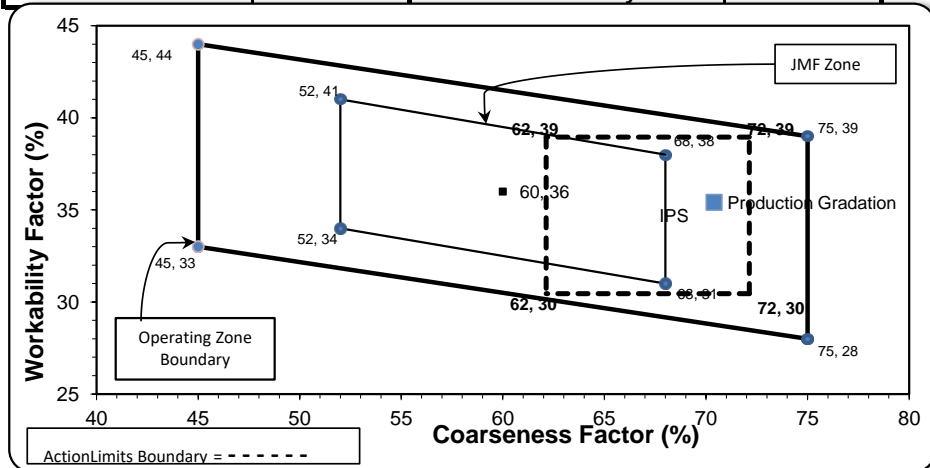
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	67.6	100.0	100.0	85.8	14.2	14.2
3/4"	35.2	100.0	100.0	71.5	14.2	28.5
1/2"	10.8	91.8	100.0	59.4	12.2	40.6
3/8"	4.4	80.2	100.0	54.5	4.9	45.5
#4	1.8	28.0	98.4	43.6	11.0	56.4
#8	1.4	7.8	86.9	35.4	8.2	64.6
#16	1.3	3.7	72.2	29.0	6.4	71.0
#30	1.1	2.2	51.9	20.8	8.2	79.2
#50	1.0	1.8	18.8	8.0	12.8	92.0
#100	0.9	1.7	3.1	1.9	6.1	98.1
LBW	0.9	1.4	0.8	0.9	0.9	99.1

*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

Coarseness Factor: **70** Workability Factor: **35**



Initial Production Sample (IPS)

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"	86.9	13.1	13.1
3/4"	76.1	10.8	23.9
1/2"	63.7	12.4	36.3
3/8"	56.2	7.5	43.8
#4	43.2	13.0	56.8
#8	34.7	8.5	65.3
#16	27.5	7.2	72.5
#30	20.6	7.0	79.4
#50	9.0	11.6	91.0
#100	2.1	6.9	97.9
LBW	1.0	1.1	99.0

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: **P-36**

Sample Date: 7/5/21

Concrete Grade: **P1M**

Contractor: _____

Dates Test Represents: 7/6/2021 through 7/12/2021

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	720	4.40	2.62	23.5
IA	71-47	Presque Isle	1150	7.03	2.62	37.5
2NS	63-92	Grange Hall	1200	7.26	2.65	39.1
Total Wt			3070	18.70		100.0

<----- Verify this number is 100%



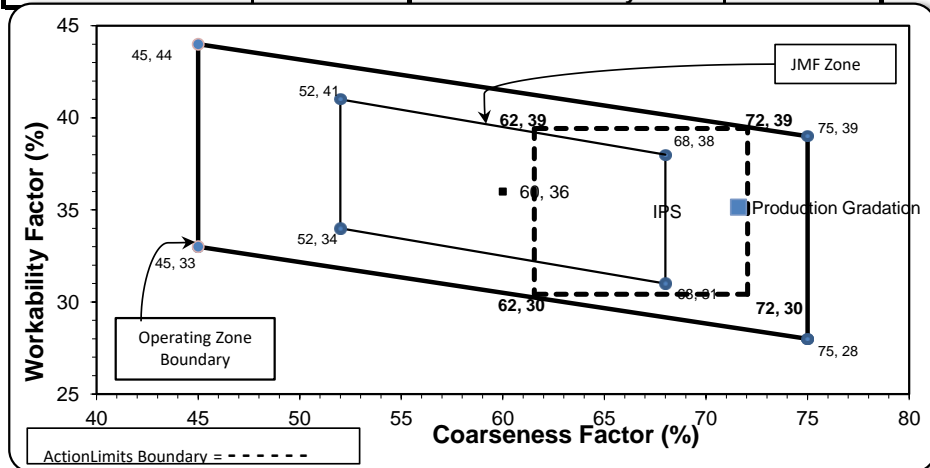
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	96.3	100.0	100.0	99.1	0.9	0.9
1"	40.2	100.0	100.0	86.0	13.2	14.0
3/4"	9.2	96.0	100.0	77.2	8.8	22.8
1/2"	2.5	58.7	100.0	61.7	15.5	38.3
3/8"	2.0	37.4	100.0	53.6	8.1	46.4
#4	1.8	8.9	98.4	42.2	11.3	57.8
#8	1.8	4.1	84.9	35.1	7.1	64.9
#16	1.8	3.4	69.8	29.0	6.2	71.0
#30	1.8	3.2	50.0	21.2	7.8	78.8
#50	1.7	3.1	23.5	10.7	10.4	89.3
#100	1.6	3.0	3.2	2.7	8.0	97.3
LBW	1.4	2.5	0.8	1.6	1.2	98.4

*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

Coarseness Factor:	72	Workability Factor:	35
---------------------------	-----------	----------------------------	-----------



Initial Production Sample (IPS)

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:

Aggregate Optimization Chart

PLANT #: **P-39**

Sample Date: 7/5/21

Concrete Grade: **P1M**

Contractor: _____

Dates Test Represents: 7/6/2021 through 7/12/2021

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	1070	6.54	2.62	34.9
IA	71-47	Presque Isle	750	4.59	2.62	24.4
2NS	44-051	Krake Willis Rd	1250	7.56	2.65	40.7
Total Wt			3070	18.69		100.0

<----- Verify this number is 100%



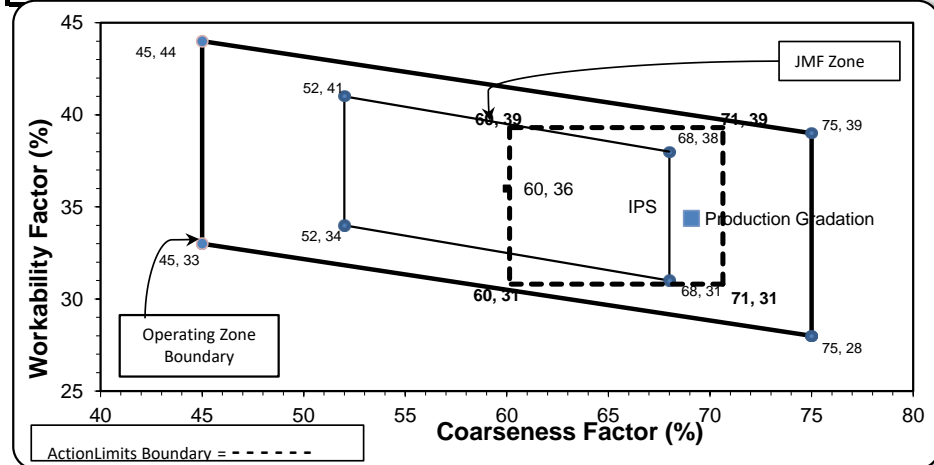
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

Sieve	CA	IA	2NS	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	99.1	0.9	0.9
1"	50.3	100.0	100.0	82.7	16.5	17.3
3/4"	13.0	98.6	100.0	69.3	13.3	30.7
1/2"	2.8	79.1	100.0	61.0	8.3	39.0
3/8"	1.9	54.4	100.0	54.7	6.3	45.3
#4	1.4	13.6	97.6	43.5	11.1	56.5
#8	1.3	4.2	80.8	34.4	9.2	65.6
#16	1.2	2.7	64.6	27.4	7.0	72.6
#30	1.1	2.3	48.4	20.7	6.7	79.3
#50	1.1	2.1	25.8	11.4	9.3	88.6
#100	1.0	1.9	8.2	4.2	7.2	95.8
LBW	0.9	1.8	1.6	1.4	2.7	98.6

*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 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

Coarseness Factor:	69	Workability Factor:	34
---------------------------	-----------	----------------------------	-----------



Initial Production Sample (IPS)

Coarseness Factor:	65		
Workability Factor:	35		
Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	99.6	0.4	0.4
1"	83.9	15.7	16.1
3/4"	74.1	9.8	25.9
1/2"	64.3	9.7	35.7
3/8"	57.5	6.8	42.5
#4	44.5	13.1	55.5
#8	35.1	9.4	64.9
#16	27.9	7.2	72.1
#30	21.7	6.2	78.3
#50	12.6	9.1	87.4
#100	3.5	9.1	96.5
LBW	1.2	2.4	98.8

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: **P-02**

Sample Date: 7/5/21

Concrete Grade: **P1M**

Contractor: _____

Dates Test Represents: 7/6/2021 through 7/12/2021

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	750	4.59	2.62	24.4
IA	71-47	Presque Isle	1070	6.54	2.62	34.9
2NS	63-115	Ray Rd	1250	7.56	2.65	40.7
Total Wt			3070	18.69		100.0

<----- Verify this number is 100%



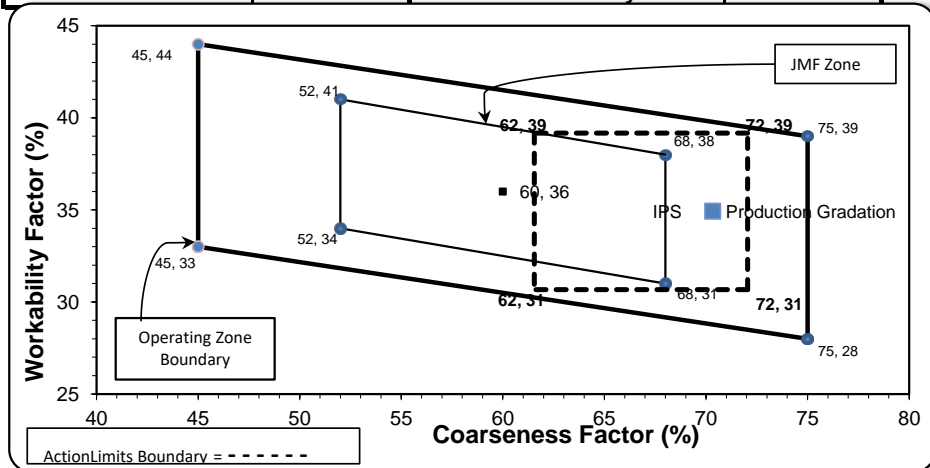
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	96.3	100.0	100.0	99.1	0.9	0.9
1"	40.2	100.0	100.0	85.4	13.7	14.6
3/4"	9.2	96.0	100.0	76.4	9.0	23.6
1/2"	2.5	58.7	100.0	61.8	14.6	38.2
3/8"	2.0	37.4	100.0	54.2	7.5	45.8
#4	1.8	8.9	96.7	42.9	11.3	57.1
#8	1.8	4.1	81.2	34.9	8.0	65.1
#16	1.8	3.4	66.5	28.7	6.2	71.3
#30	1.8	3.2	50.1	22.0	6.7	78.0
#50	1.7	3.1	24.9	11.6	10.3	88.4
#100	1.6	3.0	5.2	3.6	8.1	96.4
LBW	1.4	2.5	0.7	1.5	2.1	98.5

*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

Coarseness Factor: **70** **Workability Factor:** **35**



Initial Production Sample (IPS)

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"	72.3	12.7	27.7
1/2"	64.5	7.8	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: