

Aggregate Optimization Chart

PLANT #: **P-101**

Sample Date: 7/22/24

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 7/23/2024 through 7/29/2024

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	1020	6.24	2.62	33.2
IA	71-47	Presque Isle	850	5.20	2.62	27.7
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"	95.0	100.0	100.0	98.3	1.7	1.7
1"	35.5	100.0	100.0	78.6	19.8	21.4
3/4"	9.4	97.9	100.0	69.3	9.3	30.7
1/2"	1.8	73.3	100.0	60.0	9.3	40.0
3/8"	1.5	47.2	100.0	52.7	7.3	47.3
#4	1.3	6.3	96.6	39.9	12.7	60.1
#8	1.3	1.9	80.8	32.5	7.4	67.5
#16	1.2	1.5	66.0	26.6	5.9	73.4
#30	1.2	1.4	51.5	20.9	5.7	79.1
#50	1.1	1.3	28.2	11.7	9.2	88.3
#100	1.0	1.1	8.6	4.0	7.7	96.0
LBW	0.8	0.9	1.4	1.1	2.9	98.9

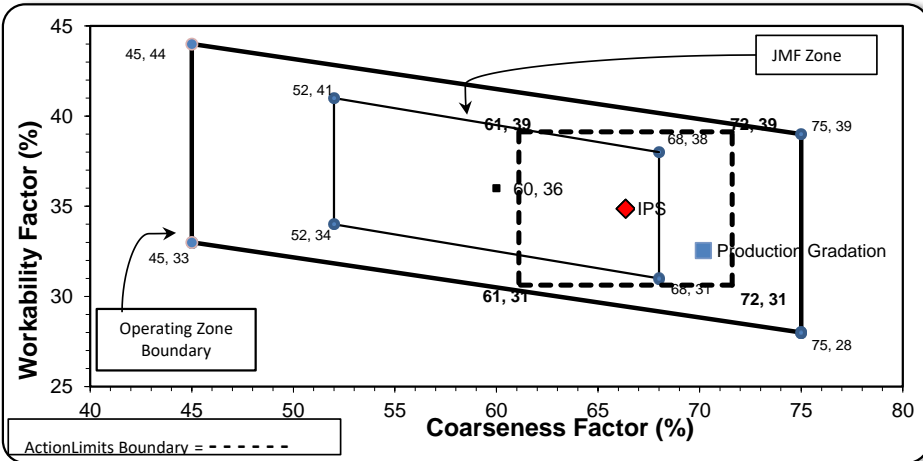
*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size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

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor:	70	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: 7/22/24

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 7/23/2024 through 7/29/2024

Contractor: _____

MDOT No.: _____



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

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

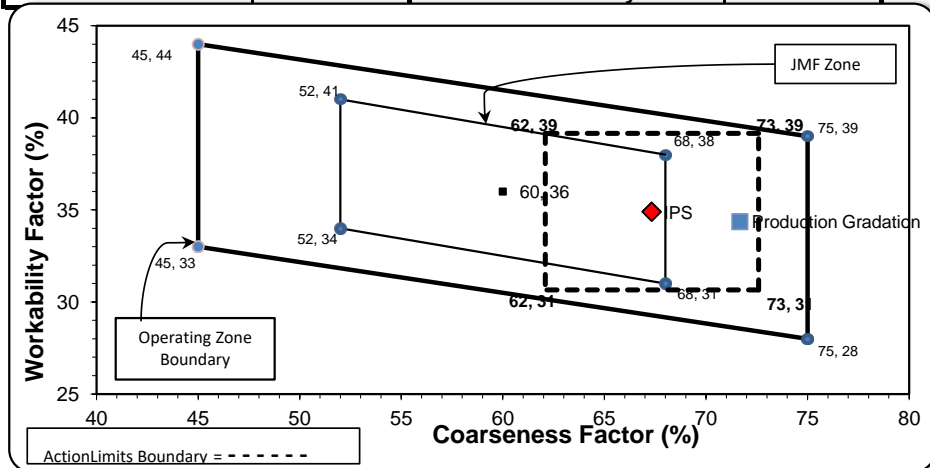
<----- Verify this number is 100%

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"	62.8	100.0	100.0	83.1	16.9	16.9
3/4"	32.8	100.0	100.0	69.4	13.7	30.6
1/2"	11.0	90.4	100.0	58.0	11.5	42.0
3/8"	6.2	72.9	100.0	53.0	5.0	47.0
#4	2.5	18.7	99.0	42.2	10.8	57.8
#8	2.1	2.8	85.7	34.4	7.8	65.6
#16	1.9	1.8	69.1	27.7	6.6	72.3
#30	1.7	1.6	48.6	19.7	8.0	80.3
#50	1.5	1.4	19.4	8.4	11.4	91.6
#100	1.3	1.3	3.5	2.1	6.2	97.9
LBW	0.6	1.2	0.5	0.7	1.5	99.3

*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:** 34



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-103**

Sample Date: 7/22/24

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 7/23/2024 through 7/29/2024

Contractor: _____

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%



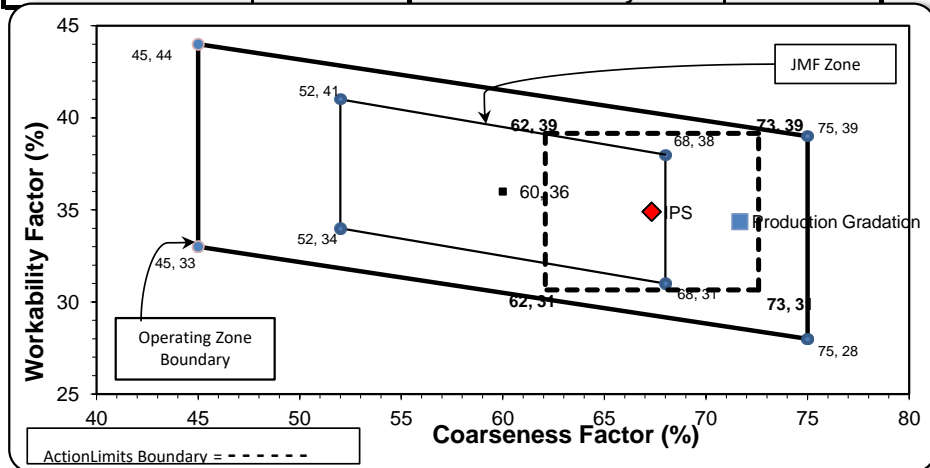
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

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"	62.8	100.0	100.0	83.1	16.9	16.9
3/4"	32.8	100.0	100.0	69.4	13.7	30.6
1/2"	11.0	90.4	100.0	58.0	11.5	42.0
3/8"	6.2	72.9	100.0	53.0	5.0	47.0
#4	2.5	18.7	99.0	42.2	10.8	57.8
#8	2.1	2.8	85.7	34.4	7.8	65.6
#16	1.9	1.8	69.1	27.7	6.6	72.3
#30	1.7	1.6	48.6	19.7	8.0	80.3
#50	1.5	1.4	19.4	8.4	11.4	91.6
#100	1.3	1.3	3.5	2.1	6.2	97.9
LBW	0.6	1.2	0.5	0.7	1.5	99.3

*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:	34
---------------------------	-----------	----------------------------	-----------



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 #: 12

Sample Date: 7/22/24

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 7/23/2024 through 7/29/2024

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	1020	6.24	2.62	33.2
IA	71-47	Presque Isle	850	5.20	2.62	27.7
2NS	63-115	Ray Rd	1200	7.26	2.65	39.1
Total Wt			3070	18.70		100.0

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



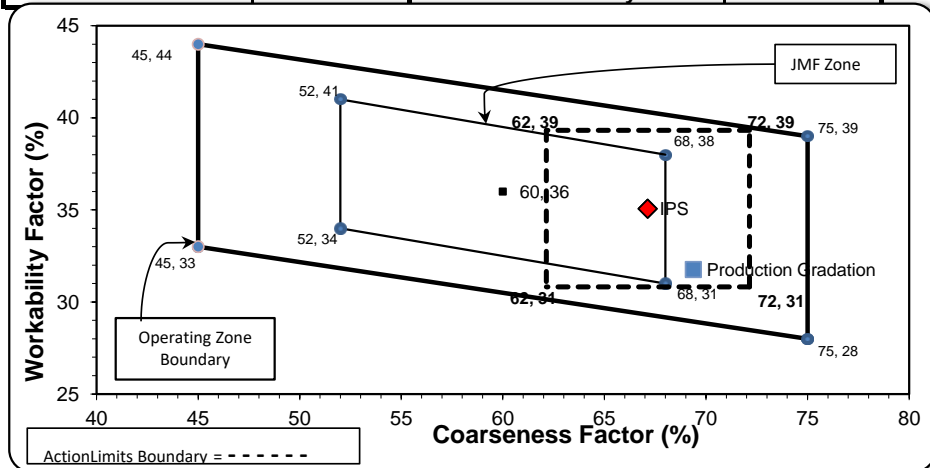
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	95.0	100.0	100.0	98.3	1.7	1.7
1"	35.5	100.0	100.0	78.6	19.8	21.4
3/4"	9.4	97.9	100.0	69.3	9.3	30.7
1/2"	1.8	73.3	100.0	60.0	9.3	40.0
3/8"	1.5	47.2	100.0	52.7	7.3	47.3
#4	1.3	6.3	97.2	40.2	12.5	59.8
#8	1.3	1.9	78.8	31.8	8.4	68.2
#16	1.2	1.5	62.0	25.0	6.7	75.0
#30	1.2	1.4	46.6	19.0	6.0	81.0
#50	1.1	1.3	26.0	10.9	8.1	89.1
#100	1.0	1.1	6.0	3.0	7.9	97.0
LBW	0.8	0.9	0.7	0.8	2.2	99.2

*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: 69 **Workability Factor:** 32



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 #: 20

Sample Date: 7/22/24

Dates Test Represents: 7/23/2024 through 7/29/2024

Concrete Grade: **P1M, 3500HP**

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	970	5.93	2.62	31.6
IA	71-47	Presque Isle	900	5.50	2.62	29.3
2NS	63-92	Grange Hall	1200	7.26	2.65	39.1
Total Wt			3070	18.70		100.0

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



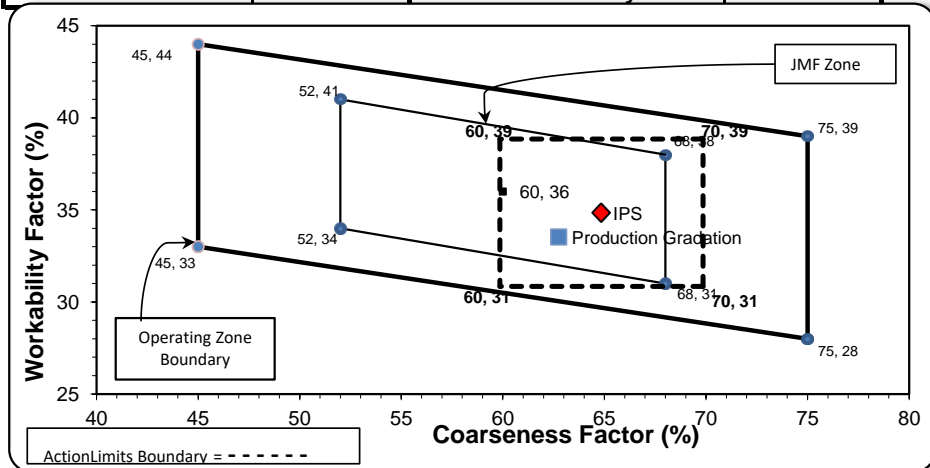
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	99.4	100.0	100.0	99.8	0.2	0.2
1"	47.9	100.0	100.0	83.5	16.3	16.5
3/4"	14.3	99.7	100.0	72.8	10.7	27.2
1/2"	3.8	82.8	100.0	64.6	8.3	35.4
3/8"	2.9	62.4	100.0	58.3	6.3	41.7
#4	2.3	13.3	97.4	42.7	15.6	57.3
#8	2.1	3.6	81.4	33.5	9.2	66.5
#16	2.1	2.3	66.2	27.2	6.3	72.8
#30	2.0	2.1	48.6	20.2	7.0	79.8
#50	1.9	1.9	24.9	10.9	9.4	89.1
#100	1.8	1.8	4.2	2.7	8.2	97.3
LBW	1.6	1.6	0.6	1.2	1.5	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: 63 **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"	99.1	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 #: P11

Sample Date: 7/22/24

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 7/23/2024 through 7/29/2024

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	1020	6.24	2.62	33.2
IA	71-47	Presque Isle	850	5.20	2.62	27.7
2NS	63-115	Ray Rd	1200	7.26	2.65	39.1
Total Wt			3070	18.70		100.0

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



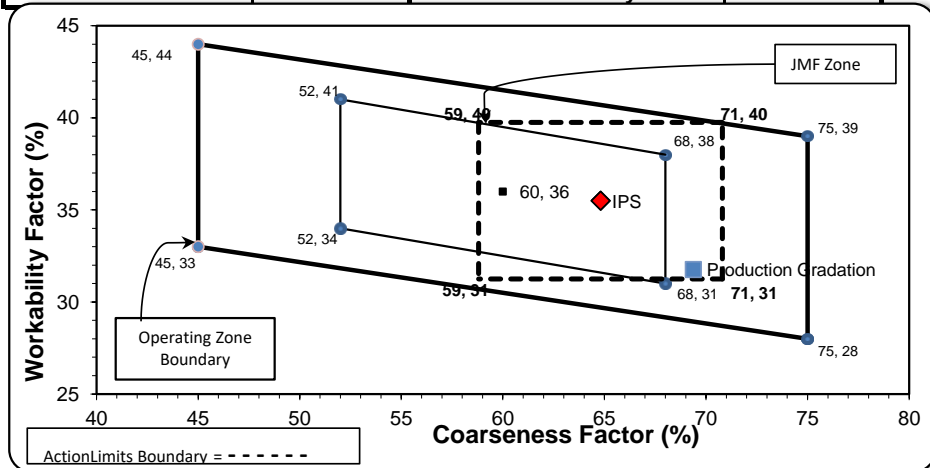
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	95.0	100.0	100.0	98.3	1.7	1.7
1"	35.5	100.0	100.0	78.6	19.8	21.4
3/4"	9.4	97.9	100.0	69.3	9.3	30.7
1/2"	1.8	73.3	100.0	60.0	9.3	40.0
3/8"	1.5	47.2	100.0	52.7	7.3	47.3
#4	1.3	6.3	97.2	40.2	12.5	59.8
#8	1.3	1.9	78.8	31.8	8.4	68.2
#16	1.2	1.5	62.0	25.0	6.7	75.0
#30	1.2	1.4	46.6	19.0	6.0	81.0
#50	1.1	1.3	26.0	10.9	8.1	89.1
#100	1.0	1.1	6.0	3.0	7.9	97.0
LBW	0.8	0.9	0.7	0.8	2.2	99.2

*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:	69	Workability Factor:	32
---------------------------	-----------	----------------------------	-----------



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: 7/22/24

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 7/23/2024 through 7/29/2024

Contractor: _____

MDOT No.: _____



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

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	81-019	Pleasant Lake	1200	7.26	2.65	38.5
Total Wt			3120	18.70		100.0

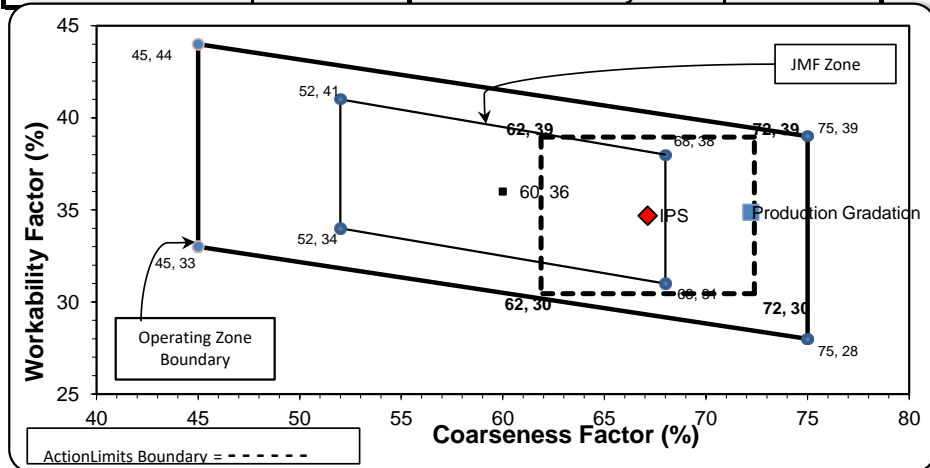
<----- Verify this number is 100%

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"	62.8	100.0	100.0	83.1	16.9	16.9
3/4"	32.8	100.0	100.0	69.4	13.7	30.6
1/2"	11.0	90.4	100.0	58.0	11.5	42.0
3/8"	6.2	72.9	100.0	53.0	5.0	47.0
#4	2.5	18.7	98.5	42.0	10.9	58.0
#8	2.1	2.8	87.0	34.9	7.2	65.1
#16	1.9	1.8	66.3	26.7	8.2	73.3
#30	1.7	1.6	44.2	18.0	8.6	82.0
#50	1.5	1.4	20.0	8.6	9.4	91.4
#100	1.3	1.3	3.7	2.2	6.4	97.8
LBW	0.6	1.2	0.7	0.7	1.5	99.3

*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"	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: 7/22/24

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 7/23/2024 through 7/29/2024

Contractor: _____

MDOT No.: _____



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

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	1020	6.24	2.62	33.2
IA	71-47	Presque Isle	850	5.20	2.62	27.7
2NS	63-92	Grange Hall	1200	7.26	2.65	39.1
Total Wt			3070	18.70		100.0

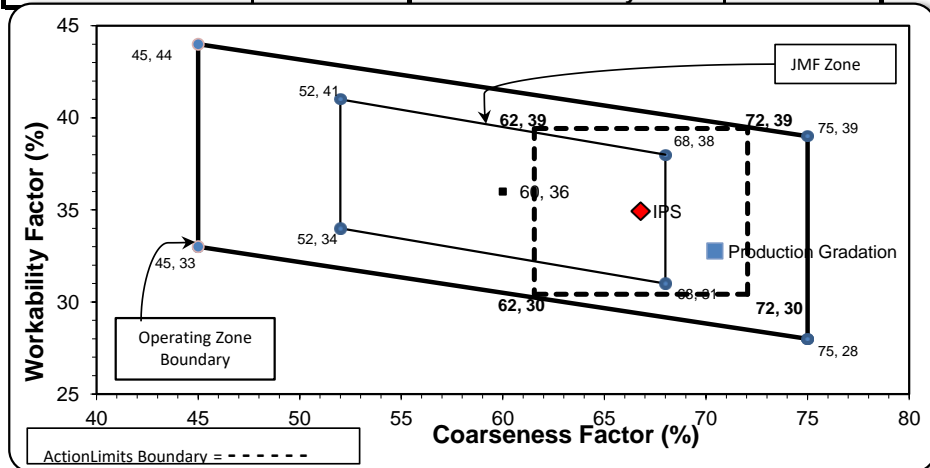
<----- Verify this number is 100%

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	95.0	100.0	100.0	98.3	1.7	1.7
1"	35.5	100.0	100.0	78.6	19.8	21.4
3/4"	9.4	97.9	100.0	69.3	9.3	30.7
1/2"	1.8	73.3	100.0	60.0	9.3	40.0
3/8"	1.5	47.2	100.0	52.7	7.3	47.3
#4	1.3	6.3	97.4	40.2	12.4	59.8
#8	1.3	1.9	81.4	32.8	7.5	67.2
#16	1.2	1.5	66.2	26.7	6.1	73.3
#30	1.2	1.4	48.6	19.8	6.9	80.2
#50	1.1	1.3	24.9	10.5	9.3	89.5
#100	1.0	1.1	4.2	2.3	8.2	97.7
LBW	0.8	0.9	0.6	0.7	1.5	99.3

*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:	33
---------------------------	-----------	----------------------------	-----------



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-02**

Sample Date: 7/22/24

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 7/23/2024 through 7/29/2024

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	1020	6.24	2.62	33.2
IA	71-47	Presque Isle	850	5.20	2.62	27.7
2NS	63-115	Ray Rd	1200	7.26	2.65	39.1
Total Wt			3070	18.70		100.0

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



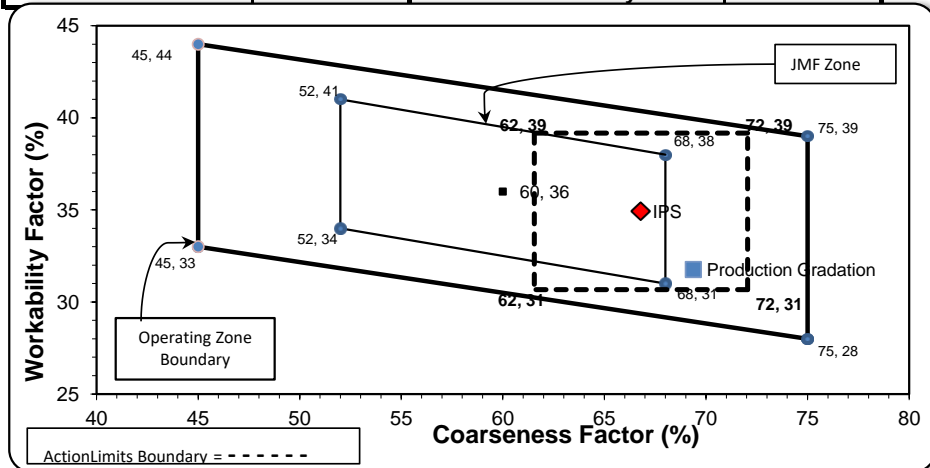
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	95.0	100.0	100.0	98.3	1.7	1.7
1"	35.5	100.0	100.0	78.6	19.8	21.4
3/4"	9.4	97.9	100.0	69.3	9.3	30.7
1/2"	1.8	73.3	100.0	60.0	9.3	40.0
3/8"	1.5	47.2	100.0	52.7	7.3	47.3
#4	1.3	6.3	97.2	40.2	12.5	59.8
#8	1.3	1.9	78.8	31.8	8.4	68.2
#16	1.2	1.5	62.0	25.0	6.7	75.0
#30	1.2	1.4	46.6	19.0	6.0	81.0
#50	1.1	1.3	26.0	10.9	8.1	89.1
#100	1.0	1.1	6.0	3.0	7.9	97.0
LBW	0.8	0.9	0.7	0.8	2.2	99.2

*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:	69	Workability Factor:	32
---------------------------	-----------	----------------------------	-----------



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: