PLANT #: P-101

Sample Date:

LBW

3/22/21 Concrete Grade: P1M
3/23/2021 through 3/29/2021

М

1.1

0.4

Dates Test F	Represents:	3/23/2021	through	3/29/2021		
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

MDOT No.:

Contractor:

<---- Verify this number is 100%

SUPERIOR
MATERIALS

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"	97.0	100.0	100.0	99.0	1.0	1.0
1"	54.3	100.0	100.0	84.8	14.2	15.2
3/4"	14.9	98.3	100.0	71.3	13.6	28.7
1/2"	3.9	82.4	100.0	63.2	8.1	36.8
3/8"	2.9	60.3	100.0	56.7	6.5	43.3
#4	2.0	15.6	98.3	43.4	13.3	56.6
#8	1.7	4.8	83.6	34.6	8.8	65.4 r
#16	1.6	2.8	68.5	28.1	6.5	71.9
#30	1.5	2.5	50.8	21.0	7.0	79.0 r
#50	1.5	2.3	23.8	10.4	10.6	89.6
#100	1.4	2.2	3.6	2.5	8.0	97.5 a

2.1

*Maximum % Retained must be above the 3/8" sieve.

*Any two adjacent sieves must equal 10% except max.,

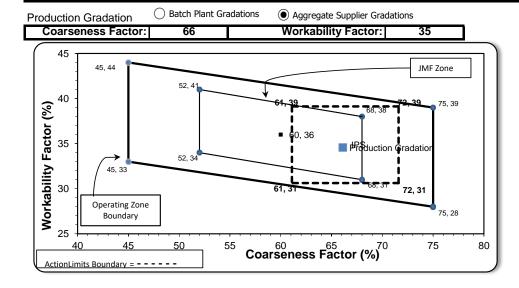
nom. max., #100 and #200 sieves.

 $\ensuremath{^{*}\%}$ 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.



Initial Production Sample (IPS)

98.9

Coars	eness Factor:	66	
Work	ability Factor:	35	
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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

1.2

PLANT #: P-12

Sample Date:

Dates Test Represents:

3/22/21 P1M Concrete Grade:

Contractor:

3/23/2021 3/29/2021 through

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	850	5.20	2.62	27.7
2NS	63-115	Ray Rd	1250	7.56	2.65	40.7
		Total Wt	3070	18.69		100.0

MDOT No.:

- Verify this number is 100%

SUPERIOR MATERIALS

Superior Materials, LLC 30701 W. 10 Mile Rd. Suite 500

Farmington Hills, MI 48336

*Maximum % Retained must be above the 3/8" sieve.

*Any two adjacent sieves must equal 10% except max.,

nom. max., #100 and #200 sieves.

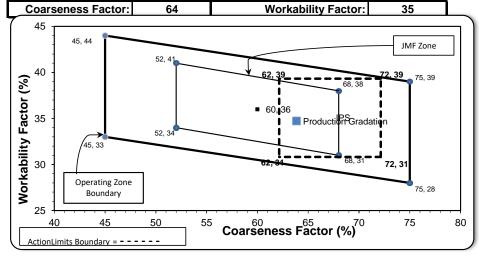
*% Retained must be at least 4% for each sieve except max.,

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.

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	97.0	100.0	100.0	99.1	0.9	0.9
1"	54.3	100.0	100.0	85.6	13.5	14.4
3/4"	14.9	98.3	100.0	72.6	12.9	27.4
1/2"	3.9	82.4	100.0	64.8	7.9	35.2
3/8"	2.9	60.3	100.0	58.3	6.4	41.7
#4	2.0	15.6	98.1	44.9	13.4	55.1
#8	1.7	4.8	80.7	34.7	10.2	65.3
#16	1.6	2.8	63.4	27.1	7.6	72.9
#30	1.5	2.5	47.2	20.4	6.7	79.6
#50	1.5	2.3	22.8	10.4	10.0	89.6
#100	1.4	2.2	4.2	2.8	7.6	97.2
LBW	1.2	2.1	0.7	1.2	1.5	98.8
Production Gradation O Batch Plant Gradations						



Coars	eness Factor:	67	
Work	ability Factor:	35	
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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

PLANT #: P-32 Sample Date:

CA

100.0

97.0

54.3

14.9

3.9

2.9

2.0

1.7

1.6

1.5

1.5

1.4

Sieve

2"

1.5"

3/4"

1/2'

3/8'

#4

#8

#16

#30

#50

#100

3/22/21 P₁M Concrete Grade: 3/29/2021

Contractor:	

15.2

28.7

36.5

42.6

56.1

64.4

71.5

81.0

91.2

97.2

98.6

MDOT No.:

14.2

13.5

7.8

6.1

13.5

8.2

7.1

9.5

10.3

5.9

1.5

Cumulative

% Passing

100.0

99.0

84.8

71.3

63.5

57.4

43.9

35.6

28.5

19.0

8.8

2.8

2NS

100.0

100.0

100.0

100.0

100.0

100.0

96.1

83.0

66.9

43.9

18.8

4.4

Dates Test F	Represents:	3/23/2021	through	3/29/2021		
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	800	4.89	2.62	26.1
2NS	95-013	Smelter Bay	1250	7.56	2.65	40.7
		Total Wt	3070	18.69		100.0

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	800	4.89	2.62	26.1
2NS	95-013	Smelter Bay	1250	7.56	2.65	40.7
		Total Wt	3070	18.69		100.0
					,	·

IΑ

100.0

100.0

100.0

98.3

82.4

60.3

15.6

4.8

2.8

2.5

2.3

2.2

< Verify this n	umber is 100%	SUPERIOR MATERIALS
% Retained	Cumulative % Retained	<u>Superior Materials, LLC</u> 30701 W. 10 Mile Rd.
0.0	0.0	Suite 500
1.0	1.0	Farmington Hills, MI 48336

*Maximum % Retained must be above the 3/8" sieve.

*Any two adjacent sieves must equal 10% except max.,

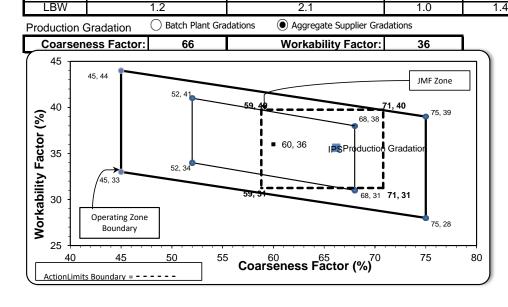
nom. max., #100 and #200 sieves.

*% 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



Intial Production Sample (IPS)

Coars	eness Factor:	65	
Work	Workability Factor:		
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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

PLANT #: P-36
Sample Date: 3/22/21 Concrete Grade:

Concrete Grade: P1M

MDOT	Nο·
IVIDOI	INO

Contractor:

Dates Test F	Represents:	3/23/2021	through	3/29/2021		
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%

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

	rotal Wt	10.10		100.0	· voiny and i	umber 13 10070
Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	97.0	100.0	100.0	99.0	1.0	1.0
1"	54.3	100.0	100.0	84.8	14.2	15.2
3/4"	14.9	98.3	100.0	71.3	13.6	28.7
1/2"	3.9	82.4	100.0	63.2	8.1	36.8
3/8"	2.9	60.3	100.0	56.7	6.5	43.3
#4	2.0	15.6	97.4	43.1	13.7	56.9
#8	1.7	4.8	84.2	34.8	8.2	65.2
#16	1.6	2.8	68.6	28.1	6.7	71.9
#30	1.5	2.5	48.2	20.0	8.1	80.0
#50	1.5	2.3	20.6	9.2	10.8	90.8
#100	1.4	2.2	2.8	2.2	7.0	97.8
LBW	1.2	2.1	0.5	1.2	1.0	98.8

*Maximum % Retained must be above the 3/8" sieve.

*Any two adjacent sieves must equal 10% except max.,

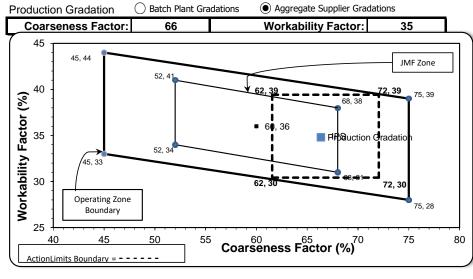
nom. max., #100 and #200 sieves.

*% 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.



Intial Production Sample (IPS)

Coars	eness Factor:	67	
Work	Workability Factor:		
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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

PLANT #: P-39 Sample Date:

Sieve

2"

1.5"

3/4"

1/2'

3/8'

#4

#8

#16

#30

#50

#100

CA

100.0

97.0

54.3

14.9

3.9

2.9

2.0

1.7

1.6

1.5

1.5

1.4

3/22/21 P₁M Concrete Grade: **Dates Test Represents:**

IΑ

100.0

100.0

100.0

98.3

82.4

60.3

15.6

4.8

2.8

2.5

2.3

2.2

3/23/2021	through	3/29/2021		
Source	Weight (SSD)	ft ³	Specific	%
Source	weight (SSD)	It	Gravity	Contribution
Presque Isle	1020	6.24	2.62	33.2
Presaue Isle	850	5.20	2 62	27.7

Contractor:

Cumulative

% Retained

0.0

1.0

15.2

28.7

36.8

43.3

56.9

65.2

71.9

80.0

90.8

97.8

MDOT No.:

% Retained

0.0

1.0

14.2

13.6

8.1

6.5

13.7

8.2

6.7

8.1

10.8

7.0

1.0

Cumulative

% Passing

100.0

99.0

84.8

71.3

63.2

56.7

43.1

34.8

28.1

20.0

9.2

2.2

2NS

100.0

100.0

100.0

100.0

100.0

100.0

97.4

84.2

68.6

48.2

20.6

2.8

Pit# S Agg. Class CA 71-47 Pre IΑ 71-47 Presque Isle 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

Superior Materials, LLC 30701 W. 10 Mile Rd. Suite 500

Farmington Hills, MI 48336

*Maximum % Retained must be above the 3/8" sieve.

*Any two adjacent sieves must equal 10% except max.,

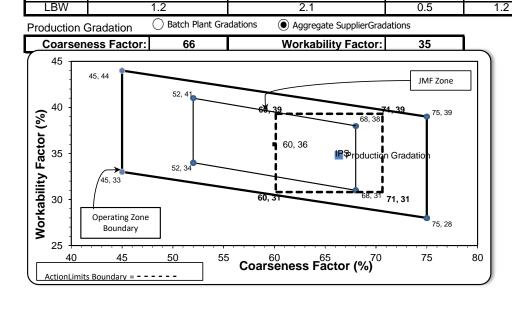
nom. max., #100 and #200 sieves.

*% 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



Intial Production Sample (IPS)

Coars	eness Factor:	65	
Work	Workability Factor:		
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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

PLANT #: P-02

Sample Date:

3/22/21 P1M Concrete Grade: 3/23/2021 3/29/2021

MDOT No.:

Contractor:

Dates Test F	Represents:	3/23/2021	through	3/29/2021		
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	800	4.89	2.62	26.1
2NS	63-115	Ray Rd	1250	7.56	2.65	40.7
		Total Wt	3070	18 60		100.0

SUPERIOR MATERIALS

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

	Total Wt	3070	18.69		100.0	< Verify this n	umber is 100%
Sieve	CA	1/	4	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	10	0.0	100.0	100.0	0.0	0.0
1.5"	97.0	10	0.0	100.0	99.0	1.0	1.0
1"	54.3	10	0.0	100.0	84.8	14.2	15.2
3/4"	14.9	98	3.3	100.0	71.3	13.5	28.7
1/2"	3.9	82	2.4	100.0	63.5	7.8	36.5
3/8"	2.9	60).3	100.0	57.4	6.1	42.6
#4	2.0	15	5.6	98.1	44.7	12.7	55.3
#8	1.7	4	.8	80.7	34.7	10.0	65.3
#16	1.6	2	.8	63.4	27.1	7.6	72.9
#30	1.5	2	.5	47.2	20.4	6.7	79.6
#50	1.5	2.	.3	22.8	10.4	10.0	89.6
#100	1.4	2	.2	4.2	2.7	7.6	97.3
LBW	1.2	2	.1	0.7	1.2	1.5	98.8

*Maximum % Retained must be above the 3/8" sieve.

*Any two adjacent sieves must equal 10% except max.,

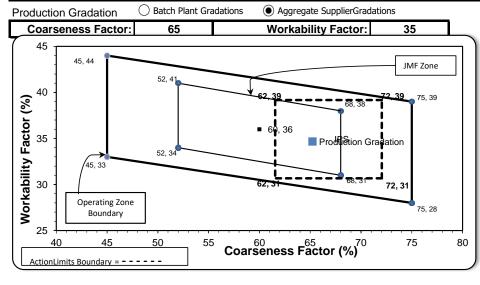
nom. max., #100 and #200 sieves.

*% 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.



Intial Production Sample (IPS)

Coarseness Factor:		67	
Workability Factor:		35	
Sieve	Cumulative	%	Cumulative
	% Passing	Retained	% 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