Production Gradation Report

PLANT #: P-101 Contractor:

Sample Date: 8/30/21 DM Concrete Grade: Dates Test Represents: 8/31/2021 9/6/2021 through

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1560	9.54	2.62	53.6
26A	71-47	Presque Isle	200	1.22	2.62	6.9
2NS	75-051	Mid-Michigan	1150	6.93	2.66	39.5
		Total Wt	2910	17.69		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

				10010		
Sieve	6AA	26A	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"	98.6	100.0	100.0	99.2	0.8	0.8
3/4"	84.2	100.0	100.0	91.5	7.7	8.5
1/2"	40.8	97.8	100.0	68.1	23.4	31.9
3/8"	18.3	89.2	100.0	55.5	12.7	44.5
#4	2.2	17.2	99.2	41.6	13.9	58.4
#8	1.1	4.1	81.0	32.9	8.7	67.1
#16	1.0	2.4	64.3	26.1	6.8	73.9
#30	0.9	2.2	48.8	19.9	6.2	80.1
#50	0.9	2.0	25.7	10.8	9.1	89.2
#100	0.9	1.9	7.0	3.4	7.4	96.6
LBW	0.8	1.7	1.1	1.0	2.4	99.0
Production Gradation	Batch Plant Gradation	ons Aggregate Supplier Gra	adations	Adjusted WF	Initial Producti	on Sample (IPS

*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 Gra	dations Aggregate Supplier Gradation	ons	Adjusted WF	Initial Product	ion Sample (IPS	3)
Coarseness Factor	: 66	Workability Factor:	33	35.4	Coars	seness Factor:	
45					Work	ability Factor:	
45, 44			JMF Zone	7	Sieve	Cumulative	
1,			JIVII ZOITE	J ∥	Sieve	% Passing	R
1 40	52, 41			- 11	2"	100.0	
3 40 1		57 , 39 67 , 39 68 , 38	75, 39	- 11	1.5"	100.0	
		00, 30	I	- 11	1"	100.0	
Factor 35		■ 60, 36s ■ Production 0		- 11	3/4"	95.0	
교 35 -		Tripduction G	Gradation	- 11	1/2"	70.5	
1 /	52, 34	-! :		- 11	3/8"	60.0	
Atomotion (Appendix Appendix A				- 11	#4	44.4	
30]		57 , 31 67 ₆ 3 ,1 ₃₁		- 11	#8	35.5	
Operating Zon	e			- 11	#16	28.5	
Boundary	·		75, 28	- 11	#30	21.5	
≥ 25					#50	10.2	
40 45	50 5	55 60 65 70	75	80	#100	3.1	
		Coarseness Factor (%)	. 0	33	LBW	1.3	
ActionLimits Boundary = -							

Work	ability Factor:	35	
Sieve	Cumulative % Passing	% Retained	Cumulative % 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

PLANT #: P-102

Production Gradation

Sample Date: 8/30/21 Concrete Grade: DM

Dates Test Represents: 8/31/2021 through 9/6/2021

Contractor:

Adjusted WF Intial Production Sample (IPS)

Coarseness Factor:

35.8

Dates Test F	Represents:	8/31/2021	through	9/6/2021		
Agg. Class	Pit#	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1550	9.23	2.69	52.5
26A	58-003	Stoneco	255	1.52	2.69	8.6
2NS	63-114	Highland	1150	6.95	2.65	38.9
		Total Wt	2955	17.71		100.0

MDOT No.:

<---- Verify this number is 100%

SUPERIOR	R

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

Farmington Hills, MI 48336

Sieve	6AA	26A	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"	99.8	100.0	100.0	99.9	0.1	0.1
3/4"	80.6	100.0	100.0	89.8	10.1	10.2
1/2"	41.6	99.6	100.0	69.3	20.5	30.7
3/8"	20.2	83.6	100.0	56.7	12.6	43.3
#4	3.2	11.4	98.6	41.0	15.7	59.0
#8	1.3	3.2	83.2	33.3	7.7	66.7
#16	0.8	2.1	67.0	26.7	6.7	73.3
#30	0.7	1.8	49.1	19.6	7.0	80.4 r
#50	0.7	1.5	21.9	9.0	10.6	91.0
#100	0.5	1.5	4.7	2.2	6.8	97.8
LBW	0.6	1.2	0.9	0.8	1.5	99.2

Aggregate Supplier Gradations

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

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

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

 $^{\star}\%$ 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.

Coarsenes	s Factor:	65	Workability Factor:	33	
45 45,	44	52, 41 56 .	40 67 40	JMF Zone 75, 39	
Workability Factor (%)	45, 33	52, 34	■ 60µ8 ⑤ ■ Production Gra	dation	
Morkabilii 30 or	perating Zone Boundary	56,	52 6 6 32 8 8 8 8 9 1	75, 28	
40 ActionLimits Bou	45 ndary =	50 55	Coarseness Factor (%)	75	80

Batch Plant Gradations

Work	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

PREPARED BY: SM, LLC Technical Service Approved By:

PLANT #: P-20 Contractor:

Sample Date: 8/30/21 DM Concrete Grade: Dates Test Represents: 8/31/2021 9/6/2021 through

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1505	9.21	2.62	51.8
26A	71-47	Presque Isle	300	1.83	2.62	10.3
2NS	63-92	Grange Hall	1100	6.65	2.65	37.9

MDOT No.:

Coarseness Factor:

SUPERIOR MATERIALS

Superior Materials, LLC 30701 W. 10 Mile Rd. 336

Suite 500
Farmington Hills, MI 483

*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.

63

*% Retained must be at least 8% for the 1" sieve when

a 2" max. size (nom. Max. 1.5") aggregate is used.

	Total Wt	2905	17.69		100.0	< Verify this n	umber is 100%
Sieve	6AA	26	i A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	10	0.0	100.0	100.0	0.0	0.0
1.5"	100.0	10	0.0	100.0	100.0	0.0	0.0
1"	97.8	10	0.0	100.0	98.9	1.1	1.1
3/4"	80.0	10	0.0	100.0	89.6	9.2	10.4
1/2"	38.5	97	7.3	100.0	67.9	21.8	32.1
3/8"	17.9	91	.0	100.0	56.5	11.3	43.5
#4	1.8	27	'.8	98.1	40.9	15.6	59.1
#8	1.6	6	.1	85.5	33.8	7.1	66.2
#16	1.5	2	6	70.6	27.8	6.1	72.2
#30	1.4	2	.2	51.9	20.6	7.2	79.4
#50	1.3	2	.0	21.6	9.1	11.5	90.9
#100	1.3	1	.9	3.6	2.2	6.8	97.8
LBW	1.2	1	.8	0.4	1.0	1.3	99.0

Adjusted WF Intial Production Sample (IPS) **Coarseness Factor: Workability Factor:** 34 36.3 66 45 JMF Zone 45, 44 Workability Factor (%) ■ 60, 36IPS ■ Production Gradation 52, 34 Operating Zone Boundary 75, 28 25 Coarseness Factor (%)⁷⁰ 45 50 55 75 80

Work	ability Factor:	36	
Sieve	Cumulative % Passing	% Retained	Cumulative % 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"	89.2	10.8	10.8
1/2"	68.4	20.8	31.6
3/8"	59.9	8.6	40.1
#4	43.0	16.9	57.0
#8	35.9	7.1	64.1
#16	29.0	6.8	71.0
#30	21.3	7.7	78.7
#50	9.9	11.4	90.1
#100	2.4	7.5	97.6
LBW	1.2	1.2	98.8

PREPARED BY: SM, LLC Technical Service

ActionLimits Boundary = - - - -

Approved By:

PLANT #:

P-32 Sample Date: 8/30/21 DM Concrete Grade: 9/6/2021 through

MDOT	Nο

38.5

Coarseness Factor:

Contractor:

Dates Test F	Represents:	8/31/2021	through	9/6/2021		
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	95-013	Smelter Bay	1150	6.95	2.65	39.6
		Total Wt	2905	17.69		100.0

- Verify this number is 100%

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	i Otai Wt	2905 17.69		100.0	< verify this n	umber is 100%
Sieve	6AA	26A	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"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	87.6	100.0	100.0	93.2	6.8	6.8
1/2"	52.9	97.2	100.0	73.9	19.3	26.1
3/8"	31.0	84.5	100.0	61.2	12.7	38.8
#4	6.1	20.1	97.1	42.9	18.3	57.1
#8	3.1	5.6	85.9	36.0	6.9	64.0
#16	2.5	2.8	69.3	29.0	7.1	71.0
#30	2.4	2.3	49.5	21.0	7.9	79.0
#50	2.2	2.1	22.5	10.2	10.8	89.8
#100	2.1	1.9	5.9	3.6	6.6	96.4
LBW	1.7	1.4	0.6	1.2	2.3	98.8
Production Gra	adation O Batch Plant Gra	dations Aggregate Supplier (Gradations	Adjusted WF	Intial Production	on Sample (IPS

*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.

62

*% Retained must be at least 8% for the 1" sieve when

a 2" max. size (nom. Max. 1.5") aggregate is used.

Coarseness Factor:	61	Workability Factor:	36	
45 45, 44 45, 44 45, 33 Operating Zone Boundary	52, 34	67, 40 ■ Production Grabatish 38 ■ 60, 38S	75, 28	
25 40 45 ActionLimits Boundary =	50 55	Coarseness Factor (%)	75	80

Work	ability Factor:	36	
Sieve	Cumulative % Passing	% Retained	Cumulative % 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"	72.3	22.8	27.7
3/8"	60.4	11.8	39.6
#4	42.6	17.8	57.4
#8	36.0	6.6	64.0
#16	29.5	6.5	70.5
#30	20.3	9.2	79.7
#50	9.5	10.8	90.5
#100	3.4	6.1	96.6
LBW	1.3	2.1	98.7

8/30/21

8/31/2021

O Batch Plant Gradations

PLANT #: P-35

Sample Date:

Dates Test Represents:

Production Gradation

DM Concrete Grade:

Contractor:

MDOT No.:

Adjusted WF Intial Production Sample (IPS)

Coarseness Factor:

35.5

Agg. Class	Pit#	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1555	9.26	2.69	52.6
26A	58-003	Stoneco	300	1.79	2.69	10.2
2NS	81-093	Burmeister	1100	6.65	2.65	37.2
		Total Wt	2955	17.70		100.0

through

	IVIL
%	
ntribution	
52.6	
10.2	
37.2	



<---- Verify this number is 100%

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					,	
Sieve	6AA	26A	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"	99.8	100.0	100.0	99.9	0.1	0.1
3/4"	80.6	100.0	100.0	89.8	10.1	10.2
1/2"	41.6	99.6	100.0	69.2	20.6	30.8
3/8"	20.2	83.6	100.0	56.3	12.9	43.7
#4	3.2	11.4	99.1	39.7	16.6	60.3
#8	1.3	3.2	86.0	33.0	6.7	67.0
#16	0.8	2.1	68.0	25.9	7.1	74.1
#30	0.7	1.8	47.1	18.1	7.9	81.9
#50	0.7	1.5	15.4	6.3	11.8	93.7
#100	0.5	1.5	2.2	1.2	5.0	98.8
I RW	0.6	1 2	0.7	0.7	0.5	00.3

Aggregate Supplier Gradations

9/6/2021

*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.

Coarseness Factor:	65	Workability Factor:	33	
45 45, 44 45, 44 45, 33 Operating Zone Boundary	52, 41 56, 52, 34	68, 38 ■ 60 ₁ β§ ■ Production G	JMF Zone 75, 39	
Boundary 25 40 45 ActionLimits Boundary =	50 55	Coarseness Factor (%)	75, 28 75	80

Work	ability Factor:	36	
Sieve	Cumulative % Passing	% Retained	Cumulative % 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"	89.1	10.2	10.9
1/2"	70.5	18.6	29.5
3/8"	60.5	10.0	39.5
#4	44.1	16.4	55.9
#8	35.6	8.5	64.4
#16	27.7	7.9	72.3
#30	20.6	7.1	79.4
#50	8.7	11.8	91.3
#100	1.6	7.1	98.4
LBW	1.1	0.6	98.9

8/31/2021

PLANT #: P-36 Sample Date: 8/30/21

Dates Test Represents:

Production Gradation

DM Concrete Grade:

Contractor:

MDOT No.:

Adjusted WF Intial Production Sample (IPS)

36.3

Coarseness Factor:

Agg. Class	Pit#	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1505	9.21	2.62	51.8
26A	71-47	Presque Isle	300	1.83	2.62	10.3
2NS	63-92	Grange Hall	1100	6.65	2.65	37.9
		Total Wt	2905	17.69		100.0

through

	IVIL
%	
ntribution	
51.8	
10.3	
37.9	



----- Verify this number is 100%

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	I Otal Wt	2903 17.09		100.0	< verily trils it	uniber is 100 %
Sieve	6AA	26A	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"	97.5	100.0	100.0	98.7	1.3	1.3
3/4"	66.4	100.0	100.0	82.6	16.1	17.4
1/2"	32.0	97.2	100.0	64.5	18.1	35.5
3/8"	17.5	84.5	100.0	55.7	8.8	44.3
#4	2.7	20.1	98.1	40.6	15.0	59.4
#8	1.6	5.6	85.5	33.8	6.8	66.2
#16	1.5	2.8	70.6	27.8	6.0	72.2
#30	1.4	2.3	51.9	20.6	7.2	79.4
#50	1.4	2.1	21.6	9.1	11.5	90.9
#100	1.3	1.9	3.6	2.2	6.9	97.8
LBW	1.0	1.4	0.4	0.8	1.4	99.2

Aggregate Supplier Gradations

9/6/2021

*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.

45 JMF Zone 40 52, 41 58, 39 68, 38 75, 39 68, 38 Production Gradation 1 52, 34 88, 34 Production Gradation	Coarsenes	s Factor: 67	Workability Factor:	34	
	Workability Factor (%)	52, 41 52, 34 52, 34	68, 38 60, 36 Product	75, 39 ion Gradation	
25 40	40		Coarseness Factor (%)	75	80

Batch Plant Gradations

Work	ability Factor:	35	
Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	99.1	0.9	0.9
3/4"	90.3	8.8	9.7
1/2"	69.2	21.1	30.8
3/8"	59.1	10.1	40.9
#4	41.8	17.3	58.2
#8	35.1	6.6	64.9
#16	28.5	6.6	71.5
#30	21.2	7.3	78.8
#50	8.7	12.5	91.3
#100	1.8	7.0	98.2
LBW	0.7	1.0	99.3

63

8/30/21

PLANT #: P-39

Sample Date:

Production Gradation

DM Concrete Grade:

Contractor:

MDOT No.:

Adjusted WF Intial Production Sample (IPS)

Coarseness Factor:

33.6

Dates Test F	Represents:	8/31/2021	through	9/6/2021		
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	200	1.22	2.62	6.9
2NS	44-051	Krake Willis Rd	1100	6.65	2.65	37.9
Total Wt			2905	17.69		100.0

 A		
	E F	OR

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

	rotai wt	2905 17.69		100.0	< Verify this n	umber is 100%
Sieve	6AA	26A	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"	98.6	100.0	100.0	99.2	0.8	0.8
3/4"	84.2	100.0	100.0	91.3	8.0	8.7
1/2"	40.8	97.8	100.0	67.1	24.1	32.9
3/8"	18.3	89.2	100.0	54.1	13.0	45.9
#4	2.2	17.2	97.6	39.4	14.8	60.6
#8	1.1	4.1	79.8	31.1	8.2	68.9
#16	1.0	2.4	62.6	24.4	6.7	75.6
#30	0.9	2.2	46.3	18.2	6.2	81.8
#50	0.9	2.0	24.0	9.7	8.5	90.3
#100	0.9	1.9	7.9	3.6	6.1	96.4
LBW	0.8	1.7	1.1	1.0	2.6	99.0
Production Gradat	tion Batch Plant Gradat	tions Aggregate Supplier Gra	adations	Adjusted WF	Intial Production	on Sample (IPS

*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.

Coarseness Factor	: 67	Workability Factor:	31	
45 45, 44	52, 41		JMF Zone	
tor (%)	32, 4	58, 40 68, 38	75, 39	
Morkability Factor (%) 35 45, 33 Operating Zor Boundary	52, 34	Production 688,32	n Gradation	
Operating Zor Boundary	e]		75, 28	
40 45 ActionLimits Boundary =	50 55	Coarseness Factor (%)	75	80

Work	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"	100.0	0.0	0.0
3/4"	89.7	10.3	10.3
1/2"	70.3	19.4	29.7
3/8"	59.1	11.2	40.9
#4	42.8	16.3	57.2
#8	35.5	7.3	64.5
#16	29.0	6.5	71.0
#30	21.2	7.7	78.8
#50	9.8	11.5	90.2
#100	3.7	6.1	96.3
LBW	1.2	2.5	98.8

63

Total Wt

Batch Plant Gradations

Production Gradation

PLANT #: P-O2 Contractor: _______
Sample Date: 8/30/21 Concrete Grade: DM

Dates Test Represents: 8/31/2021 9/6/2021 through Specific % ft³ Agg. Class Pit# Source Weight (SSD) Gravity Contribution 6AA 71-47 Presque Isle 1555 9.51 2.62 53.5 26A 71-47 Presque Isle 250 1.53 2.62 8.6 2NS 63-115 Ray Rd 1100 6.65 2.65 37.9

2905

MDOT No.:



<---- Verify this number is 100%

Adjusted WF Intial Production Sample (IPS)

Coarseness Factor:

100.0

33.6

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

Sieve	6AA	26A	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"	97.5	100.0	100.0	98.7	1.3	1.3
3/4"	66.4	100.0	100.0	82.0	16.6	18.0
1/2"	32.0	97.2	100.0	63.4	18.7	36.6
3/8"	17.5	84.5	100.0	54.5	8.9	45.5
#4	2.7	20.1	95.6	39.4	15.1	60.6
#8	1.6	5.6	78.7	31.1	8.2	68.9 r
#16	1.5	2.8	63.0	24.9	6.2	75.1
#30	1.4	2.3	47.7	19.0	5.9	81.0 r
#50	1.4	2.1	26.8	11.1	7.9	88.9
#100	1.3	1.9	6.7	3.4	7.7	96.6
LBW	1.0	1.4	0.9	1.0	2.4	99.0

Aggregate SupplierGradations

17.69

*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.

Coarseness Factor:	66	Workability Factor:	31	
45, 44 45, 44 45, 33 Operating Zone Boundary	52, 41	58, 39 68, 39 68, 38 Production Gradat	JMF Zone 75, 39	
25 40 45 ActionLimits Boundary =	50 5	⁵ Coarseness Factor (%) ⁷⁰	75, 20	80

Work	ability Factor:	35	
Sieve	Cumulative % Passing	% Retained	Cumulative % 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"	95.1	4.9	4.9
1/2"	74.6	20.5	25.4
3/8"	59.3	15.3	40.7
#4	42.1	17.2	57.9
#8	35.1	7.1	64.9
#16	29.2	5.9	70.8
#30	21.9	7.3	78.1
#50	9.6	12.4	90.4
#100	2.4	7.2	97.6
LBW	0.9	1.5	99.1

PREPARED BY: SM, LLC Technical Service Approved By: