

MIX DESIGN REVIEW CHECKLIST

CS-JN PW-7018		JMF # P1-SM McCoig Plant M-11																																					
REVIEWER Ian Duncan		APPROVED ☒	REJECTED ☐	DATE 07/06/20																																			
THE SUBMITTAL MUST INCLUDE THE FOLLOWING:			YES	NO																																			
Form 1976 – Job Mix Formula (JMF) Concrete Field Communication			☒	☐																																			
Source of Materials			☒	☐																																			
Batch Weights of Constituent Materials (Dry)			☒	☐																																			
For Optimized Gradations Only – Individual Aggregate Gradations			☐	☐																																			
Specific Gravity of Constituent Materials (Dry - Required, SSD - Optional)			☒	☐																																			
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Date of completion within the last 2 years			☒	☐																																			
Conforms with one of the methods in c.5.A of 12SP604B			☒	☐																																			
STRENGTH, COMPRESSION																																							
The Lower Specification Limit (LSL) at 28 days, or			☒	☐																																			
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If Used, Maximum Slag Cement Replacement is 40% (Minimum replacement 25% for P1M and DM)			☒	☐																																			
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If Both Are Used, They Must Not Exceed 40% of Cementitious Material			☐	☐																																			

DOCUMENTATION

Air Content	6.52	(%)
Slump	4.45	Inch
Compressive Strength	6020	Psi
Concrete Age at Time of Test	28	Days
Verification Method Use (ref. c.5.B.2 of 12SP604B)	1 ☐ 2 ☒ 3 ☐ 4 ☐	

QPL/APPROVED SOURCE CHECK

	YES	NO	N/A
Coarse Aggregate	☒	☐	☐
Intermediate Aggregate	☐	☐	☒
Fine Aggregate	☒	☐	☐
Cement	☒	☐	☐
Fly Ash	☐	☐	☒
Slag Cement	☒	☐	☐
Admixtures	☒	☐	☐
Specified Dosage Greater Than Minimum or Within Dosage Range	☒	☐	☐

CEMENTITIOUS CONTENT

Meets Requirements (ref. Table 1 of 12SP604B)	☐	☐	
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YIELD AND OPTIMIZED GRADATION CHECK

Mix Design Yields (Use Concrete Job Mix Formula Yield Calculator)	☒	☐	
If Used, Optimized Aggregate Gradation Meets Appendix 1 requirements of 12SP602D	☐	☐	☐

NOTES/COMMENTS

JMF P1-SM is approved for use in curb, sidewalk, driveways, pavement water reducing admixture used. Maximum time to discharge = 60 minutes

MIX DESIGN REVIEW CHECKLIST

CS-JN PW-7018		JMF # P1-SW McCoig Plant M-11																							
REVIEWER Ian Duncan		APPROVED ☒	REJECTED ☐	DATE 07/06/20																					
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If Used, Maximum Slag Cement Replacement is 40% (Minimum replacement 25% for P1M and DM)			☒	☐																					
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If Both Are Used, They Must Not Exceed 40% of Cementitious Material			☐	☐																					

DOCUMENTATION

Air Content	6.17	(%)
Slump	3	Inch
Compressive Strength	6080	Psi
Concrete Age at Time of Test	28	Days
Verification Method Use (ref. c.5.B.2 of 12SP604B)	1 ☐ 2 ☒ 3 ☐ 4 ☐	

QPL/APPROVED SOURCE CHECK

	YES	NO	N/A
Coarse Aggregate	☒	☐	☐
Intermediate Aggregate	☐	☐	☒
Fine Aggregate	☒	☐	☐
Cement	☒	☐	☐
Fly Ash	☐	☐	☒
Slag Cement	☒	☐	☐
Admixtures	☒	☐	☐
Specified Dosage Greater Than Minimum or Within Dosage Range	☒	☐	☐

CEMENTITIOUS CONTENT

Meets Requirements (ref. Table 1 of 12SP604B)	☐	☐	
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YIELD AND OPTIMIZED GRADATION CHECK

Mix Design Yields (Use Concrete Job Mix Formula Yield Calculator)	☒	☐	
If Used, Optimized Aggregate Gradation Meets Appendix 1 requirements of 12SP602D	☐	☐	☐

NOTES/COMMENTS

JMF P1-SW is approved for use in curb, sidewalk, driveways, pavement water reducing admixture used. Maximum time to discharge = 60 minutes

MIX DESIGN REVIEW CHECKLIST

CS-JN PW-7018		JMF # P1-SM-B2 McCoig Plant M-40		
REVIEWER Ian Duncan		APPROVED ☒	REJECTED ☐	DATE 07/06/20
THE SUBMITTAL MUST INCLUDE THE FOLLOWING:			YES	NO
Form 1976 – Job Mix Formula (JMF) Concrete Field Communication			☒	☐
Source of Materials			☒	☐
Batch Weights of Constituent Materials (Dry)			☒	☐
For Optimized Gradations Only – Individual Aggregate Gradations			☐	☐
Specific Gravity of Constituent Materials (Dry - Required, SSD - Optional)			☒	☐
Typical Ranges: Type I Portland Cement: 3.15 (approximate) Class F Fly Ash: 2.20 – 2.70 Class C Fly Ash: 2.55 – 2.80 Slag Cement: 2.85 – 2.95 Coarse Aggregate: 2.55 – 2.85 Intermediate Aggregate: 2.55 – 2.85 Fine Aggregate: 2.60 – 2.80				
Dry Loose or Dry Rodded Unit Weight of Coarse Aggregate			☒	☐
Water/Cementitious Ratio (w/cm) – 0.45 max			☒	☐
Volume (dry, rodded) of coarse aggregate per unit volume concrete – 65 – 75% (inclusive)			☒	☐
Aggregate Absorptions and Correction Factors			☒	☐
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Alkali-Silica Reactivity (ASR) testing results for fine aggregate			☒	☐
Date of completion within the last 2 years			☒	☐
Conforms with one of the methods in c.5.A of 12SP604B			☒	☐
STRENGTH, COMPRESSION				
The Lower Specification Limit (LSL) at 28 days, or			☒	☐
70% of the Lower Specification Limit (LSL) at 7 days (Method 1 verification only)			☐	☐
SUPPLEMENTAL CEMENTITIOUS MATERIALS (SCM)				
If Used, Maximum Slag Cement Replacement is 40% (Minimum replacement 25% for P1M and DM)			☒	☐
If Used, Maximum Fly Ash Replacement is 40% (Minimum replacement 25% for P1M and DM)			☐	☐
If Both Are Used, They Must Not Exceed 40% of Cementitious Material			☐	☐

DOCUMENTATION

Air Content	6.52	(%)
Slump	4.63	Inch
Compressive Strength	5510	Psi
Concrete Age at Time of Test	28	Days
Verification Method Use (ref. c.5.B.2 of 12SP604B)	1 ☐ 2 ☒ 3 ☐ 4 ☐	

QPL/APPROVED SOURCE CHECK

	YES	NO	N/A
Coarse Aggregate	☒	☐	☐
Intermediate Aggregate	☐	☐	☒
Fine Aggregate	☒	☐	☐
Cement	☒	☐	☐
Fly Ash	☐	☐	☒
Slag Cement	☒	☐	☐
Admixtures	☒	☐	☐
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CEMENTITIOUS CONTENT

Meets Requirements (ref. Table 1 of 12SP604B)	☐	☐	
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If Both Are Used, They Must Not Exceed 40% of Cementitious Material			☐	☐																																			

DOCUMENTATION

Air Content	6.44	(%)
Slump	3.15	Inch
Compressive Strength	5840	Psi
Concrete Age at Time of Test	28	Days
Verification Method Use (ref. c.5.B.2 of 12SP604B)	1 ☐ 2 ☒ 3 ☐ 4 ☐	

QPL/APPROVED SOURCE CHECK

	YES	NO	N/A
Coarse Aggregate	☒	☐	☐
Intermediate Aggregate	☐	☐	☒
Fine Aggregate	☒	☐	☐
Cement	☒	☐	☐
Fly Ash	☐	☐	☒
Slag Cement	☒	☐	☐
Admixtures	☒	☐	☐
Specified Dosage Greater Than Minimum or Within Dosage Range	☒	☐	☐

CEMENTITIOUS CONTENT

Meets Requirements (ref. Table 1 of 12SP604B)	☐	☐	
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YIELD AND OPTIMIZED GRADATION CHECK

Mix Design Yields (Use Concrete Job Mix Formula Yield Calculator)	☒	☐	
If Used, Optimized Aggregate Gradation Meets Appendix 1 requirements of 12SP602D	☐	☐	☐

NOTES/COMMENTS

JMF P1-SW-B2 is approved for use in curb, sidewalk, driveways, pavement water reducing admixture used. Maximum time to discharge = 60 minutes



McCoig Materials

PO Box 6349,
Plymouth, MI 48170

July 6th, 2020

Westside Concrete
P.O. Box 183368
Shelby Twp., MI 48318
Attn: Mr. Kamil Jumaa

Re: PW-7018 City of Detroit Major Roads

We submit herewith the following concrete mixture(s) for the above referenced project:

Mix Code	Description
P1-SW	3500 PSI AE MDOT Grade P1 - 3" Slump - 7 MILE PLANT
P1-SM	3500 PSI AE MDOT Grade P1 + MR - 6" Slump - 7 MILE PLANT
P1-SW-B2	3500 PSI AE MDOT Grade P1 - 3" Slump - SPRINGWELLS PLANT
P1-SM-B2	3500 PSI AE MDOT Grade P1 + MR - 6" Slump - SPRINGWELLS PLANT

The above has been designed in accordance with MDOT 2012 Standard Specifications for Construction and/or the project specifications and in reference to ACI 318-08, Chapter 5 - (Concrete Quality), and ACI standard deviation/overdesign requirements. These materials will meet the noted criterion when handled, placed, cured and tested in accordance with current ASTM and ACI standards and recommended practices. Please refer to the attached concrete mix document(s) for further detail.

In accordance with ACI 301-05, ASTM C94-05, we hereby request to receive concrete test results that pertain to this project from the testing laboratory of record for the purposes of quality assurance, the information can be forwarded to QC@mccoig.biz.

Forward this submittal in it's entirety to the proper individuals for approval and field reference. A written response on the status of this submittal is required and appreciated. If no response is received and a concrete order is placed for the above referenced project than that order shall be considered the approval of this submittal.

Please do not hesitate to contact the CSR if you have any questions or concerns regarding the submitted mixtures, or if we may be of additional service.

Respectfully submitted,

Jesse Schram
QC Technician
McCoig Materials, LLC

cc:

This form applies only to the project listed below and is not transferable to other projects
DISTRIBUTION: ORIGINAL – Project Engineer **COPIES** – Contractor, Lansing CFS, Region, Inspector

CONTROL SECTION	JOB NUMBER	PROJECT LOCATION PW-7018 City of Detroit Major Roads	PROJECT ENGINEER City of Detroit	
CONCRETE SUPPLIER McCoig Materials		PLANT LOCATION Detroit, MI		PLANT NUMBER M-11
GRADE OF CONCRETE P1	PSI REQUIREMENT 3500	MIX DESIGN NUMBER P1-SW	INTENDED USE (S) Pavement & Curb	CONTRACTOR QC PLAN Y ☐ SUBMITTED? (MDOT use only) N ☐
PRIME / SUBCONTRACTOR(S) Westside Concrete / All Subcontractors				
STANDARD SPEC DATE 01/01/12		QC/QA SPECIAL PROVISION DATE 06/14/18	JMF EFFECTIVE DATE 07/06/20	AGG. CORRECTION 0.2%

MATERIAL DESIGN SOURCES AND PROPERTIES

COARSE AGGREGATE		INTERMEDIATE AGGREGATE		FINE AGGREGATE	
Aggregate Type	Limestone	Aggregate Type		Source Name	Spring Mill
Source Name	Carmeuse -Port In	Source Name		MDOT Source No.	47-003
MDOT Source No.	75-005	MDOT Source No.		MDOT Series Class	2NS
MDOT Series Class	6AA	MDOT Series Class		Specific Gravity (Bulk Dry)*	2.61
Specific Gravity (Bulk Dry)*	2.67	Specific Gravity (Bulk Dry)*		Specific Gravity (Bulk SSD) optional	2.64
Specific Gravity (Bulk SSD) optional	2.68	Specific Gravity (Bulk SSD) optional		Absorption	1.1%
Absorption	0.53%	Absorption		Fineness Modulus (FM)	2.82
Unit Weight (Dry Rodded) DR or	97.0	Unit Weight (Dry Rodded) DR or			
Unit Weight (Dry Loose) DL	91.0	Unit Weight (Dry Loose) DL			
Percent Crushed	100%	Percent Crushed			
MDOT Freeze-Thaw (F-T) Dilation	0.008	MDOT Freeze-Thaw (F-T) Dilation			
Specific Gravity (Bulk Dry) of F-T	2.67	Specific Gravity (Bulk Dry) of F-T			
Sample*		Sample*			
Date of MDOT Freeze-Thaw Report	08/22/18	Date of MDOT Freeze-Thaw Report			

* If the bulk dry specific gravity is more than 0.04 less than the bulk dry specific gravity of the most recently tested freeze-thaw sample, the aggregate will be considered to have changed characteristics and be required to have a new freeze-thaw test conducted prior to the use on Department projects.

CEMENTITIOUS		ADMIXTURES	
Cement Source / Plant	Lafarge - Alpena, MI	Air Entrainment	BASF-Master Air AE 200-0AE-BA
Cement Type	I/II Low Alkali	Water Reducer	Premiere - OptiFlo 50 - 0WRA-PR
Cement Specific Gravity	3.15	Water Reducer	-
Fly Ash Source (distributer & plant)	-	Water Reducer	-
Fly Ash Class	-	Accelerator	-
Fly Ash Specific Gravity	-	Other	-
Slag Cement Source	Lafarge - South Chicago, IL	(Indicate Source & Product name with ticket code)	
Slag Cement Grade	100		
Slag Cement Specific Gravity	2.90	TYPE OF MIX WINTER/SUMMER	All Year
Other	-		

MIX PROPORTIONS

Volume of Coarse Aggregate (DR)	68%	Design Slump	3"
Coarse Aggregate Weight (Dry)	1769 (SSD 1780)	Specified Slump	0 - 3"
Intermediate Aggregate Weight (Dry)	-	Design Air %	6.5%
Fine Aggregate Weight (Dry)	1335 (SSD 1350)	Specified Air %	5.5% - 8.5%
Portland Cement Weight	342	PSI minimum required	3500
Fly Ash Weight	-	Total Cementitious	526
Fly Ash Percent of Cementitious	-	Yield cu/ft	27.0 +/- 0.3
Slag Cement Weight	184		
Slag Cement Percent of Cementitious	35%		
Total Water Weight	263		
Net Water Weight	237		
WC (as designed)	.45		
Air Entrainment (dosage)	1.0 oz/cwt		
Water Reducer (dosage)	3 - 5 oz/cwt		
Other (dosage)	-		

I certify that all applicable standard test methods have been followed verifying the mix design and JMF:

Jesse Schram
Digitally signed by Jesse Schram
DN: cn=Jesse Schram, o=McCoig Materials LLC,
ou=QC Technician, email=jschram@mccoig.biz, c=US
Date: 2018.04.18 11:21:31 -04'00'

MCA Level II Expiration Date: 04/15/22

Date: 07/06/20

STRENGTH PERFORMANCE REPORT

McCoig Laboratory
12100 Wayne road
Romulus, Michigan 48174
Tel: 734-893-1215

Mix : P1-SW - MDOT P1 S35 WRA
Period : 09 May 2019 **To** 21 Nov 2019

Number of Tests	6	Specified Strength	3500	28 Day	Compressive Test
Average Strength	6080	Corrected CofV	0	ACI Running Average of 3 Criteria	Yes
Required Strength	4700	Standard Deviation	0	ACI Standard Deviation Criteria	Yes

	Air Content %	Slump in	Concrete Temp deg F	Density Test lb/ft3	Strength28 Day psi
Count	6	6	6	6	6
Average	6.17	3.00	68	144.6	6080
STDEV	0.51	0.55	8	1.3	630
COV%	8.2	18.3	11.8	0.9	10.3
Range Min	5.50	2.50	57	143.2	5380
Range Max	6.90	4.00	78	146.4	6790

Date	Sample	Air Content %	Slump in	Concrete Temp deg F	Air Temp deg F	Density Test lb/ft3	Strength28 Day psi
11/21/2019	15119123	5.50	3.00	67	36	143.5	6750
11/4/2019	2194923	6.30	3.00	57	45	146.4	6790
9/17/2019	2191706	6.90	3.00	78	65	143.9	5650
9/4/2019	19000796	6.00	2.50	72	70	144.7	5560
6/24/2019	15115029	6.50	4.00	72	71	143.2	5380
5/9/2019	1202839	5.80	2.50	60	59	145.6	6350

**MDOT Verification Method 2:
28 day breaks are an average of
2 or more cylinders**

This form applies only to the project listed below and is not transferable to other projects
DISTRIBUTION: ORIGINAL – Project Engineer **COPIES** – Contractor, Lansing CFS, Region, Inspector

CONTROL SECTION	JOB NUMBER	PROJECT LOCATION PW-7018 City of Detroit Major Roads	PROJECT ENGINEER City of Detroit	
CONCRETE SUPPLIER McCoig Materials		PLANT LOCATION Detroit, MI		PLANT NUMBER M-11
GRADE OF CONCRETE P1	PSI REQUIREMENT 3500	MIX DESIGN NUMBER P1-SM	INTENDED USE (S) Pavement / Sidewalks	CONTRACTOR QC PLAN Y ☐ SUBMITTED? (MDOT use only) N ☐
PRIME / SUBCONTRACTOR(S) Westside Concrete / All Subcontractors				
STANDARD SPEC DATE 01/01/12		QC/QA SPECIAL PROVISION DATE 06/14/18	JMF EFFECTIVE DATE 07/06/20	AGG. CORRECTION 0.2%

MATERIAL DESIGN SOURCES AND PROPERTIES

COARSE AGGREGATE		INTERMEDIATE AGGREGATE		FINE AGGREGATE	
Aggregate Type	Limestone	Aggregate Type	-	Source Name	Spring Mill
Source Name	Carmeuse -Port In	Source Name	-	MDOT Source No.	47-003
MDOT Source No.	75-005	MDOT Source No.	-	MDOT Series Class	2NS
MDOT Series Class	6AA	MDOT Series Class	-	Specific Gravity (Bulk Dry)*	2.61
Specific Gravity (Bulk Dry)*	2.67	Specific Gravity (Bulk Dry)*	-	Specific Gravity (Bulk SSD) optional	2.64
Specific Gravity (Bulk SSD) optional	2.68	Specific Gravity (Bulk SSD) optional	-	Absorption	1.1%
Absorption	0.53%	Absorption	-	Fineness Modulus (FM)	2.82
Unit Weight (Dry Rodded) DR or	97	Unit Weight (Dry Rodded) DR or	-		
Unit Weight (Dry Loose) DL	91.0	Unit Weight (Dry Loose) DL	-		
Percent Crushed	100%	Percent Crushed	-		
MDOT Freeze-Thaw (F-T) Dilation	0.008	MDOT Freeze-Thaw (F-T) Dilation	-		
Specific Gravity (Bulk Dry) of F-T	2.67	Specific Gravity (Bulk Dry) of F-T	-		
Sample*		Sample*			
Date of MDOT Freeze-Thaw Report	08/22/18	Date of MDOT Freeze-Thaw Report			

* If the bulk dry specific gravity is more than 0.04 less than the bulk dry specific gravity of the most recently tested freeze-thaw sample, the aggregate will be considered to have changed characteristics and be required to have a new freeze-thaw test conducted prior to the use on Department projects.

CEMENTITIOUS		ADMIXTURES	
Cement Source / Plant	Lafarge - Alpena, MI	Air Entrainment	BASF-Master Air AE 200-0AE-BA
Cement Type	I/II Low Alkali	Water Reducer	Premiere - OptiFlo MR-0MRLI-PR
Cement Specific Gravity	3.15	Water Reducer	-
Fly Ash Source (distributer & plant)	-	Water Reducer	-
Fly Ash Class	-	Accelerator	-
Fly Ash Specific Gravity	-	Other	-
Slag Cement Source	Lafarge - South Chicago, IL	(Indicate Source & Product name with ticket code)	
Slag Cement Grade	100		
Slag Cement Specific Gravity	2.90	TYPE OF MIX WINTER/SUMMER	All Year
Other	-		

MIX PROPORTIONS

Volume of Coarse Aggregate (DR)	68%	Design Slump	5"
Coarse Aggregate Weight (Dry)	1769 (SSD 1780)	Specified Slump	0 - 6"
Intermediate Aggregate Weight (Dry)	-	Design Air %	6.5%
Fine Aggregate Weight (Dry)	1335 (SSD 1350)	Specified Air %	5.5% - 8.5%
Portland Cement Weight	342	PSI minimum required	3500
Fly Ash Weight	-	Total Cementitious	526
Fly Ash Percent of Cementitious	-	Yield cu/ft	27.0 +/- 0.3
Slag Cement Weight	184		
Slag Cement Percent of Cementitious	35%		
Total Water Weight	263		
Net Water Weight	237		
WC (as designed)	0.45		
Air Entrainment (dosage)	1.0 oz/cwt		
Water Reducer (dosage)	5 - 12 oz/cwt		
Other (dosage)	-		

I certify that all applicable standard test methods have been followed verifying the mix design and JMF:

 Digitally signed by Jesse Schram
DN: cn=Jesse Schram, o=McCoig Materials LLC,
ou=QC Technician, email=jschram@mccoig.biz, c=US
Date: 2018.04.18 11:21:31 -04'00'

MCA Level II Expiration Date: 04/15/22

Date: 07/06/20

STRENGTH PERFORMANCE REPORT

McCoig Laboratory
12100 Wayne road
Romulus, Michigan 48174
Tel: 734-893-1215

Mix : P1-SM - MDOT P1 S35 MR
Period : 22 Aug 2019 **To** 20 May 2020

Number of Tests	5	Specified Strength	3500	28 Day	Compressive Test
Average Strength	6020	Corrected CofV	0	ACI Running Average of 3 Criteria	Yes
Required Strength	4700	Standard Deviation	0	ACI Standard Deviation Criteria	Yes

	Air Content %	Slump in	Concrete Temp deg F	Density Test lb/ft3	Strength28 Day psi
Count	5	5	5	5	5
Average	6.52	4.45	72	143.9	6020
STDEV	0.52	0.76	9	0.9	500
COV%	8.0	17.0	12.4	0.6	8.3
Range Min	6.00	3.75	60	143.0	5320
Range Max	7.20	5.50	80	145.4	6600

Date	Sample	Air Content %	Slump in	Concrete Temp deg F	Air Temp deg F	Density Test lb/ft3	Strength28 Day psi
5/20/2020	477	7.20	4.00	60	54	143.0	5320
10/10/2019	15118091	6.60	3.75	65	53	143.7	5780
9/18/2019	6105417	6.00	5.00	75	57	143.5	6370
8/28/2019	19000790	6.80	5.50	79	77	145.4	6020
8/22/2019	2190323	6.00	4.00	80	66	144.0	6600

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DISTRIBUTION: ORIGINAL – Project Engineer **COPIES** – Contractor, Lansing CFS, Region, Inspector

CONTROL SECTION	JOB NUMBER	PROJECT LOCATION PW-7018 City of Detroit Major Roads	PROJECT ENGINEER City of Detroit	
CONCRETE SUPPLIER McCoig Materials		PLANT LOCATION Detroit, MI	PLANT NUMBER M-40	
GRADE OF CONCRETE P1	PSI REQUIREMENT 3500	MIX DESIGN NUMBER P1-SW-B2	INTENDED USE (S) Pavement & Curb	CONTRACTOR QC PLAN Y ☐ SUBMITTED? (MDOT use only) N ☐
PRIME / SUBCONTRACTOR(S) Westside Concrete / All Subcontractors				
STANDARD SPEC DATE 01/01/12		QC/QA SPECIAL PROVISION DATE 06/14/18	JMF EFFECTIVE DATE 07/06/20	AGG. CORRECTION 0.2%

MATERIAL DESIGN SOURCES AND PROPERTIES

COARSE AGGREGATE		INTERMEDIATE AGGREGATE		FINE AGGREGATE	
Aggregate Type	Limestone	Aggregate Type	-	Source Name	StoneCo - Burmeiste
Source Name	Carmeuse -Port In	Source Name	-	MDOT Source No.	81-093
MDOT Source No.	75-005	MDOT Source No.	-	MDOT Series Class	2NS
MDOT Series Class	6AA	MDOT Series Class	-	Specific Gravity (Bulk Dry)*	2.62
Specific Gravity (Bulk Dry)*	2.67	Specific Gravity (Bulk Dry)*	-	Specific Gravity (Bulk SSD) optional	2.65
Specific Gravity (Bulk SSD) optional	2.68	Specific Gravity (Bulk SSD) optional	-	Absorption	1.00%
Absorption	0.53%	Absorption	-	Fineness Modulus (FM)	2.83
Unit Weight (Dry Rodded) DR or	97.0	Unit Weight (Dry Rodded) DR or	-		
Unit Weight (Dry Loose) DL	91.0	Unit Weight (Dry Loose) DL	-		
Percent Crushed	100%	Percent Crushed	-		
MDOT Freeze-Thaw (F-T) Dilation	0.008	MDOT Freeze-Thaw (F-T) Dilation	-		
Specific Gravity (Bulk Dry) of F-T	2.67	Specific Gravity (Bulk Dry) of F-T	-		
Sample*		Sample*			
Date of MDOT Freeze-Thaw Report	08/22/18	Date of MDOT Freeze-Thaw Report			

* If the bulk dry specific gravity is more than 0.04 less than the bulk dry specific gravity of the most recently tested freeze-thaw sample, the aggregate will be considered to have changed characteristics and be required to have a new freeze-thaw test conducted prior to the use on Department projects.

CEMENTITIOUS		ADMIXTURES	
Cement Source / Plant	CRH - Mississauga, ON	Air Entrainment	BASF-Master Air AE 200-0AE-BA
Cement Type	I	Water Reducer	Premiere - OptiFlo 50 - 0WRA-PR
Cement Specific Gravity	3.15	Water Reducer	-
Fly Ash Source (distributer & plant)	-	Water Reducer	-
Fly Ash Class	-	Accelerator	-
Fly Ash Specific Gravity	-	Other	-
Slag Cement Source	Lafarge - South Chicago, IL	(Indicate Source & Product name with ticket code)	
Slag Cement Grade	100		
Slag Cement Specific Gravity	2.90	TYPE OF MIX WINTER/SUMMER	All Year
Other	-		

MIX PROPORTIONS

Volume of Coarse Aggregate (DR)	68%	Design Slump	3"
Coarse Aggregate Weight (Dry)	1769 (SSD 1780)	Specified Slump	0 - 3"
Intermediate Aggregate Weight (Dry)	-	Design Air %	6.5%
Fine Aggregate Weight (Dry)	1337 (SSD 1350)	Specified Air %	5.5% - 8.5%
Portland Cement Weight	342	PSI minimum required	3500
Fly Ash Weight	-	Total Cementitious	526
Fly Ash Percent of Cementitious	-	Yield cu/ft	27.0 +/- 0.3
Slag Cement Weight	184		
Slag Cement Percent of Cementitious	35%		
Total Water Weight	261		
Net Water Weight	237		
WC (as designed)	0.45		
Air Entrainment (dosage)	1.0 oz/cwt		
Water Reducer (dosage)	3-5 oz/cwt		
Other (dosage)	-		

I certify that all applicable standard test methods have been followed verifying the mix design and JMF:

Jesse Schram
Digitally signed by Jesse Schram
DN: cn=Jesse Schram, o=McCoig Materials LLC,
ou=QC Technician, email=jschram@mccoig.biz, c=US
Date: 2018.04.18 11:21:31 -04'00'

MCA Level II Expiration Date: 04/15/22

Date: 07/06/20

STRENGTH PERFORMANCE REPORT

McCoig Laboratory
12100 Wayne road 48174
Romulus, Michigan
Tel: 734-893-1215

Mix : P1-SW-B2 - MDOT P1 S35 WR
Period : 24 Apr 2019 **To** 27 Jun 2019

Number of Tests	5	Specified Strength	3500	28 Day	Compressive Test
Average Strength	5840	Corrected CofV	0	ACI Running Average of 3 Criteria	Yes
Required Strength	4700	Standard Deviation	0	ACI Standard Deviation Criteria	Yes

	Air Content %	Slump in	Concrete Temp deg F	Density Test lb/ft3	Strength28 Day psi
Count	5	5	5	5	5
Average	6.44	3.15	65	143.7	5840
STDEV	1.04	0.70	8	1.8	890
COV%	16.1	22.2	12.0	1.3	15.2
Range Min	5.50	2.50	55	140.9	5040
Range Max	7.80	4.00	76	145.6	7220

Date	Sample	Air Content %	Slump in	Concrete Temp deg F	Air Temp deg F	Density Test lb/ft3	Strength28 Day psi
6/27/2019	14125295	5.80	2.50	76	71	144.6	5790
5/20/2019	6100719	5.50	2.50	64	55	145.6	7220
5/16/2019	1203267	7.30	3.75	55	52	142.7	5040
5/10/2019	3049008	7.80	4.00	61	54	140.9	5100
4/24/2019	60997366	5.80	3.00	67	39	144.6	6050

**MDOT Verification Method 2:
28 day breaks are an average of
2 or more cylinders**

This form applies only to the project listed below and is not transferable to other projects
DISTRIBUTION: ORIGINAL – Project Engineer **COPIES** – Contractor, Lansing CFS, Region, Inspector

CONTROL SECTION	JOB NUMBER	PROJECT LOCATION PW-7018 City of Detroit Major Roads	PROJECT ENGINEER City of Detroit	
CONCRETE SUPPLIER McCoig Materials		PLANT LOCATION Detroit, MI	PLANT NUMBER M-40	
GRADE OF CONCRETE P1	PSI REQUIREMENT 3500	MIX DESIGN NUMBER P1-SM-B2	INTENDED USE (S) Pavement & Sidewalks	CONTRACTOR QC PLAN Y ☐ SUBMITTED? (MDOT use only) N ☐
PRIME / SUBCONTRACTOR(S) Westside Concrete / All Subcontractors				
STANDARD SPEC DATE 01/01/12		QC/QA SPECIAL PROVISION DATE 06/14/18	JMF EFFECTIVE DATE 07/06/20	AGG. CORRECTION 0.2%

MATERIAL DESIGN SOURCES AND PROPERTIES

COARSE AGGREGATE		INTERMEDIATE AGGREGATE		FINE AGGREGATE	
Aggregate Type	Limestone	Aggregate Type	-	Source Name	StoneCo - Burmeiste
Source Name	Carmeuse -Port In	Source Name	-	MDOT Source No.	81-093
MDOT Source No.	75-005	MDOT Source No.	-	MDOT Series Class	2NS
MDOT Series Class	6AA	MDOT Series Class	-	Specific Gravity (Bulk Dry)*	2.62
Specific Gravity (Bulk Dry)*	2.67	Specific Gravity (Bulk Dry)*	-	Specific Gravity (Bulk SSD) optional	2.65
Specific Gravity (Bulk SSD) optional	2.68	Specific Gravity (Bulk SSD) optional	-	Absorption	1.00%
Absorption	0.53%	Absorption	-	Fineness Modulus (FM)	2.83
Unit Weight (Dry Rodded) DR or	97.0	Unit Weight (Dry Rodded) DR or	-		
Unit Weight (Dry Loose) DL	91.0	Unit Weight (Dry Loose) DL	-		
Percent Crushed	100%	Percent Crushed	-		
MDOT Freeze-Thaw (F-T) Dilation	0.008	MDOT Freeze-Thaw (F-T) Dilation	-		
Specific Gravity (Bulk Dry) of F-T	2.67	Specific Gravity (Bulk Dry) of F-T	-		
Sample*		Sample*			
Date of MDOT Freeze-Thaw Report	08/22/18	Date of MDOT Freeze-Thaw Report			

* If the bulk dry specific gravity is more than 0.04 less than the bulk dry specific gravity of the most recently tested freeze-thaw sample, the aggregate will be considered to have changed characteristics and be required to have a new freeze-thaw test conducted prior to the use on Department projects.

CEMENTITIOUS		ADMIXTURES	
Cement Source / Plant	CRH - Mississauga, ON	Air Entrainment	BASF-Master Air AE 200-0AE-BA
Cement Type	I	Water Reducer	Premiere - OptiFlo MR-0MRLI-PR
Cement Specific Gravity	3.15	Water Reducer	-
Fly Ash Source (distributer & plant)	-	Water Reducer	-
Fly Ash Class	-	Accelerator	-
Fly Ash Specific Gravity	-	Other	-
Slag Cement Source	Lafarge - South Chicago, IL	(Indicate Source & Product name with ticket code)	
Slag Cement Grade	100		
Slag Cement Specific Gravity	2.90	TYPE OF MIX WINTER/SUMMER	All Year
Other	-		

MIX PROPORTIONS

Volume of Coarse Aggregate (DR)	68%	Design Slump	5"
Coarse Aggregate Weight (Dry)	1769 (SSD 1780)	Specified Slump	0 - 6"
Intermediate Aggregate Weight (Dry)	-	Design Air %	6.5%
Fine Aggregate Weight (Dry)	1337 (SSD 1350)	Specified Air %	5.5% - 8.5%
Portland Cement Weight	342	PSI minimum required	3500
Fly Ash Weight	-	Total Cementitious	526
Fly Ash Percent of Cementitious	-	Yield cu/ft	27.0 +/- 0.3
Slag Cement Weight	184		
Slag Cement Percent of Cementitious	35%		
Total Water Weight	261		
Net Water Weight	237		
WC (as designed)	0.45		
Air Entrainment (dosage)	1.0 oz/cwt		
Water Reducer (dosage)	5-12 oz/cwt		
Other (dosage)	-		

I certify that all applicable standard test methods have been followed verifying the mix design and JMF:

Jesse Schram
Digitally signed by Jesse Schram
DN: cn=Jesse Schram, o=McCoig Materials LLC,
ou=QC Technician, email=jschram@mccoig.biz, c=US
Date: 2018.04.18 11:21:31 -04'00'

MCA Level II Expiration Date: 04/15/22

Date: 07/06/20

STRENGTH PERFORMANCE REPORT

McCoig Laboratory
12100 Wayne road 48174
Romulus, Michigan
Tel: 734-893-1215

Mix : P1-SM-B2 - MDOT P1 S35 MR
Period : 10 Jul 2019 **To** 15 Nov 2019

Number of Tests	6	Specified Strength	3500	28 Day	Compressive Test
Average Strength	5510	Corrected CofV	0	ACI Running Average of 3 Criteria	Yes
Required Strength	4700	Standard Deviation	0	ACI Standard Deviation Criteria	Yes

	Air Content %	Slump in	Concrete Temp deg F	Density Test lb/ft3	Strength28 Day psi
Count	6	6	6	6	6
Average	6.52	4.63	69	143.8	5510
STDEV	0.91	0.59	10	1.5	490
COV%	14.0	12.7	14.8	1.0	8.9
Range Min	5.60	4.00	56	141.3	4770
Range Max	8.00	5.50	81	145.6	6190

Date	Sample	Air Content %	Slump in	Concrete Temp deg F	Air Temp deg F	Density Test lb/ft3	Strength28 Day psi
11/15/2019	1216518	5.80	4.50	70	33	145.6	5860
10/23/2019	14130948	6.60	4.00	56	44	143.5	5480
10/15/2019	15118208	8.00	5.50	59	37	141.3	4770
10/8/2019	305339	7.10	4.75	67	58	144.9	5240
8/20/2019	1209906	5.60	5.00	81	76	143.2	5500
7/10/2019	6102536	6.00	4.00	79	75	144.0	6190

MDOT Verification Method 2:
28 day breaks are an average of 2
or more cylinders



McCoig Materials

PO Box 6349,
Plymouth, MI 48170

Re: ALL MDOT PROJECTS

Admixture General Certification

<u>Spec.# and Material Name</u>	<u>Manufacturer</u>	<u>Product Name</u>	<u>McCoig Ticket Code</u>
903.01 - Air Entraining Admix	BASF	MasterAir AE 200	0AE-BA
903.02 - Water Reducing Admix	Premiere	OptiFlo 50	0WRA-PR
903.02 - Water Reducing Admix	Premiere	OptiFlo MR	0MRLI-PR
903.04 - Concrete Accelerators	Premiere	NitroCast K	0NCAC-PR
903.02 - Water Reducing Retarding	Premiere	ProLong L	0STAB-PR

We certify that the above QPL materials indicated were provided and incorporated into the identified project.

Respectfully submitted,

Douglas Rousseau

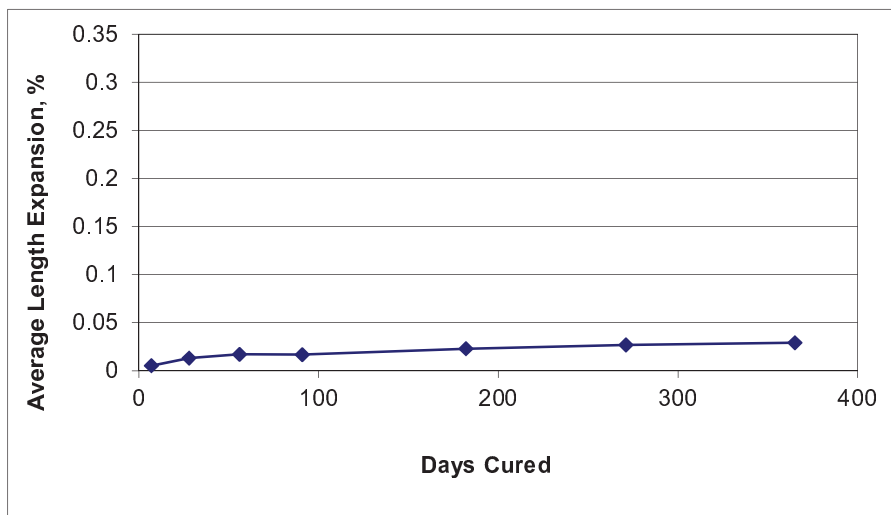
Doug Rousseau
QC / Testing Manager
McCoig Materials, LLC

cc:

**SME**

Potential Alkali Reactivity of Aggregates ASTM C 1293

Project: <u>Spring Mill Reclamation LLC Lab Testing</u>	Date: <u>06/28/19</u>
Project No.: <u>79383</u>	Prepared By: <u>Ryan Wilk</u>
Client: <u>Spring Mill Reclamation LLC</u>	
	Location: <u>EEH</u>
Date Molded: <u>06/28/18</u>	Fine Aggregate: <u>Spring Mill 2NS #47-003</u>
Portland Cement: <u>St. Mary's Type I</u>	Coarse Aggregate: <u>58-011</u>



Date	Days Cured	Specimen			Average Expansion, %
		1	2	3	
07/05/18	7	0.004	0.005	0.007	0.0053
07/26/18	28	0.012	0.014	0.014	0.0133
08/23/18	56	0.016	0.018	0.018	0.0173
09/27/18	91	0.014	0.018	0.019	0.0168
12/27/18	182	0.020	0.023	0.026	0.0229
03/26/19	271	0.025	0.027	0.029	0.0271
06/28/19	365	0.028	0.028	0.032	0.0293

Notes: Aggregates that exceed 0.04% expansion at one year using this test criteria could be considered potentially reactive.

Remarks: I hereby certify that the above aggregate meets specification requirements for ASTM C1293.

Nick Atkins
Oct 2 2019 9:01 PM

DocuSign

Tested by: Ryan Wilk

Reviewed by: Nick Atkins

National Ready Mixed Concrete Association



Certificate of Conformance For Concrete Production Facilities

THIS IS TO CERTIFY THAT

Koenig Concrete Plant 1, Detroit, MI

McCoig Materials, LLC

MDOT Plant # M-11

has been inspected by the undersigned licensed professional engineer for conformance with the requirements of the *Check List for Ready Mixed Concrete Production Facilities*. As of the inspection date, the facilities met the requirements for production by

***Central Mixing with Automatic Batching and Recordings of
Cementitious Materials, Aggregate, Water, and Chemical Admixtures***



(Seal)

A handwritten signature in blue ink, likely of the professional engineer, written over a horizontal line.

Signature of Licensed Professional Engineer

March 17, 2020

Inspection Date

May 28, 2022

Certification Expiration Date

This company will maintain these facilities in compliance with the *Check List* requirements and will correct promptly any deficiencies which develop.

A handwritten signature in blue ink, likely of a company official, written over a horizontal line.

Signature of Company Official

MANAGER

Title of Company Official

NOTICE: The Check List indicates only that plant facilities are satisfactory for the production of concrete when properly operated. Conformance of the concrete itself with specification requirements must be verified by usual inspection methods in accordance with sales agreements.

This certificate is issued by the National Ready Mixed Concrete Association on verification that the production facility conforms to the requirements of the NRMCA Certification of Ready Mixed Concrete Production Facilities, QC3. Unauthorized reproduction or misuse of this certificate may result in legal action.

Plant ID #: 800714

Certification ID #: 25743

© 1965, 1992, 2001, 2002, 2006, 2007, 2012

National Ready Mixed Concrete Association 66 Canal Center Plaza, Suite 250 • Alexandria • Virginia 22314



PJLA
Calibration
Accreditation # 59303

METRO SCALE COMPANY, INC.
17670 ALLEN ROAD, MELVINDALE, MI 48122
PHONE: (313) 382-6190 FAX: (313) 382-6194

70531

SCALE CALIBRATION REPORT

TECHNICIAN: <i>Alvin L. Miller / Randy Ogden</i>		DATE: <i>3-3-20</i> Next Due:	
SCALE MFG: ALKON		CUSTOMER: KOENIG FUEL & SUPPLY CO.(SHIP	
MODEL NO: Spectrum		ADDRESS: 500 E. SEVEN MILE	
SERIAL NO: N/A2			
LOCATION: Agg Scale Plt. 1		DETROIT, MI 48203	
CAPACITY/RESOLUTION: 36,000 X 40 LB / 20 LB			
CONDITION PRIOR TO CALIBRATION: ☒ ACCEPTABLE ☐ NEEDS REPAIR - UNABLE TO CAL.			
UNITS OF MEASURE: ☐ POUNDS ☐ KG ☐ GRAMS ☐ OTHER:			
CALIBRATED TO HANDBOOK 44 TOLERANCE: ☐ YES ☐ NO ☐ LEGAL FOR TRADE			
APPLIED WEIGHT	TEST READING		SERIAL NUMBERS OF WEIGHTS USED:
	BEFORE	AFTER	
0 LB	0 LB	0 LB	0N76, 0N77, 0N78, 0N79, 0N7A, 22222 @ 1000 LB
2000 LB	2000 LB	2000 LB	
4000 LB	4000 LB	4000 LB	
6000 LB	6000 LB	6000 LB	
12,000 LB	12,320 LB	12,320 LB	
18,000 LB	18,120 LB	18,120 LB	
24,000 LB	23,980 LB	23,980 LB	
30,000 LB	30,000 LB	30,000 LB	
36,000 LB	35,980 LB	35,980 LB	

COMMENTS:

SCALE OK FOR USE ☒ YES ☐ NO

NOTES:

- SCALE TOLERANCE AS APPLIED TO NIST HANDBOOK 44 REQUIREMENTS.
- DEVICES LISTED ON THIS SHEET WERE CHECKED AND CALIBRATED WITH WEIGHTS TRACEABLE TO SI THROUGH N.I.S.T. CERTIFICATIONS FOR TEST WEIGHTS ARE AVAILABLE UPON REQUEST.
- CALIBRATION COMPLIES WITH MSC INSTRUCTION QW 4.11.02, ISO IEC 17025:2005 AND WITH REFERENCE TO NIST HANDBOOK 44 WHERE APPLICABLE.
- RESULTS OF THIS CALIBRATION RELATE ONLY TO THE ITEMS SPECIFIED ABOVE.
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- THE UNCERTAINTY CALCULATIONS ARE AVAILABLE UPON WRITTEN REQUEST FROM THE CUSTOMER.
- END OF REPORT.



PJLA
Calibration
Accreditation # 59303

METRO SCALE COMPANY, INC.
17670 ALLEN ROAD, MELVINDALE, MI 48122
PHONE: (313) 382-6190 FAX: (313) 382-6194

70530

SCALE CALIBRATION REPORT

TECHNICIAN: <i>Alex Luthke / Cody Ogden</i>		DATE: <i>3-3-20</i>		Next Due:	
SCALE MFG: ALKON		CUSTOMER: KOENIG FUEL & SUPPLY CO.(SHIP			
MODEL NO: Spectrum		ADDRESS: 500 E. SEVEN MILE			
SERIAL NO: N/A1					
LOCATION: Cement Scale Plt.1		DETROIT, MI 48203			
CAPACITY/RESOLUTION: 10,000 X 10 LB					
CONDITION PRIOR TO CALIBRATION: ☒ ACCEPTABLE ☐ NEEDS REPAIR - UNABLE TO CAL.					
UNITS OF MEASURE: ☒ POUNDS ☐ KG ☐ GRAMS ☐ OTHER:					
CALIBRATED TO HANDBOOK 44 TOLERANCE: ☐ YES ☐ NO ☐ LEGAL FOR TRADE					
APPLIED WEIGHT	TEST READING		SERIAL NUMBERS OF WEIGHTS USED:		
	BEFORE	AFTER			
0 LB	<i>0lb</i>	<i>0lb</i>	<i>0N76, 0N77, 0N78, 0N79, 0N7A, 22222 @ 1000 lb</i>		
2000LB	<i>2000lb</i>	<i>2000lb</i>			
4000LB	<i>4000lb</i>	<i>4000lb</i>			
6000LB	<i>6000lb</i>	<i>6000lb</i>			
			Shift Test: Before	L/C Cable/Indicator	
			Position 1:	1	2
			Position 2:		
			Position 3:		
			Position 4:	3	4

COMMENTS:

SCALE OK FOR USE ☒ YES ☐ NO

NOTES:

1. SCALE TOLERANCE AS APPLIED TO NIST HANDBOOK 44 REQUIREMENTS.
2. DEVICES LISTED ON THIS SHEET WERE CHECKED AND CALIBRATED WITH WEIGHTS TRACEABLE TO SI THROUGH N.I.S.T. CERTIFICATIONS FOR TEST WEIGHTS ARE AVAILIABLE UPON REQUEST.
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7. THE UNCERTAINTY CALCULATIONS ARE AVAILABLE UPON WRITTEN REQUEST FROM THE CUSTOMER.
8. END OF REPORT.

DISPENSER CALIBRATION

Premiere Concrete Admixtures
PO Box 277
Pioneer, Ohio 43554
(800) 503-3418



Seven Mile
McCoig Materials
500 E 7 Mile Rd
Detroit, MI 48203
United States

Date Of Certification	May 22, 2020
Certified By	Mike McKown

Dispenser Serial	Dispenser Product	Metered	Measured	Tol %
	Impede CNI	260	260	0%
McCoig 4	ConAir	52	52	0%
McCoig 4	OptiFlo 50	220	220	0%
McCoig 4	UltraFlo 2000	200	200	0%
McCoig 4	OptiFlo MR	305	305	0%
McCoig 4	ProLong L	100	100	0%
McCoig 4	NitroCast K	260	260	0%
Mccoig 4	ConAir 260	50	50	0%
Mccoig 4	PCA SRA	200	200	0%
	ConAir X	50	50	0%



McCoig Materials

Water Meter Accuracy Verification 55 Gallon Drum Calibration Sheet

90 Day Requirement for Volumetric Water Batching Devices per MDOT (sect 601.03 A. 1. a.)

Plant Information

Plant Name: Koenig
Plant Number: 1
MDOT Plant Number: M-11
Water Temperature: 75°F
Ambient Temperature: 75°F

Meter Type: Flow
Meter Brand name: Badger
Plant Meter No.: No. 1
Meter Serial No.:
Meter Setting: 0.304
Pulse Count: 1.0 Gallons

Date Information

Calibration Date: 5/23/2020
Next Calibration Date: 8/21/2020

Test 1

Metered Quantity	50 gallons	Measure Quantity	50 gallons
Meter Setting	0.304	Adjusted Setting	Not Required

Test 2

Metered Quantity	50 gallons	Measure Quantity	50 gallons
Meter Setting	0.304	Adjusted Setting	Not Required

Test 3

Metered Quantity	50 gallons	Measure Quantity	50 gallons
Meter Setting	0.304	Adjusted Setting	Not Required

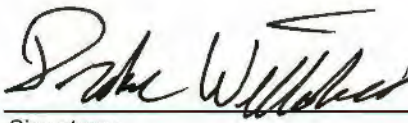
I certify the above information and test results are accurate.

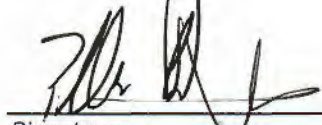
Drake Willobee

Test Performed By:

Robert Esch

Test Witnessed By:

 5-23-20
Signature: Date

 5/23/20
Signature: Date

BOWSER-MORNER, INC.

Delivery Address: 4518 Taylorsville Rd • Dayton, Ohio 45424 Mailing Address: P.O. Box 51 • Dayton, Ohio 45401

AASHTO/ISO 17025 Accredited • USACE Validated



LABORATORY REPORT

Report To: Stoneco
Attn.: Cyndy Brock
7555 Whiteford Rd.
Ottawa Lake, MI 49267

Report Date: 09/25/18
Job No.: 181058
Report No.: 018814A
No. of Pages: 3

Report On: Laboratory Determination of Alkali-Silica Reactivity (ASR)

Procedure: Length Change of Concrete Due to Alkali-Silica Reaction (ASTM C 1293)

Material and Source Information

Sample Identification: MDOT 2NS
Fine Aggregate Source: Burmeister; Pit #81-93
Coarse Aggregate Source: #57 crLS MMA Phillipsburg
Cement Source: Fairborn Cement Co.
Date Received: 08/25/17
Date Cast: 09/25/17

Results are summarized below and detailed on the attached data sheets.

Average Length Change, %		ASTM C 1293 Specification, %
56 Days:	0.012	---
90 Days:	0.017	---
180 Days:	0.018	---
270 Days:	0.023	---
365 Days:	0.025	0.040 Max.

Should you have any questions, or if we may be of further service, please contact me at (937) 236-8805, ext. 329.

Respectfully submitted,
BOWSER-MORNER, INC.

Scott D. Ruhkamp, Supervisor
Special Projects Section
Construction Materials Laboratory

SDR/sdr
018814A
1-File
1-cbrock@stoneco.com

Report To: Stoneco
Sample ID: MDOT 2NS
Source: Burmeister; Pit #81-93

Job No.: 181058
Report No.: 018814A
Date Received: 08/25/17

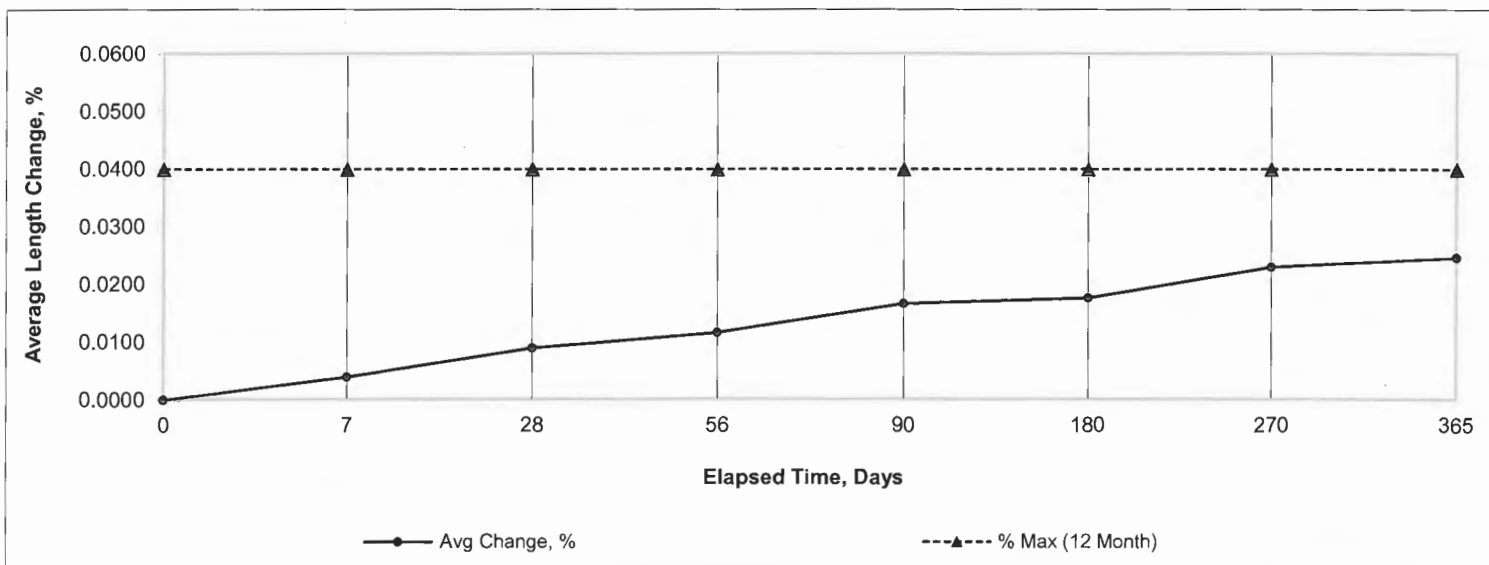
Concrete Mixture Summary				
Aggregates Used	Type	Source	Grading	
Coarse (Lab Standard)	#57 crLS	MMA Phillipsburg	Table 1, coarse	
Fine (Subject)	MDOT 2NS	Burmeister; Pit #81-93	Table 1, fine	
Cement Used	Source	Type	Na ₂ O Equiv., %	
Fairborn Cement Co.	Fairborn, OH	Portland Type I	0.8	
Pozzolan Used	Source	Type	Na ₂ O Equiv., %	
n/a	n/a	n/a	n/a	
Admixtures Used	Source	Type	Dosage Rate	
n/a	n/a	n/a	n/a	
Concrete Proportions, SSD, lbs/cubic yard				
Component	Source	Specific Gravity	Mass, lbs	Volume, cubic yard
Portland Cement	Fairborn Cement Co.*	3.15	708	3.60195
Water	BMI Standard	1.00	308	4.93590
#57 crLS	MMA Phillipsburg*	2.664	1781	10.71384
MDOT 2NS	Burmeister; Pit #81-93	2.640	1265	7.67895
Entrained Air, %:	n/a	n/a	2.7	0.72900
Total	n/a	n/a	4062	27.7
*The cement and coarse aggregate used in this test are BMI's laboratory standards and meet sections 7.1 and 7.2				
Sodium Hydroxide Added, %	W/Cm	Slump, inches	Air, %	
0.4	0.435	2 3/4	2.7	
Fresh Unit Weight, cubic yard	Mass Yield, %			
149.3	100.8			
Storage Containers				
6-gallon (23-liter) plastic pail with gamma seal lid conforming to ASTM C1293, sections 5.2.1 and 5.3.1				

Report To: Stoneco
Sample ID: MDOT 2NS
Source: Burmeister; Pit #81-93
Date Cast: 09/25/17

Job No.: 181058
Report No.: 018814A
Date Received: 08/25/17
Ref. Rod Length: 11.622118

Procedure: Length Change of Concrete Due to Alkali-Silica Reaction (ASTM C 1293)

Age, Days	ID	Reference Rod, inch	Specimen Readings, inch	Expansion, inch	Length Change, %	Avg, %
Initial 09/26/17	A	0.0000	-0.0057	11.6164	n/a	0.0000
	B	0.0000	0.0093	11.6314	n/a	
	C	0.0000	0.0096	11.6317	n/a	
7 10/03/17	A	0.0000	-0.0055	11.6166	0.0020	0.0040
	B	0.0000	0.0099	11.6320	0.0060	
	C	0.0000	0.0100	11.6321	0.0040	
28 10/24/17	A	0.0000	-0.0047	11.6174	0.0100	0.0090
	B	0.0000	0.0101	11.6322	0.0080	
	C	0.0000	0.0105	11.6326	0.0090	
56 11/21/17	A	0.0000	-0.0045	11.6176	0.0120	0.0117
	B	0.0000	0.0103	11.6324	0.0100	
	C	0.0000	0.0109	11.6330	0.0130	
90 12/26/17	A	0.0000	-0.0039	11.6182	0.0180	0.0167
	B	0.0000	0.0109	11.6330	0.0160	
	C	0.0000	0.0112	11.6333	0.0160	
180 03/27/18	A	0.0000	-0.0039	11.6182	0.0180	0.0177
	B	0.0000	0.0110	11.6331	0.0170	
	C	0.0000	0.0114	11.6335	0.0180	
270 06/26/18	A	0.0000	-0.0033	11.6188	0.0240	0.0230
	B	0.0000	0.0115	11.6336	0.0220	
	C	0.0000	0.0119	11.6340	0.0230	
365 09/25/18	A	0.0000	-0.0032	11.6189	0.0250	0.0247
	B	0.0000	0.0117	11.6338	0.0240	
	C	0.0000	0.0121	11.6342	0.0250	



National Ready Mixed Concrete Association



Certificate of Conformance For Concrete Production Facilities

THIS IS TO CERTIFY THAT

Detroit Plant 2, Detroit, MI

McCoig Materials, LLC

MDOT Plant #: M-40

has been inspected by the undersigned licensed professional engineer for conformance with the requirements of the *Check List for Ready Mixed Concrete Production Facilities*. As of the inspection date, the facilities met the requirements for production by

***Central Mixing with Automatic Batching and Recordings of
Cementitious Materials, Aggregate, Water, and Chemical Admixtures***



A handwritten signature in blue ink, likely of Ruben E. Ramos, written over a horizontal line.

Signature of Licensed Professional Engineer

March 14, 2019

Inspection Date

March 14, 2021

Certification Expiration Date

This company will maintain these facilities in compliance with the *Check List* requirements and will correct promptly any deficiencies which develop.

A handwritten signature in blue ink, likely of a company official, written over a horizontal line.

Signature of Company Official

MANAGER

Title of Company Official

NOTICE: The Check List indicates only that plant facilities are satisfactory for the production of concrete when properly operated. Conformance of the concrete itself with specification requirements must be verified by usual inspection methods in accordance with sales agreements.

This certificate is issued by the National Ready Mixed Concrete Association on verification that the production facility conforms to the requirements of the NRMCA Certification of Ready Mixed Concrete Production Facilities, QC3. Unauthorized reproduction or misuse of this certificate may result in legal action.

Plant ID #: 818491

Certification ID #: 24190

© 1965, 1992, 2001, 2002, 2006, 2007, 2012

National Ready Mixed Concrete Association 900 Spring Street • Silver Spring • Maryland 20910



PJLA
Calibration
Accreditation # 59303

METRO SCALE COMPANY, INC.
17670 ALLEN ROAD, MELVINDALE, MI 48122
PHONE: (313) 382-6190 FAX: (313) 382-6194

70554

SCALE CALIBRATION REPORT

TECHNICIAN: <i>Alan Luthi / Andy Ryden</i>	DATE: <i>3-10-20</i> Next Due:
SCALE MFG: ALKON	CUSTOMER: MC COIG CONCRETE(MAIN)
MODEL NO: Spectrum	ADDRESS: 1441 SPRINGWELLS COURT
SERIAL NO: N/A	
LOCATION: Agg Scale	DETROIT, MI 48209

CAPACITY/RESOLUTION: 40,000 X 40 LB

CONDITION PRIOR TO CALIBRATION: ☒ ACCEPTABLE ☐ NEEDS REPAIR - UNABLE TO CAL.

UNITS OF MEASURE: ☒ POUNDS ☐ KG ☐ GRAMS ☐ OTHER:

CALIBRATED TO HANDBOOK 44 TOLERANCE: ☐ YES ☐ NO ☐ LEGAL FOR TRADE

APPLIED WEIGHT	TEST READING		SERIAL NUMBERS OF WEIGHTS USED:			
	BEFORE	AFTER				
0 LB	<i>0LB</i>	<i>0LB</i>	<i>0N76, 0N77, 0N78, 0N79, 0N7A, 22222 @ 1000LB</i>			
2000LB	<i>2000LB</i>	<i>2000LB</i>				
4000LB	<i>4000LB</i>	<i>4000LB</i>				
6000LB	<i>6000LB</i>	<i>6000LB</i>				
<i>8040</i> 8000LB	<i>8040LB</i>	<i>8040LB</i>				
<i>10,040</i> 10,000 LB	<i>10,040LB</i>	<i>10,040LB</i>				
16,000 LB	<i>16,000LB</i>	<i>16,000LB</i>				
22,000 LB	<i>22,000LB</i>	<i>22,000LB</i>				
28,000 LB	<i>28,000LB</i>	<i>28,000LB</i>				
36,000 LB	<i>36,000LB</i>	<i>36,000LB</i>				

COMMENTS:

SCALE OK FOR USE ☒ YES ☐ NO

NOTES:

1. SCALE TOLERANCE AS APPLIED TO NIST HANDBOOK 44 REQUIREMENTS.
2. DEVICES LISTED ON THIS SHEET WERE CHECKED AND CALIBRATED WITH WEIGHTS TRACEABLE TO SI THROUGH N.I.S.T. CERTIFICATIONS FOR TEST WEIGHTS ARE AVAILABLE UPON REQUEST.
3. CALIBRATION COMPLIES WITH MSC INSTRUCTION QW 4.11.02, ISO IEC 17025:2005 AND WITH REFERENCE TO NIST HANDBOOK 44 WHERE APPLICABLE.
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8. END OF REPORT.



PJLA
Calibration
Accreditation # 59303

METRO SCALE COMPANY, INC.
17670 ALLEN ROAD, MELVINDALE, MI 48122
PHONE: (313) 382-6190 FAX: (313) 382-6194

70555

SCALE CALIBRATION REPORT

TECHNICIAN: <i>Alan Lullo / Leahy</i>		DATE: <i>3-10-20</i> Next Due:	
SCALE MFG: ALKON		CUSTOMER: MC COIG CONCRETE(MAIN)	
MODEL NO: Spectrum		ADDRESS: 1441 SPRINGWELLS COURT	
SERIAL NO: N/A			
LOCATION: Water Scale		DETROIT, MI 48209	
CAPACITY/RESOLUTION: 4000 X 2 LB			
CONDITION PRIOR TO CALIBRATION: ☒ ACCEPTABLE ☐ NEEDS REPAIR - UNABLE TO CAL.			
UNITS OF MEASURE: ☒ POUNDS ☐ KG ☐ GRAMS ☐ OTHER:			
CALIBRATED TO HANDBOOK 44 TOLERANCE: ☐ YES ☐ NO ☐ LEGAL FOR TRADE			
APPLIED WEIGHT	TEST READING		SERIAL NUMBERS OF WEIGHTS USED:
	BEFORE	AFTER	
0 LB	<i>0 LB</i>	<i>0 LB</i>	<i>2N76, 2N77, 2N78, 2N79 @ 1000 LB</i>
1000LB	<i>1000 LB</i>	<i>1000 LB</i>	
2000LB	<i>1996 LB</i>	<i>1998 LB</i>	Shift Test: Before <u>L/C Cable/Indicator</u> After
4000LB	<i>3992 LB</i>	<i>4000 LB</i>	Position 1: <i>NA</i> 1 2 <i>NA</i>
			Position 2: 3 4
			Position 3:
			Position 4:

COMMENTS:

SCALE OK FOR USE ☒ YES ☐ NO

NOTES:

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PJLA
Calibration
Accreditation # 59303

METRO SCALE COMPANY, INC.
17670 ALLEN ROAD, MELVINDALE, MI 48122
PHONE: (313) 382-6190 FAX: (313) 382-6194

70556

SCALE CALIBRATION REPORT

TECHNICIAN: <i>Alan Luthke / Candy Ogden</i>		DATE: <i>3-10-21</i>		Next Due:	
SCALE MFG: ALKON		CUSTOMER: MC COIG CONCRETE(MAIN)			
MODEL NO: Spectrum		ADDRESS: 1441 SPRINGWELLS COURT			
SERIAL NO: N/A					
LOCATION: Cement Scale		DETROIT, MI 48209			
CAPACITY/RESOLUTION: 10,000 X 10 LB					
CONDITION PRIOR TO CALIBRATION: ☒ ACCEPTABLE ☐ NEEDS REPAIR - UNABLE TO CAL.					
UNITS OF MEASURE: ☒ POUNDS ☐ KG ☐ GRAMS ☐ OTHER:					
CALIBRATED TO HANDBOOK 44 TOLERANCE: ☐ YES ☐ NO ☐ LEGAL FOR TRADE					
APPLIED WEIGHT	TEST READING		SERIAL NUMBERS OF WEIGHTS USED:		
	BEFORE	AFTER			
0 LB	<i>0 lb</i>	<i>0 lb</i>	<i>0N76, 0N77, 0N78, 0N79, 0N7A, 22222 @ 1000Lb</i>		
2000LB	<i>2000 lb</i>	<i>2000 lb</i>			
4000LB	<i>3990 lb</i>	<i>4000 lb</i>			
6000LB	<i>5980 lb</i>	<i>6000 lb</i>			
			Shift Test: Before L/C Cable/Indicator After		
			Position 1:	<i>NA</i>	
			Position 2:	1	2
			Position 3:		
			Position 4:	3	4

COMMENTS:

SCALE OK FOR USE ☒ YES ☐ NO

NOTES:

1. SCALE TOLERANCE AS APPLIED TO NIST HANDBOOK 44 REQUIREMENTS.
2. DEVICES LISTED ON THIS SHEET WERE CHECKED AND CALIBRATED WITH WEIGHTS TRACEABLE TO SI THROUGH N.I.S.T. CERTIFICATIONS FOR TEST WEIGHTS ARE AVAILIABLE UPON REQUEST.
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8. END OF REPORT.

DISPENSER CALIBRATION

Premiere Concrete Admixtures
PO Box 277
Pioneer, Ohio 43554
(800) 503-3418



Downtown/Springwells
McCoig Materials
1441 Springwells Ct
Detroit, MI 48209
United States

Date Of Certification	June 01, 2020
Certified By	Mike McKown

Dispenser Serial	Dispenser Product	Metered	Measured	Tol %
McCoig 1	ConAir 260	50	50	0%
McCoig 1	OptiFlo MR	320	320	0%
McCoig 1	OptiFlo 50	200	200	0%
McCoig 1	UltraFlo 2000	200	200	0%
McCoig 1	ProLong L	100	100	0%
McCoig 1	NitroCast K	256	256	0%
McCoig 1	Impede CNI	260	260	0%
Mccoig 1	ConAir X	52	52	0%
Mccoig 1	PCA SRA	200	200	0%

Certificate Signature

A handwritten signature in blue ink, appearing to read "Mike McKown", is written over a light blue rectangular background.

McCoig Materials, LLC

CONTRACTOR / PRODUCER AGGREGATE STOCKPILE MANAGEMENT PLAN

Submitted By:

McCoig Materials, LLC
12100 Wayne Road,
Romulus, MI 48174

McCoig Materials, LLC

MDOT – Stockpile Management Plan

The plan covers the procedures McCoig Materials intends to ensure compliance with MDOT for Portland Cement Concrete.

All McCoig Materials plants are MDOT qualified and NRMCA certified per ASTM C-94 Standards.

Aggregates utilized for MDOT projects are from approved manufactures for Coarse, Intermediate and 2NS aggregates. All aggregates will be delivered to the plants via gravel bulk haulers.

Material

Aggregates delivered to our production facilities are from the Approved Manufactures list with MDOT. Aggregates purchased from this list are produced with strict compliance with MDOT standards and testing according to the suppliers Quality Control Plan as submitted by them to MDOT for review and approval.

Supplier production and load out sample gradation analysis are provided weekly by supplier.

Project specifications will be followed to ensure the correct aggregate is being utilized per the project requirements. Specifically Absorption limits and Freeze thaw requirements will be strictly followed.

Stock Pile Management

Aggregates are stockpiled by loader or loaded directly into plant bins dependant on plant configuration.

Stockpiles shall be maintained to eliminate contamination from vehicle tracking.

Stockpiles shall be maintained in separate piles and/or bins.

All attempts will be employed to maintain aggregate moisture contents to SSD, provided it does not compromise mix uniformity due to excess moisture contents.

Handling and moving aggregates will be kept to a minimum to decrease the amount of material degradation occurring that will contribute to LBW.

Action & Suspension Limits:

<u>Quality Characteristic</u>	<u>Action Limits</u>	<u>Suspension Limits</u>
Coarseness Factor	< 50 or > 73	< 45 or > 75
Workability Factor	< 30 or > 38	< 28 or > 44

Corrective Action Limits

Action Limits will be monitored throughout the production process

Action limits are set at the operation boundary limits as established on Table 902-1 Grading Requirements chart as provided by MDOT.

The Contractor/Engineer will be notified whenever the process approaches an action limits.

Suspension of Work Limits

When and if the production gradation have resulted a value that is outside the operational limits as set by the chart provided by MDOT, production will cease and the following will be implemented to correct the gradation back within the action limits / operational boundaries lines.

Material causing values to exceed limits will be removed from production operations and stockpiled separately as to not be incorporated into production.

Stockpile to be investigated for segregation possibilities

Suppliers Load out reports to be reviewed for discrepancies

Supplier to be contacted and revise producing operations if gradations need to be altered and brought back within MDOT requirements.