



WEAVER CONSTRUCTION MANAGEMENT, INC.
 3679 S. Huron St., Suite 404
 Englewood, CO 80110
 Phone: (303) 789-4111 FAX: (303) 789-4310

SUBMITTAL TRANSMITTAL

January 17, 2012
Submittal No: 03300-025

PROJECT: **Harold Thompson Regional WRF**
 Birdsall Rd.
 Fountain, CO 80817
 Job No. 2908

ENGINEER: **GMS, Inc.**
 611 No. Weber St., #300
 Colorado Springs, CO 80903
 719-475-2935 Roger Sams

OWNER: **Lower Fountain Metropolitan
 Sewage Disposal District**
 901 S. Santa Fe Ave.
 Fountain, CO 80817
 719-382-5303 James Heckman

CONTRACTOR: **McDade Woodcock, Inc.**
 7222 Commerce Center Drive, #245
 Colorado Springs, CO 80909
 719-264-1236

SUBJECT: Flowable Backfill Submittal

SPEC SECTION: Cast-In-Place

PREVIOUS SUBMISSION DATES:

DEVIATIONS FROM SPEC: ___ YES X NO

CONTRACTOR'S STAMP: This submittal has been reviewed by Weaver General Construction and approved with respect to the means, methods, techniques, & safety precautions & programs incidental thereto. Weaver General Construction also warrants that this submittal complies with contracted documents and comprises on deviations thereto:

<p>Contractor's Stamp:</p> <p>Date: 1/17/12 Reviewed by: H.C. Myers <input checked="" type="checkbox"/> Reviewed Without Comments <input type="checkbox"/> Reviewed With Comments</p> <p>ENGINEER'S COMMENTS: _____</p>	<p>Engineer's Stamp:</p>
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McDade-Woodcock, Inc.**TRANSMITTAL****No. 00015**7222 Commerce Center Dr. Suite 245
Colorado Springs, CO 80919**Phone:** 719-264-1236
Fax: 719-264-1450**PROJECT:** Harold D. Thompson WRF**DATE:** 1/17/2012**TO:** Weaver General Construction**REF:** Electrical Submittal
03300-001
Cast In-Place Concrete (Flowable
Backfill)**ATTN:** Wes Weaver

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
<input checked="" type="checkbox"/> Shop Drawings	<input checked="" type="checkbox"/> Approval	<input type="checkbox"/> Approved as Submitted
<input type="checkbox"/> Letter	<input type="checkbox"/> Your Use	<input type="checkbox"/> Approved as Noted
<input type="checkbox"/> Prints	<input type="checkbox"/> As Requested	<input type="checkbox"/> Returned After Loan
<input type="checkbox"/> Change Order	<input checked="" type="checkbox"/> Review and Comment	<input type="checkbox"/> Resubmit
<input type="checkbox"/> Plans		<input checked="" type="checkbox"/> Submit
<input type="checkbox"/> Samples	SENT VIA:	<input type="checkbox"/> Returned
<input type="checkbox"/> Specifications	<input checked="" type="checkbox"/> Attached	<input type="checkbox"/> Returned for Corrections
<input type="checkbox"/> Other:	<input type="checkbox"/> Separate Cover Via	<input checked="" type="checkbox"/> Due Date: 1/31/2012

ITEM	PACKAGE	SUBMITTAL	DRAWING	REV.	ITEM NO.	COPIES	DATE	DESCRIPTION	STATUS
					001	1	1/17/2012	Electrical Submittal 03300-001 Cast In-Place Concrete - Flowable Backfill (Per Addendum No. Eight (8))	OUT

Remarks: Electrical Submittal for Review and Approval
Via Email Only**CC:****Signed:** _____
Janelle L Smith



McDADE-WOODCOCK, INC.

HAROLD D. THOMPSON RWRF
HEADWORKS &
SECONDARY CLARIFIER

McDADE-WOODCOCK INC.
PROJECT NUMBER - 1402

ELECTRICAL SUBMITTAL

CAST IN-PLACE CONCRETE
(FLOWABLE BACKFILL)

03300-001
(PER ADDENDUM NO. EIGHT (8))

CORPORATE

2404 Claremont Ave. NE
Albuquerque, NM 87107

Mailing Address
P.O. Box 11592
Albuquerque, NM 87192

Ph 505-884-0155
Fax 505-884-6073

DENVER

10700 E. Geddes Avenue
Suite 170
Englewood CO 80112

Ph 303-803-1809
Fax 303-803-1818

COLORADO SPRINGS

7222 Commerce Center Drive
Suite 245
Colorado Springs, CO 80919

Mailing Address
P.O. Box 7349
Colorado Springs, CO 80933

Ph 719-264-1236
Fax 719-264-1450

Owner:

**Lower Fountain Metropolitan
Sewage District
901 S. Santa Fe Avenue
Fountain, CO 80817**

General Contractor:

**Weaver General Construction Co.
3679 S. Huron St. – Suite 404
Englewood, CO 80110**

Electrical Contractor:

**McDade-Woodcock, Inc.
7222 Commerce Center Dr.
#245
Colorado Springs, CO 80919**

Engineer:

**GMS Inc.
611 N. Weber St., Suite 300
Colorado Springs, CO 80903**



McDADE-WOODCOCK, INC.

HAROLD D. THOMPSON RWRF
HEADWORKS &
SECONDARY CLARIFIER

McDADE-WOODCOCK INC.
PROJECT NUMBER - 1402

ELECTRICAL SUBMITTAL

CAST IN-PLACE CONCRETE
(FLOWABLE BACKFILL)

03300-001
(PER ADDENDUM NO. EIGHT (8))

TABLE OF CONTENTS

TAB 1: Technical Data

CORPORATE

2404 Claremont Ave. NE
Albuquerque, NM 87107

Mailing Address
P.O. Box 11592
Albuquerque, NM 87192

Ph 505-884-0155
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DENVER

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COLORADO SPRINGS

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Colorado Springs, CO 80919

Mailing Address
P.O. Box 7349
Colorado Springs, CO 80933

Ph 719-264-1236
Fax 719-264-1450

TRANSIT MIX CONCRETE CO.

Colorado Springs **Pueblo**
P.O. Box-1030, CO 80901 P.O. Box-857, CO 81002
(719) 475-0700 (Fax) 475-0226 (719) 561-8350 (Fax) 566-0231

CONCRETE MIX DESIGN

January 17, 2012

HAROLD D. THOMPSON WATER RECLAMATION
Birdsall Road, East of Old Pueblo Road
Fountain, Colorado

STRUCTURAL BACKFILL
CDOT FLOWFILL • 65 PSI @ 28 Days (ASTM D 4832)

McDade-Woodcock Inc.
P.O. Box 11592
Albuquerque, New Mexico 97192

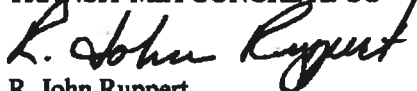
					<u>ONE CUBIC YARD - CUBIC METER</u>	
Cement	(Holcim Type I/II)	50 lbs	30 kg	
Sand	(Daniels Sand)	1845 lbs	1095 kg	
Rock	(Castle Concrete)	1700 lbs	1009 kg	
Water				342 lbs	193 kg	

Transit Mix Concrete CO Mix Identification Number: 20502310

This mix is a Colorado Department of Transportation flow fill mix from 206.02(a) of The Standard Specifications for Road and Bridge Construction. Compliance information on the various materials is enclosed.

Production and delivery is in accordance with ASTM C 94 Standard Specification for Ready-Mixed Concrete. Compressive strength performance is conditional with strict adherence to the current ASTM Standards relating to concrete, and the latest revisions of ACI 301 and 318.

TRANSIT MIX CONCRETE CO



R. John Ruppert
Vice President, Sales

Material Certification Report

Material: Portland Cement
Type: I-II(MH) (ASTM C 150)

Test Period: 01-Nov-2011
To: 30-Nov-2011

Certification

Holcim cement meets the specifications of ASTM C 150 for Type I-II(MH) cement.

General Information

Supplier: Holcim (US) Inc.
Address: 3500 State Highway 120
 Florence, Co. 81226
Telephone: 719-784-1307
Date issued: 07-Dec-2011

Source Location: Portland Plant
 3500 State Highway 120
 Florence, Co. 81226
Contact: Dick Roush

The following information is based on average test data during the test period. The data is typical of cement shipped by Holcim; individual shipments may vary.

Tests Data on ASTM Standard Requirements

Chemical			Physical		
Item	Limit ^A	Result	Item	Limit ^A	Result
SiO ₂ (%)	-	19.4	Air Content (%)	12 max	7
Al ₂ O ₃ (%)	6.0 max	4.8	Blaine Fineness (m ² /kg)	280 min 430 max	414
Fe ₂ O ₃ (%)	6.0 max	3.3			
CaO (%)	-	63.1	Autoclave Expansion (%) (C 151)	0.80 max	0.00
MgO (%)	6.0 max	1.4	Compressive Strength MPa (psi):		
SO ₃ (%) ^B	3.0 max	3.4	3 days	10.0 (1450) min	31.0 (4500)
Loss on Ignition (%)	3.0 max	2.5	7 days	17.0 (2470) min	36.5 (5300)
Insoluble Residue (%)	0.75 max	0.49	Initial Vicat (minutes)	45-375	118
CO ₂ (%)	-	1.3	Mortar Bar Expansion (%) (C 1038)		0.009
Limestone (%)	5.0 max	3.6			
CaCO ₃ in Limestone (%)	70 min	84			
Inorganic Processing Addition	5.0 max	0.0			
Potential Phase Compositions ^D :					
C ₃ S (%)	-	58			
C ₂ S (%)	-	11			
C ₃ A (%)	8 max	7			
C ₄ AF (%)	-	10			
C ₃ S + 4.75C ₃ A (%)	100 max	91			

Tests Data on ASTM Optional Requirements

Chemical			Physical		
Item	Limit ^A	Result	Item	Limit ^A	Result
			Heat of Hydration: 7 days, kJ/kg (cal/g) ^B		346 (83)

Notes

^A Dashes in the limit / result columns mean Not Applicable.

^B Test result represents most recent value and is provided for information only. Analysis of Heat of Hydration has been carried out by CTLGroup, Skokie, IL.

^C It is permissible to exceed the specification limit provided ASTM C 1038 Mortar Bar Expansion does not exceed 0.020 %.

^D Adjusted per Annex A1.6 of ASTM C150 and AASHTO M85.

This data may have been reported on previous mill certificates. It is typical of the cement being currently shipped.

Transit Mix Concrete Co. Materials Laboratory

444 East Castilla Avenue
Colorado Springs, Colorado 80903
Ph. (719) 475-0700 Fax (719) 475-0226

3596 Hwy 76 East
Pueblo, Colorado 81002
Ph. (719) 843-7398 Fax (719) 883-0343

September 7, 2011

RE: Fine Concrete Aggregate
Daniels Sand Pit
3710 Bradley Road
Colorado Springs, Colorado 80916

Gentlemen:

This letter presents the results of physical properties and deleterious substances tests performed on a Fine Concrete Aggregate that was sampled on August 3, 2011 at Daniels Sand Pit. The results are as follows:

Sieve Size	Percent Passing	Specifications
		ASTM C 33 Fine Concrete Agg.
9.5 mm, 3/8"	100	100
4.75 mm, No. 4	99	95 - 100
2.36 mm, No. 8	89	80 - 100
1.18 mm, No. 16	65	50 - 85
600 um, No. 30	51	25 - 60
300 um, No. 50	29	10 - 30
150 um, No. 100	9.3	0 - 10
75 um, No. 200	1.2	0 - 3
Fineness Modulus: 2.58		AASHTO T-37
Bulk Specific Gravity (SSD): 2.59	Absorption: 1.0%	AASHTO T-85
Magnesium Sulfate Soundness (Five Cycles): 2.1% Loss		AASHTO T-104
Sodium Sulfate Soundness (Five Cycles): 1.0% Loss		AASHTO T-104
Average Sand Equivalent: 87		AASHTO T-176
Organic Impurities: Clear		AASHTO T-21
Mortar Bar Expansion (ASR) - Sodium Hydroxide: 0.04%		AASHTO T-303

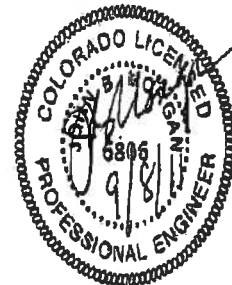
The above sample was tested according to American Society for Testing and Materials (ASTM) procedures D-75, D-2419, C-702, C-117, C-136, C-33, C-40, C-88, C-128 and C-1260.

If you have any questions feel free to contact me at your earliest convenience.

Respectfully Submitted,



Grant W. Smith
Quality Control Manager



Transit Mix Concrete Co. Materials Laboratory

144 East Costilla Avenue
 Colorado Springs, Colorado 80903
 Ph. (719) 475-0700 Fax (719) 475-0226

1596 Hwy 96 East
 Pueblo, Colorado 81002
 Ph. (719) 543-7398 Fax (719) 583-0345

Modified ASTM C 1260 / C 1567 Tests

No. 1012D-8-3 COC

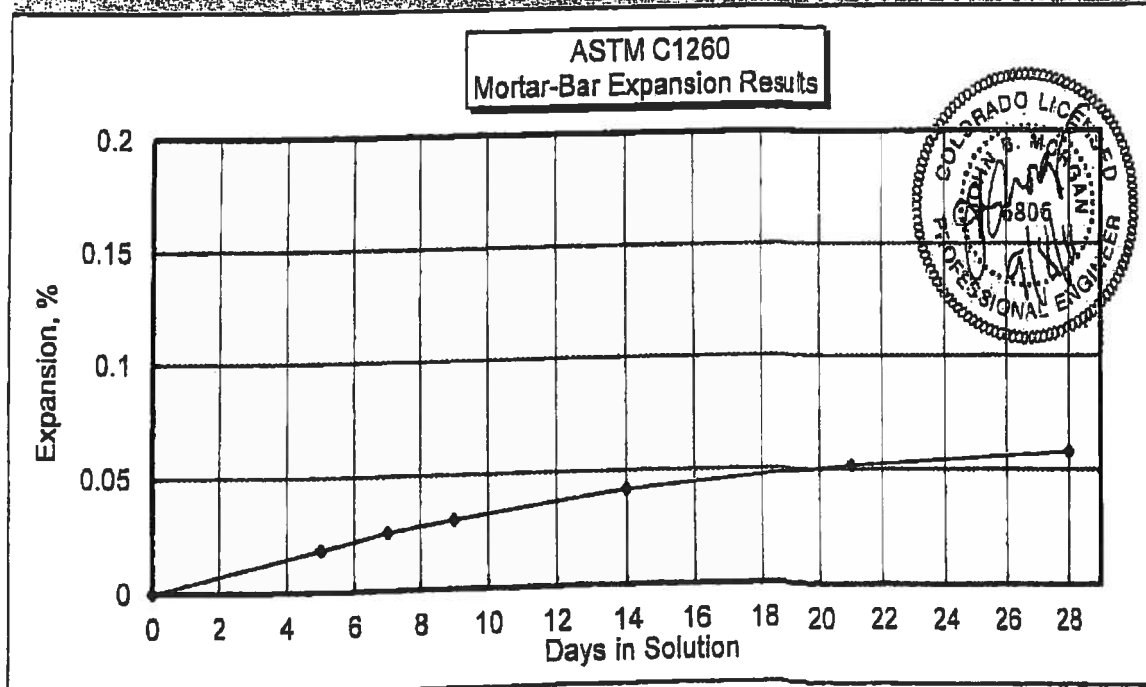
Standard Test Method for Accelerated Detection of Potentially Deleterious Expansion of Mortar Bars Due to Alkali-Silica Reaction

Materials	Source	Product	Blend	Batch Weights, g		Notes
Cement	Holcim	Biorcem 100	Type I/II	190%	440	Batched: 8/8/2011
Flyash					440	
Coarse					990	
Sand	Daniels	Calis Spgs, CO	C-3015 Agg.	100%	990	
Water					206.8	
W/C Ratio					0.47	Completed: 9/7/2011

Specimen ID:		DAN C 89 - 1, 2, 3						
Days	Date	Comparator Readings			Mortar Bar Expansion, %			Average
		1	2	3	1	2	3	
0	8/10/2011	0.1692	0.1705	0.1730				0.0000
5	8/15/2011	0.1739	0.1723	0.1749	0.0190	0.0180	0.0180	0.0183
7	8/17/2011	0.1725	0.1730	0.1755	0.0260	0.0250	0.0250	0.0253
9	8/19/2011	0.1739	0.1735	0.1760	0.0310	0.0300	0.0300	0.0303
14	8/24/2011	0.1741	0.1747	0.1771	0.0420	0.0420	0.0410	0.0417
21	8/31/2011	0.1751	0.1757	0.1781	0.0520	0.0520	0.0510	0.0517
28	9/7/2011	0.1756	0.1765	0.1786	0.0570	0.0600	0.0560	0.0577

Average Percent Expansion at 14 days in solution (16 days of age) 0.04

28 Day expansion results are for informational purposes only



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Ph. (719) 343-7898 Fax (719) 583-0345

August 22, 2011

RE: No. 57/67 Coarse Concrete Aggregate
Castle Concrete
7250 Allegheny Drive
Colorado Springs, CO 80919

Gentlemen:

This letter presents the results of physical properties and deleterious substances tests performed on a coarse aggregate that was sampled on July 18, 2011 at Black Canyon Quarry. The results are as follows:

Sieve Size	Percent Passing	Specifications	
		No. 57	No. 67
37.5 mm, 1 1/2"	100	100	----
25.0 mm, 1"	100	95 - 100	100
19.0 mm, 3/4"	93	----	90 - 100
12.5 mm, 1/2"	43	25 - 60	----
9.5 mm, 3/8"	23	----	20 - 55
4.75 mm, No. 4	2.5	0 - 10	0 - 10
2.36 mm, No. 8	1.8	0 - 5	0 - 5
75 um, No. 200	1.2	0 - 1.5	0 - 1.5
Los Angeles Abrasion (Grading B):	30.0% Loss	AASHTO	T-96
Bulk Specific Gravity (SSD):	2.63 Absorption: 1.5%	AASHTO	T-85
Magnesium Sulfate Soundness (Five Cycles):	5.7% Loss	AASHTO	T-104
Sodium Sulfate Soundness (Five Cycles):	3.4% Loss	AASHTO	T-104
Clay Lumps and Friable Particles:	0	AASHTO	T-112
Fractured Particles (2 Fractured Faces):	100%		
Organic Impurities:	Clear	AASHTO	T-21
Bulk Density by Rodding:	98 lb/ft ³ Voids: 40%	AASHTO	T-19
Mortar Bar Expansion (ASR) - Sodium Hydroxide:	0.03%	ASTM C	1260

The above sample was tested according to American Society for Testing and Materials (ASTM) procedures D-75, D-5821, C-702, C-117, C-136, C-33, C-40, C-142, C-88, C-127, C-131, C-29 and C-1567.

The above sample conforms to the requirements of ASTM C 33, TABLE 3, *Limits for Deleterious Substances and Physical Property Requirements of Coarse Aggregate for Concrete*, (1S, 2S, 3S, 4S, 5S, 1M, 2M, 3M, 4M, 5M, 1N and 2N).

If you have any questions feel free to contact me at your earliest convenience.

Respectfully Submitted,



Grant W. Smith
Quality Control Manager

Transit Mix Concrete Co. Materials Laboratory

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 Colorado Springs, Colorado 80903
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Modified ASTM C 1260 / C 1567 Tests

No. 1122BC-7-18

Standard Test Method for Accelerated Detection of Potentially Deleterious Expansion of Mortar Bars Due to Alkali-Silica Reaction

Materials	Source	Product	Blend	Batch Weights, g		Notes
Cement	Holcim Florence, CO	Type I/II	100%	440	440	Batched: 7/20/2011
Flyash						
Coarse Sand	Blk-Cyn Colo Spgs, CO	57/67	100%	990	990	
Water				206.8		
W/C Ratio				0.47		Completed: 8/19/2011

Specimen ID: BC-1, 2, 3

Days	Date	Comparator Readings			Mortar Bar Expansion, %			Average
		1	2	3	1	2	3	
0	7/22/2011	0.1699	0.1695	0.1705				0.0000
4	7/26/2011	0.1709	0.1707	0.1716	0.0100	0.0120	0.0110	0.0110
7	7/29/2011	0.1715	0.1712	0.1723	0.0160	0.0170	0.0180	0.0170
11	8/2/2011	0.1722	0.1719	0.1729	0.0230	0.0240	0.0240	0.0237
14	8/5/2011	0.1726	0.1723	0.1734	0.0270	0.0280	0.0290	0.0280
21	8/12/2011	0.1733	0.1732	0.1741	0.0340	0.0370	0.0360	0.0357
28	8/19/2011	0.1741	0.1739	0.1748	0.0420	0.0440	0.0430	0.0430

Average Percent Expansion at 14 days in solution (16 days of age) 0.03

28 Day expansion results are for informational purposes only 0.04

