



Structural Special Inspections Report

Waynflete Lower School Addition & Renovations

Portland, Maine

June 5, 2018

Report Prepared by:

Structural Engineer of Record
Becker Structural Engineers, Inc.
75 York Street
Portland, ME 04101
207. 879. 1838

Waynflete Lower School Addition & Renovations

Portland, Maine

June 5, 2018

Structural Engineer of Record

Becker Structural Engineers

75 York Street

Portland, ME 04101

207.879.1838

Owner

Waynflete School

360 Spring Street

Portland, ME 04102

207.774.5721

Architect of Record

Scott Simons Architects

75 York Street

Portland, ME 04101

207.772.4656

Contractor

Wright-Ryan Construction, Inc.

10 Danforth Street

Portland, Maine 04101

207.773.3625



Waynflete Lower School Addition & Renovations

Portland, Maine

June 5, 2018

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Section A: 01000



Project: WAYNFLETE LOWER SCHOOL ADDITION & RENOVATIONS
Date Prepared: January 12, 2017

Structural Statement of Special Inspections

Project: WAYNFLETE LOWER SCHOOL ADDITION & RENOVATIONS

Location: 360 Spring Street, Portland, ME 04102

Owner: Waynflete School

This Statement of Special Inspections encompass the following discipline: Structural

This Statement of Special Inspections is submitted as a condition for permit issuance in accordance with the Special Inspection and Structural Testing requirements of the Building Code. It includes a schedule of Special Inspection services applicable to this project as well as the name of the Structural Special Inspection Coordinator (SSIC) and the identity of other approved agencies to be retained for conducting these inspections and tests.

The Structural Special Inspection Coordinator shall keep records of all Structural inspections and shall furnish inspection reports to the Building Code Official (BCO) and the Structural Registered Design Professional in Responsible Charge (SRDP). Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Structural Registered Design Professional in Responsible Charge. The Special Inspection program does not relieve the Contractor of his or her responsibilities.

Interim reports shall be submitted to the Building Official and the Structural Registered Design Professional in Responsible Charge at an interval determined by the SSIC and the BCO.

A Final Report of Special Inspections documenting completion of all required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted to the BCO prior to issuance of a Certificate of Use and Occupancy.

Job site safety and means and methods of construction are solely the responsibility of the Contractor.

Interim Report Frequency: Upon request of Building Official _____ or per attached schedule.

Prepared by:

Daniel S. Burne, P.E. - Becker Structural Engineers

(type or print name of the Structural Registered Design Professional in Responsible Charge)



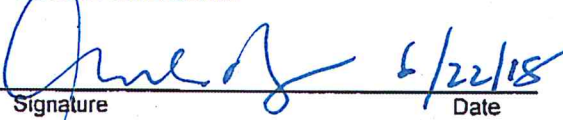
Signature

01/12/2017

Date



Owner's Authorization:



Signature

Date

Building Code Official's Acceptance:

Signature

Date

Structural Statement of Special Inspections (Continued)

List of Agents

Project: WAYNFLETE LOWER SCHOOL ADDITION & RENOVATION
 Location: 360 Spring Street, Portland, ME 04102
 Owner: Waynflete School
 This Statement of Special Inspections encompass the following discipline: **Structural**

(Note: Statement of Special Inspections for other disciplines may be included under a separate cover)

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- Soils and Foundations
- Cast-in-Place Concrete
- Precast Concrete System
- Structural Masonry Systems
- Structural Steel
- Wood Construction
- Special Cases

Special Inspection Agencies	Firm	Address, Telephone, e-mail
1. STRUCTURAL Special Inspections Coordinator (SSIC)	Becker Structural Engineers, Inc. Daniel S. Burne, P.E. Alexander R. Wheelock, P.E.	75 York Street, Portland, ME 04101 207-879-1838 dan@beckerstructural.com awheelock@beckerstructural.com
2. Special Inspector (SI 1)	Becker Structural Engineer, Inc. Daniel S. Burne, P.E. Alexander R. Wheelock, P.E.	75 York Street, Portland, ME 04101 207-879-1838 dan@beckerstructural.com awheelock@beckerstructural.com
3. Special Inspector (SI 2)	S.W. Cole Engineering, Inc. Paul F. Kohler, P.E.	286 Portland Road, Gray, ME 04039 207-657-2866 paul.kohler@swcole.com
4. Testing Agency (TA 1)	S.W. Cole Engineering, Inc. Roger E. Domingo	286 Portland Road, Gray, ME 04039 207-657-2866 Roger.domingo@swcole.com
5. Testing Agency (TA 2)	N/A	
6. Other (O1)	N/A	

Note: The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.

Project: WAYNFLETE LOWER SCHOOL ADDITION & RENOVATIONS

Date Prepared: January 12, 2017

Structural Statement of Special Inspections (Continued)

Final Report of Special Inspections (SSIC/SI 1)

[To be completed by the Structural Special Inspections Coordinator (SSIC/SI 1). Note that all Agent's Final Reports must be received prior to issuance.]

Project: *WAYNFLETE LOWER SCHOOL ADDITION & RENOVATION*

Location: *360 Spring Street, Portland, ME 04102*

Owner: *Waynflete School*

Owner's Address: *360 Spring Street
Portland, ME 04102*

Architect of Record: *Scott Simons, AIA* *Scott Simons Architects*
(name) (firm)

Structural Registered Design
Professional in Responsible Charge: *Daniel S. Burne, P.E.* *Becker Structural Engineers*
(name) (firm)

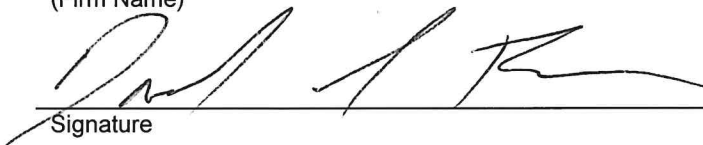
To the best of my information, knowledge and belief, the Special Inspections required for this project, and itemized in the *Statement of Special Inspections* submitted for permit, have been performed and all discovered discrepancies have been reported and resolved.

Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,
Structural Special Inspection Coordinator

Daniel S. Burne, P.E.
(Type or print name)

Becker Structural Engineers
(Firm Name)

 *06/05/18*
Signature Date



Structural Statement of Special Inspections (Continued)
Special Inspector's/Agent's Final Report

Project: *WAYNFLETE LOWER SCHOOL ADDITION & RENOVATION*
Special Inspector or Agent: *Paul F. Kohler, PE* *S. W. Cole Engineering, Inc.*
Designation: *(name)* *(firm)*
SI-2

~~To the best of my information, knowledge and belief, the Special Inspections or testing required for this project, and designated for this Inspector/Agent in the Statement of Special Inspections submitted for permit, have been performed and all discovered discrepancies have been reported and resolved.~~ This Special Inspector's/Agent's Final Report is specific to items 1.a., 1.b. and 1.e. of the Structural Schedule of Special Inspections dated January 12, 2017. Observations of foundation subgrade soils were made on an on-call basis at certain locations on certain days as scheduled by the general contractor (see S.W.COLE reports). Not all subgrades were observed. To the best of my information, knowledge and belief, the Special Inspections requested by others and designated for this Inspector/Agent in the Statement of Special Inspections and submitted for permit, have been performed and discovered discrepancies have been reported.

Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,
Special Inspector or Agent:

Paul F Kohler

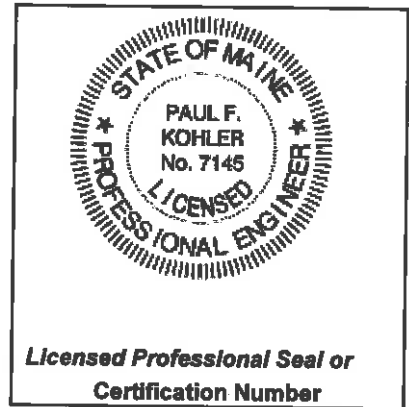
(Type or print name)



Signature

04/19/18

Date



Project: WAYNFLETE LOWER SCHOOL ADDITION & RENOVATIONS

Date Prepared: January 12, 2017

Structural Statement of Special Inspections (Continued)

Special Inspector's/Agent's Final Report

Project: *WAYNFLETE LOWER SCHOOL ADDITION & RENOVATION*

Special Inspector or

Agent:

Roger E. Domingo

S.W. COLE ENGINEERING, INC.

(name)

(firm)

Designation:

TA-1

To the best of my information, knowledge and belief, the Special Inspections or testing required for this project, and designated for this Inspector/Agent in the *Statement of Special Inspections* submitted for permit, have been performed and all discovered discrepancies have been reported and resolved.

Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,
Special Inspector or Agent:

Roger E. Domingo

(Type or print name)



Signature

4/18/18

Date

SEAL NOT REQUIRED FOR
TESTING AGENCY

*Licensed Professional Seal or
Certification Number*

Disclaimers and Qualifications

The program of Structural/Special Tests and Inspections does not relieve the Contractor or its Subcontractors of their responsibilities and obligations for quality control of the work, for any design work which is included in the scope of services, and for full compliance with the requirements of the Construction Documents. Furthermore, the detection of, or the failure to detect, deficiencies or defects in work during testing and inspection conducted pursuant to the Program does not relieve the Contractor or its subcontractors of their responsibility to correct all deficiencies or defects, whether detected or undetected, in all parts of work, and to otherwise comply with all requirements of the Construction Documents. No warrantee is expressed or implied by the issuance of this document. Additional disclaimers and/or qualifications may be included in the Owner-Special Inspection agreement.

Section B: 01000



Structural Schedule of Special Inspections

Qualifications of Inspectors and Testing Technicians

The qualifications of all personnel performing Special Inspection and testing activities are subject to the approval of the Building Official. The credentials of all Inspectors and testing technicians shall be provided to the Special Inspector for their records. *NOTE VERIFICATION THAT QUALIFIED INDIVIDUALS ARE AVAILABLE TO PERFORM STIPULATED TESTING AND/OR INSPECTION SHOULD BE PROVIDED PRIOR TO SUBMITTING STATEMENT. AGENT QUALIFICATIONS IN SCHEDULE ARE SUGGESTIONS ONLY; FINAL QUALIFICATIONS ARE SUBJECT TO THE DISCRETION OF THE REGISTERED DESIGN PROFESSIONAL PREPARING THE SCHEDULE.*

Key for Minimum Qualifications of Inspection Agents:

When the Registered Design Professional in Responsible Charge or Special Inspector of Record deems it appropriate that the individual performing a stipulated test or inspection have a specific certification, license or experience as indicated below, such requirement shall be listed below and shall be clearly identified within the schedule under the Agent Qualification Designation.

PE/SE	Structural Engineer – a licensed SE or PE specializing in the design of building structures
PE/GE	Geotechnical Engineer – a licensed PE specializing in soil mechanics and foundations
EIT	Engineer-In-Training – a graduate engineer who has passed the Fundamentals of Engineering examination

Experienced Testing Technician

ETT	Experienced Testing Technician – An Experienced Testing Technician with a minimum 5 years experience with the stipulated test or inspection
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American Concrete Institute (ACI) Certification

ACI-CFTT	Concrete Field Testing Technician – Grade 1
ACI-CCI	Concrete Construction Inspector
ACI-LTT	Laboratory Testing Technician – Grade 1&2
ACI-STT	Strength Testing Technician

American Welding Society (AWS) Certification

AWS-CWI	Certified Welding Inspector
AWS/AISC-SSI	Certified Structural Steel Inspector

American Society of Non-Destructive Testing (ASNT) Certification

ASNT	Non-Destructive Testing Technician – Level II or III.
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International Code Council (ICC) Certification

ICC-SMSI	Structural Masonry Special Inspector
ICC-SWSI	Structural Steel and Welding Special Inspector
ICC-SFSI	Spray-Applied Fireproofing Special Inspector
ICC-PCSI	Prestressed Concrete Special Inspector
ICC-RCSI	Reinforced Concrete Special Inspector

National Institute for Certification in Engineering Technologies (NICET)

NICET-CT	Concrete Technician – Levels I, II, III & IV
NICET-ST	Soils Technician - Levels I, II, III & IV
NICET-GET	Geotechnical Engineering Technician - Levels I, II, III & IV

Other

Project: WAYNFLETE LOWER SCHOOL ADDITION & RENOVATIONS

Date Prepared: January 12, 2017

Structural Schedule of Special Inspections

SOILS & FOUNDATION CONSTRUCTION

VERIFICATION AND INSPECTION	REQD Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
IBC Section 1704.7, 1704.8, 1704.9						
1. Required Verification and Inspection of Soils:						
a. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	Y	P	IBC 1704.7	SI2	PE/GE, EIT or ETT	X
b. Verify excavations are extended to proper depth and have reached proper material.	Y	P	IBC 1704.7	SI2	PE/GE, EIT or ETT	X
c. Perform classification and testing of compacted fill materials.	✗ N*	P	IBC 1704.7	TA1	PE/GE, EIT or ETT	X
d. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	✗ N*	C	IBC 1704.7	TA1	PE/GE, EIT or ETT	X
e. Prior to placement of compacted fill, observe subgrade and verify that site has been prepared properly.	Y	P	IBC 1704.7	SI2	PE/GE, EIT or ETT	X
2. Required Verification and Inspection of Driven Deep Foundation Elements:						
a. Verify element materials, sizes and lengths comply with the requirements.	N	C	IBC 1704.8	TA1	PE/GE, EIT or ETT	-
b. Determine capacities of test elements and conduct additional load tests, as required.	N	C	IBC 1704.8	SI2	PE/GE, EIT or ETT	-
c. Observe driving operations and maintain complete and accurate records for each element.	N	C	IBC 1704.8	TA1	PE/GE, EIT or ETT	-
d. Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element.	N	C	IBC 1704.8	TA1	PE/GE, EIT or ETT	-
3. Required Verification and Inspection of Cast-in-Place Deep Foundation Elements:						
a. Observe drilling operations and maintain complete and accurate records for each element.	N	C	IBC 1704.9	TA1	PE/GE, EIT or ETT	-
b. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end bearing strata capacity. Record concrete or grout volumes.	N	C	IBC 1704.9	TA1	PE/GE, EIT or ETT	-

See Concrete, Masonry, and/or Steel Schedules for additional material inspections for deep foundation elements as applicable.

*N/A – Subgrade is crushed stone wrapped in non-woven geotextile fabric overlying undisturbed native glacial till, observed by SI2. -DSB

Project: WAYNFLETE LOWER SCHOOL ADDITION & RENOVATIONS

Date Prepared: January 12, 2017

Structural Schedule of Special Inspections

CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	REQD	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
	Y/N					
IBC Section 1704.4						
1. Inspection of reinforcing steel, including prestressing tendons, and placement	Y	P	ACI 318: 3.5, 7.1-7.7	SI1	PE/SE or EIT	X
2. Inspection of reinforcing steel welding in accordance with Table 1704.3, Item 5B	N	-	Not applicable. Welding of Reinf Not Allowed	-	-	-
3. Inspect bolts to be installed in concrete prior to and during placement of concrete where allowable loads have been increased or where strength design is used.	N	C	IBC 1911.5	SI1	PE/SE or EIT	-
4. Inspection of anchors installed in hardened concrete.	Y	P	IBC 1212.1	SI1	PE/SE or EIT	X
5. Verifying use of required design mix	Y	P	ACI 318: Ch 4, 5.2-5.4	TA1	ACI-CFTT or ACI-STT	X
6. At time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests and determine the temperature of the concrete.	Y	C	ASTM C 172 ASTM C 31 ACI 318: 5.6, 5.8	TA1	ACI-CFTT or ACI-STT	X
7. Inspection of concrete and shotcrete placement for proper application techniques	Y	C	ACI 318: 5.9, 5.10	TA1	ACI-CFTT or ACI-STT	X
8. Inspection for maintenance of specified curing temperature and techniques	Y	P	ACI 318: 5.11-5.13	SI1	PE/SE or EIT	X
9. Inspection of Prestressed Concrete						
a. Application of prestressing force.	N	C	ACI 318: 18.20	TA2	PE/SE or EIT	-
b. Grouting of bonded prestressing tendons in seismic force resisting system	N	C	ACI 318: 18.18.4	TA1	ACI-CFTT or ACI-STT	-
10. Erection of precast concrete members.	N	P	ACI 318: Ch 16	SI1	PE/SE or EIT	-
11. Verification of in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	N	P	ACI 318: 6.2	TA1	ACI-CFTT or ACI-STT	-
12. Inspect formwork for shape, location and dimensions of the concrete member being formed.	Y	P	Limitations apply. See below	SI1	PE/SE or EIT	X

Limitations of item 12: Special inspection includes periodic review of formwork shape, general location, and formwork dimensions that can be readily measured with conventional tape measure. Verification of building layout, building location, foundation extents, column grids, and foundation elevations is excluded.

Project: WAYNFLETE LOWER SCHOOL ADDITION & RENOVATIONS

Date Prepared: January 12, 2017

Structural Schedule of Special Inspections

MASONRY CONSTRUCTION – LEVEL 1

VERIFICATION AND INSPECTION IBC Section 1704.5	REQD	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
	Y/N					
1. Compliance with required inspection provisions of the construction documents and the approved submittals shall be verified.	Y	P	ACI530.1, 1.5	SI1	PE/SE or EIT	X
2. Verification of f'_m and f'_{AAC} prior to construction except where specifically exempted by this code.	Y	P	ACI531.1, 1.4B	TA1	ACI-CFTT or ACI-STT	X
3. Verification of slump flow and VSI as delivered to the site for self-consolidating grout.	Y	C	ACI530.1, 1.5B.1.b.3	TA1	ACI-CFTT or ACI-STT	X
4. As masonry construction begins, the following shall be verified to ensure compliance:						
a. Proportions of site-prepared mortar.	Y	P	ACI530.1, 2.6A	TA1	ACI-CFTT or ACI-STT	X
b. Construction of mortar joints.	Y	P	ACI530.1, 3.3B	TA1	ACI-CFTT or ACI-STT	X
c. Location of reinforcement and connectors.	Y	P	ACI530.1, 3.4, 3.6A	SI1	PE/SE or EIT	X
d. Prestressing technique.	N	P	ACI530.1, 3.6B	SI1	PE/SE or EIT	-
e. Grade and size of prestressing tendons and anchorages.	N	P	ACI530.1, 2.4B, 2.4H	SI1	PE/SE or EIT	-
5. During construction the inspection program shall verify:						
a. Size and location of structural elements.	Y	P	ACI530.1, 3.3F	SI1	PE/SE or EIT	X
b. Type, size and location of anchors, including other details of anchorage of masonry to structural members, frames or other construction.	Y	P	ACI530, 1.2.2(e), 2.1.4, 3.1.6	SI1	PE/SE or EIT	X
c. Specified size, grade and type of reinforcement, anchor bolts, prestressing tendons and anchorages.	Y	P	ACI530, 1.12, ACI530.1, 2.4, 3.4	SI1	PE/SE or EIT	X
d. Welding of reinforcing bars.	N	-	Not applicable. Welding of Reinf Not Allowed	-	-	-
e. Preparation, construction and protection of masonry during cold weather (temperature below 40°F) or hot weather (temperature above 90°F).	Y	P	IBC 2104.3, 2104.4; ACI530.1, 1.8C, 1.8D	SI1	PE/SE or EIT	X
f. Application and measurement of prestressing force.	N	C	ACI530.1, 3.6B	TA2	PE/SE or EIT	-
6. Prior to grouting, the following shall be verified to ensure compliance:						
a. Grout space is clean.	Y	P	ACI530.1, 3.2D	TA1	PE/SE or EIT	X
b. Placement of reinforcement and connectors and prestressing tendons and anchorages.	Y	P	ACI530, 1.12, ACI530.1, 3.4	TA1	PE/SE or EIT	X
c. Proportions of site-prepared grout and prestressing grout for bonded tendons.	Y	P	ACI530.1, 2.6B	TA1	ACI-CFTT or ACI-STT	X
d. Construction of mortar joints.	Y	P	ACI530.1, 3.3B	TA1	ACI-CFTT or ACI-STT	X
7. Grout placement shall be verified to ensure compliance.	Y	C	ACI530.1, 3.5	TA1	ACI-CFTT or ACI-STT	X
a. Grouting of prestressing bonded tendons.	N	C	ACI530.1, 3.6C	TA1	ACI-CFTT or ACI-STT	-
8. Preparation of any required grout specimens, mortar specimens and/or prisms shall be observed.	Y	C	IBC 2105.2.2, 2105.3; ACI530.1, 1.4	TA1	ACI-CFTT or ACI-STT	X

Project: WAYNFLETE LOWER SCHOOL ADDITION & RENOVATIONS

Date Prepared: January 12, 2017

Structural Schedule of Special Inspections - STEEL CONSTRUCTION

VERIFICATION AND INSPECTION IBC Section 1704.3	REQD Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
1. Material verification of high-strength bolts, nuts and washers:						
a. Identification markings to conform to ASTM standards specified in the approved construction documents.	Y	P	Applicable ASTM material standards, AISC 360, A3.3	TA1	AWS/AISC-SSI	X
b. Manufacturer's certificate of compliance required.	Y	S		SI1	PE/SE or EIT	X
2. Inspection of high-strength bolting						
a. Snug-tight joints.	Y	P		TA1	AWS/AISC-SSI	X
b. Pretensioned and slip-critical joints using turn-of-nut with matchmaking, twist-off bolt or direct tension indicator methods of installation.	Y	P	AISC LRFD Section M2.5	TA1	AWS/AISC-SSI	X
c. Pretensioned and slip-critical joints using turn-of-nut without matchmaking or calibrated wrench methods of installation.	Y	C	IBC Sect 1704.3.3	TA1	AWS/AISC-SSI	X
3. Material verification of structural steel and cold-formed steel deck:						
a. For structural steel, identification markings to conform to AISC 360.	Y	P	AISC 360, M5.5	SI1	PE/SE or EIT	X
b. For other steel, identification markings to conform to ASTM standards specified in the approved construction documents.	Y	P	Applicable ASTM material standards	SI1	PE/SE or EIT	X
c. Manufacturer's certified test reports.	Y	S		SI1	PE/SE or EIT	X
4. Material verification of weld filler materials:						
a. Identification markings to conform to AWS specification in the approved construction documents.	Y	P	AISC 360, M5.5	TA1	AWS/AISC-SSI	X
b. Manufacturer's certificate of compliance required.	Y	S		SI1	PE/SE or EIT	X
5. Submit current AWS D1.1 welder certificate for all field welders who will be welding on this project.	Y	S	AWS D1.1	SI1	PE/SE or EIT	X
6. Inspection of welding (IBC 1704.3.1):						
a. Structural steel and cold-formed deck:						
1) Complete and partial joint penetration groove welds.	Y	C	AWS D1.1	TA1	AWS-CWI	X
2) Multipass fillet welds.	Y	C		TA1	AWS-CWI	X
3) Single-pass fillet welds > 5/16"	Y	C		TA1	AWS-CWI	X
4) Plug and slot welds	Y	C		TA1	AWS-CWI	X
5) Single-pass fillet welds ≤ 5/16"	Y	P		TA1	AWS-CWI	X
6) Floor and deck welds.	Y	P	AWS D1.3	TA1	AWS-CWI	X
b. Reinforcing steel:						
1) Verification of weldability of reinforcing steel other than ASTM A706.	N	-	Not applicable.	-	-	-
2) Reinforcing steel-resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special structural walls of concrete and shear reinforcement.	N	C	AWS D1.4 ACI 318: 3.5.2	TA1	AWS-CWI	-
3) Shear reinforcement.	N	C		TA1	AWS-CWI	-
4) Other reinforcing steel.	N	P		TA1	AWS-CWI	-
7. Inspection of steel frame joint details for compliance (IBC Sect 1704.3.2) with approved construction documents:						
a. Details such as bracing and stiffening.	Y	P	IBC 1704.3.2	SI1	PE/SE or EIT	X
b. Member locations.	Y	P		SI1	PE/SE or EIT	X
c. Application of joint details at each connection.	Y	P		SI1	PE/SE or EIT	X

Structural Schedule of Special Inspection Services

FABRICATION AND IMPLEMENTATION PROCEDURES – STRUCTURAL STEEL

VERIFICATION AND INSPECTION IBC Section 1704.2	REQD	EXTENT:	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
	Y/N	CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE				
1. Fabrications Procedures: Review of fabricator's written procedural and quality control manuals and periodic auditing of fabrication practices by an approved special inspection agency. At the completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building code official stating that the work was performed in accordance with the approved construction documents. -OR- 2. AISC Certification	Y	S	Fabricator shall submit one of the two qualifications	SI1	PE/SE or EIT	X
3. At completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building code official stating that the work was performed in accordance with the approved construction documents.	Y	S	IBC 1704.2.2	SI1	PE/SE or EIT	X

Structural Schedule of Special Inspections
WOOD CONSTRUCTION

VERIFICATION AND INSPECTION	REQD Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
IBC Section 1704.6						
1. Fabrication of high-load diaphragms						
a. Verify wood structural panel sheathing for grade and thickness	Y	P	IBC 1704.6	SI1	PE/SE or EIT	X
b. Verify the nominal size of framing members at adjoining panel edges	Y	P	IBC 1704.6	SI1	PE/SE or EIT	X
b. Verify the nail or staple diameter and length	Y	P	IBC 1704.6	SI1	PE/SE or EIT	X
b. Verify the number of fastener lines	Y	P	IBC 1704.6	SI1	PE/SE or EIT	X
b. Verify the spacing between fasteners in each line and at edge margins	Y	P	IBC 1704.6	SI1	PE/SE or EIT	X
2. Load Tests for Joist Hangers: Provide evidence of manufacturer's load test in accordance with ASTM D1761 including the vertical load bearing capacity, torsional moment capacity, and deflection characteristics when there is no calculated procedure recognized by the code.	N	S	IBC 1716 [submit ICBO reports]	SI1	PE/SE or EIT	-
3. Metal-plate-connected wood trusses spanning 60 feet or greater:						
a. Verify the temporary installation restraint / bracing and the permanent individual truss member restraint / bracing is installed per the approved truss submittal package.	N	P	IBC 1704.6.2.	SI1	PE/SE or EIT	-

Project: WAYNFLETE LOWER SCHOOL ADDITION & RENOVATIONS

Date Prepared: January 12, 2017

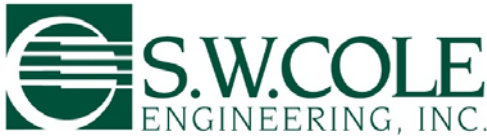
Structural Schedule of Special Inspections

SEISMIC RESISTANCE - STRUCTURAL

VERIFICATION AND INSPECTION	REQD Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETE D
IBC Section 1707						
1. Special inspections for seismic resistance. Special inspection as specified in this section is required for the following:						
a. The seismic-force-resisting systems in structures assigned to Seismic Design Category C, D, E or F	N	P	IBC 1707.1	SI1	PE/SE or EIT	-
b. Designated seismic systems in structures assigned to Seismic Design Category D, E, or F.	N	P	IBC 1707.1	SI1	PE/SE or EIT	-
2. Structural steel: Continuous special inspection for structural welding in accordance with AISC 341.	N	C	IBC 1707.2	TA1	AWS-CWI	-
3. Structural wood:						
a. Continuous special inspection during field gluing operations of elements of the seismic-force-resisting system.	N	C	IBC 1707.3	SI1	PE/SE or EIT	-
b. Periodic special inspections for nailing, bolting, anchoring and other fastening of components within the seismic-force-resisting system (where spacing is 4" o.c., or less) including drag struts, braces and hold-downs	N	P	IBC 1707.3	SI1	PE/SE or EIT	-
4. Cold-formed steel framing: Periodic special inspections during welding operations of elements of the seismic-force-resisting system. Periodic special inspections for screw attachment, bolting, anchoring and other fastening of components within the seismic-force-resisting system (where spacing is 4" o.c., or less), including struts, braces, and hold-downs	N	-	CFSF for this project not part of the primary seismic-force resisting system.	-	-	-
5. Seismic isolation system. Provide periodic special inspection during the fabrication and installation of isolator units and energy dissipation devices if used as part of the seismic isolation system	N	-	Seismic isolators not used.	-	-	-

Section B: 02300





Soil Observation Report

Project Name:	Waynflete/Lower School Replacement	Project No. :	15-0577.1
Location:	360 Spring St./Portland, Me	Date:	8-3-17 and 8-4-17
Client / Client's Rep:	Waynflete School/PML Project Management-Phil LaClaire	S.W.COLE Rep. :	PFK
Earthwork Contractor:	Eastern Excavation	Arrived on Site:	3:15 +/- pm 12:30+/-pm
General Contractor:	Wright-Ryan/Millard	Left Site:	4:15 +/-pm 1:00+/-pm

<u>Soil Observations</u>	<u>Observed</u>		<u>Comments</u>
Subgrade Preparation	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Fill Placement (method and uniformity)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Material (proper type, sample #)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Lift Thickness	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Compaction (equipment, passes)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
*In-place Densities (frequency)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
<u>Non-Conformance Items (person notified)</u>		Yes <input type="checkbox"/> No <input type="checkbox"/>	

*refer to associated report for in-situ density results

Observations / Discussions:

8-3-17

As scheduled by Millard Nadeau of Wright-Ryan Construction (WR), we made a visit to the site on 8-3-17. The purpose of our visit was to observe footing subgrade soils in certain areas of the site. Eastern Excavation (EE) project earthwork contractor, was on site at the time of our visit. We met with Millard and Tony from EE while on site.

The area observed today was the subgrade for foundations from approximately D to D.8-Line and generally between 1 and 3 -Lines.

Prior to our visit, EE had excavated reportedly to 6 inches below proposed bottom of footing (BOF) elev from about D to D.8- Line for the proposed exterior building wall footing and the foundation wall footing for the proposed covered walkway. The excavation was made wide enough for both of these footing lines. We understand EE had excavated to an elevation of 122.67 ft at the exterior building wall line and to an elevation of 121.67 along the footing line for the covered walkway. EE was continuing excavation toward G- Line.

A majority of the exposed subgrade consisted of moist, dense glacial till with the exception of about 3 to 5 feet of southeasterly side which consisted of wet to saturated brown medium to coarse sand with some gravel. EE removed the sandy soil which was about 12 inches thick in this area to expose the underlying dense till.

The dense glacial till soil is consistent with the findings at the test boring explorations made during our geotechnical investigation in September 2015 and is suitable for foundation support. We understand EE will place the geotextile fabric and crushed stone proposed beneath all footings. We understand the crushed stone will be placed in lifts and be compacted with a heavy vibratory plate compactor. We understand EE will continue excavating toward G- Line tomorrow.

The S.W. COLE field representative is on-site at the request of our client to provide construction materials testing and to observe and document construction activities. The contractor has sole responsibility for schedule, site safety, methods, completeness and quality control.

8-4-17

We made a follow-up visit on 8-4-17 to observe additional exposed subgrade. Prior to our visit today, EE had excavated to E -Line between about Lines 1 and 3. The subgrade consisted of the dense glacial till soil except for about 5 feet of the southeasterly side of the excavation which consisted of what appears to be native dense gravelly sand with some silt. A hand-dug test pit was made to a depth of about 12 inches and encountered dense gravelly sand with the underlying glacial till at a depth of about 12 inches. The subgrade observed today (glacial till and dense gravelly sand) appears suitable for foundation support.

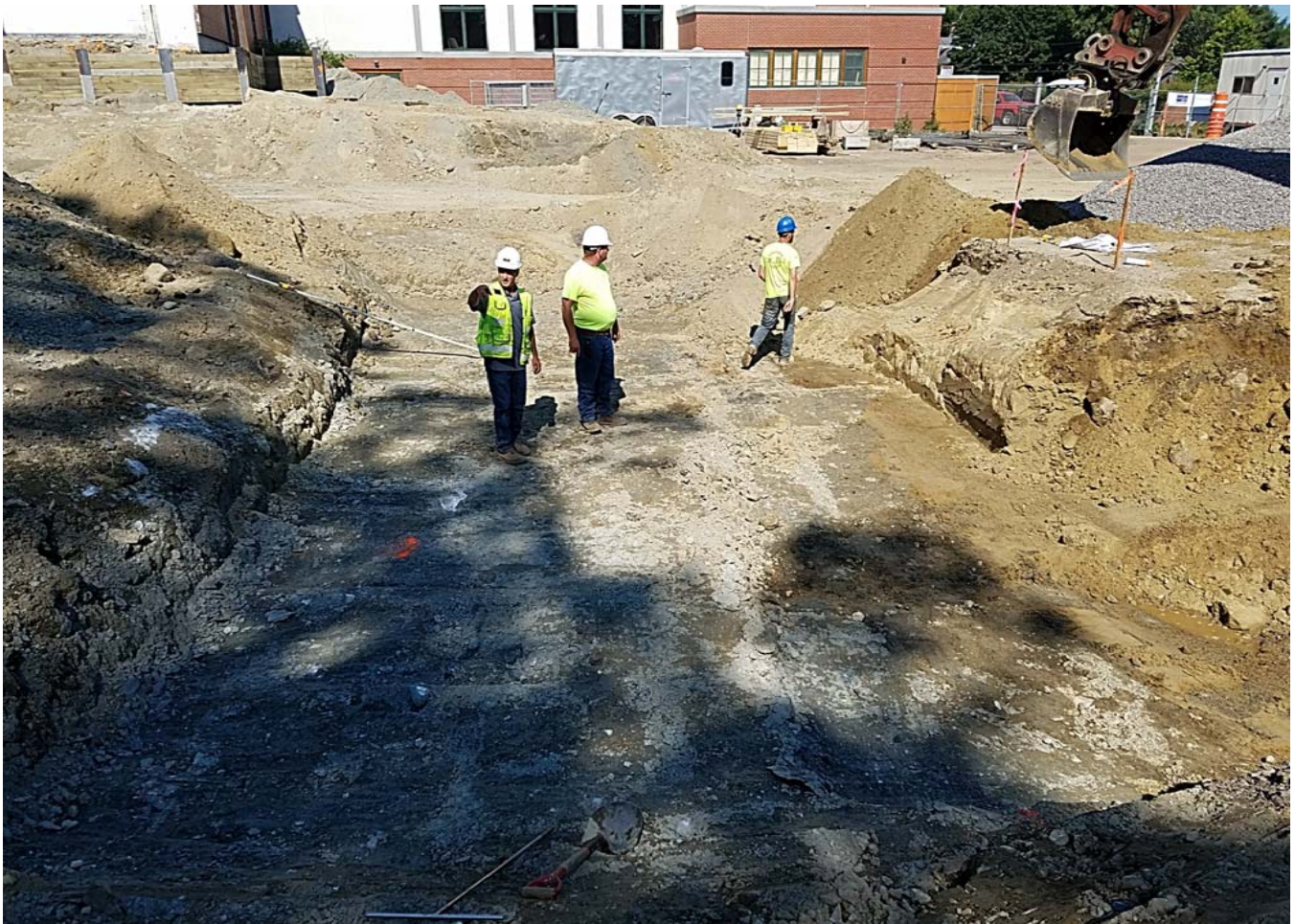
The subgrade observed on 8-3-17 had been covered with geotextile fabric and crushed stone. The crushed stone had not been graded and compacted yet. We understand EE will continue excavating toward G-Line and that WR will contact us to observe the exposed subgrade when ready.

Weather: Sun 80's on 8-3-17 and 8-4-17

Attachments: Photos

Reviewed By:









Soil Observation Report

Project Name:	Waynflete/Lower School Replacement	Project No. :	15-0577.1
Location:	360 Spring St./Portland, Me	Date:	9-13-17
Client / Client's Rep:	Waynflete School/PML Project Management-Phil LaClaire	S.W.COLE Rep. :	PFK
Earthwork Contractor:	Eastern Excavation	Arrived on Site:	1:00 +/- pm
General Contractor:	Wright-Ryan/Millard	Left Site:	2:00 +/-pm

<u>Soil Observations</u>	<u>Observed</u>		<u>Comments</u>
Subgrade Preparation	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Fill Placement (method and uniformity)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A
Material (proper type, sample #)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A
Lift Thickness	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A
Compaction (equipment, passes)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A
*In-place Densities (frequency)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A

Non-Conformance Items (person notified) Yes No

*refer to associated report for in-situ density results

Observations / Discussions:

As scheduled by Millard Nadeau of Wright-Ryan Construction (WR), we made a visit to the site on 9-13-17. The purpose of our visit was to observe footing subgrade soils in certain areas of the site. Eastern Excavation (EE) project earthwork contractor, was on site at the time of our visit. We met with Millard and Tony from EE while on site.

The area observed today was the subgrade for the proposed northwesterly perimeter building foundation wall located general between 10 and 11 lines and between K and M-Lines. We understand the bottom of footing (BOF) grade in this area is 125'- 8" with a 24 inch deep keyway detailed below BOF.

Prior to our visit, EE had excavated reportedly to 6 inches below proposed bottom of footing (BOF) in the subject area, but had not excavated for the proposed keyway yet.

The exposed subgrade consisted of moist, very dense, very silty glacial till. Some ponded water was observed on the subgrade due some recent precipitation. No groundwater seepage was observed from the adjacent cut slope on the northerly side. We recommended the ponded water and any loose or disturbed soils be removed prior to placing any fabric, fill or concrete.

The soil observed at subgrade in this area is consistent with the findings at the test boring explorations made during our geotechnical investigation in September 2015 and appears suitable for foundation support. .We understand EE is planning to place geotextile fabric and a few inches of crushed stone beneath the footings in this area with the exception of the keyway which will not have geotextile fabric and crushed stone. We understand Millard will discuss any additional subgrade prep requirements relative to the keyway with a representative from Becker Structural Engineers who is reportedly visiting the site later today.

Weather: Sun 70's

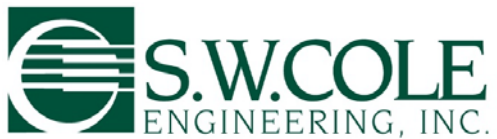
Attachments: Photos

Reviewed By:

The S.W. COLE field representative is on-site at the request of our client to provide construction materials testing and to observe and document construction activities. The contractor has sole responsibility for schedule, site safety, methods, completeness and quality control.







Construction Observation Report

Project Name:	Waynflete/Lower School Replacement	Project No. :	15-0577.1
Location:	360 Spring St./Portland, ME	Date:	10-12-17
Client:	Waynflete School	S.W.COLE Rep. :	PFK
Client's Rep.:	PML Project Management – Phil LaClaire	Arrived on Site:	2:30 +/- pm
Contractor:	Wright-Ryan/Millard	Left Site:	3:15 +/-pm

General Observations and Discussions:

As scheduled by Millard Nadeau of Wright-Ryan Construction (WR), we made site visit on 10-12-17. We met with Millard while on site. The purpose of our visit was to observe footing subgrade soils in certain areas of the site. Eastern Excavation (EEI), project earthwork contractor, was on site at the time of our visit. Concrete for certain foundation areas was being placed at the time of our visit and an S.W.COLE technician was on site.

The areas observed today were the subgrades for the proposed interior column footings at L/10.2, K/9 and L/8. We understand the bottom of footing (BOF) elevation in this area is 125'- 8".

Prior to our visit, EEI had excavated reportedly to 3+/- inches below BOF at the 3 observed footing locations. The 3 footing areas were already formed with reinforcing steel placed, and about 2 to 3 inches of Crushed Stone was observed overlying the native soil subgrade. We removed the Crushed Stone in a few areas at each footing and observed the native dense gray glacial till soil below. We also used a hand probe in several areas of each footing with no penetration into the dense glacial till. The subgrades were moist and no free water was observed. The native dense glacial till observed below the Crushed Stone and in the excavation sidewalls just outside the footing forms is consistent with the findings at the test boring explorations made during our geotechnical investigation in September 2015 and appears suitable for foundation support. These 3 footings were scheduled to be have concrete placed later today.

While on site, we also observed water in the un-backfilled foundation area at approximately D/4. We recommended the water be removed and any loose or disturbed soil be removed prior to placing foundation backfill.

We understand WR will contact us to observe subgrade for the wall line 2 between A and D, when ready.

Weather: Sun 65 deg

Attachments: Photos

Reviewed by: EMW

The S.W. COLE field representative is on-site at the request of our client to provide construction materials testing and to observe and document construction activities. The contractor has sole responsibility for schedule, site safety, methods, completeness and quality control.







Section B: 03300



Project:	Waynflete Lower School
Location:	Portland, ME
Becker Job No:	3660.90

OBSERVATION REPORT

Cast in Place Concrete

Date:	8/16/17
Time:	9:00 AM
Temp:	75F
Weather:	Sunny

Observation Location:

Wall footings:
 Building frost wall footings and exterior slab frost wall footings vicinity of D3 proceeding east to vicinity of G4. Retaining wall footings at Sills exterior stairs.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Placement	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Horizontal footing bars at Sills stair retaining walls not placed at time of inspection. Discussed placement with concrete foreman. Bar to be installed prior to placement. Requested photos of completed work from Superintendent.
Embed/Anchors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lap Splices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Several areas of insufficient bottom cover with stone in contact with rebar. Discussed issue with concrete foreman. Issue was known and concrete crew scheduled to perform walk-through and correct all areas prior to placement.
Additional Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See below

Notes:

Observed shoring in process. Noted incorrect washers at tie backs and footing bolts at soldier piles. Bolts at piles observed to have standard washers, should be plate washers 3/4x4x4 (ref SKS-1 and approved shoring submittal). Washers at tie backs appeared to be 4x4 washers and should be 3/4x6x6 (ref 1/S2.4 and approved shoring submittal). Also noted walers parallel to long axis of Sills hall appeared

to be in conflict with retaining walls in 2 of 3 shoring bays. Issue was known to superintendent and in discussion with HB Fleming.

Discussed all of the above with Millard Nedeau - Project Superintendent.

Signed: Dan Burne, P.E.

Project:	Waynflete Lower School
Location:	Portland, ME
Becker Job No:	3660.90

OBSERVATION REPORT

Cast in Place Concrete

Date:	08/22/17
Time:	2:00 AM
Temp:	80F
Weather:	Sunny

Observation Location:

Foundation wall reinforcement:
 Exterior frost walls in vicinity of D3 proceeding east to vicinity of G4.
 Pier reinforcement: D4, E4, E1, F1, G1, G3

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Placement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Embed/Anchors	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Anchors at D4 & E3 not yet installed at time of visit.
Lap Splices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Additional wall reinforcement around wall penetrations were not installed per typical detail on S2.1. Reviewed w/ Superintendent.
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Notes:

Shoring issues observed in previous inspection appear to have be corrected.

Discussed all of the above with Chris Allain - Project Superintendent covering for Millard Nadeau.

Signed: Alexander R. Wheelock, E.I.

Project:	Waynflete Lower School
Location:	Portland, ME
Becker Job No:	3660.90

OBSERVATION REPORT

Cast in Place Concrete

Date:	08/29/17
Time:	11:00 AM
Temp:	66F
Weather:	Cloudy

Observation Location:

Footing reinforcement at elevator pit and adjacent isolated footings at F.9/8 & Q9.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Placement	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See below
Embed/Anchors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Lap Splices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Notes:

Vertical wall and pier rebar was not installed at the time of the visit. Reviewed vertical rebar locations with rebar sub and project superintendent. Vertical wall dowels along sills side to extent to bottom of footing/below sump pit along elevator wall extents.

Discussed all of the above with Superintendent Millard Nadeau. Millard to send photos of vertical wall/pier dowels prior to placement.

Signed: Alexander R. Wheelock, E.I.

Project:	Waynflete Lower School
Location:	Portland, ME
Becker Job No:	3660.90

OBSERVATION REPORT

Cast in Place Concrete

Date:	08/31/17
Time:	11:00 AM
Temp:	75F
Weather:	Cloudy

Observation Location:

Wall reinforcement at elevator pit and adjacent isolated piers at F.9/8 & Q9.
 Footing reinforcement from approximately M11-R11, R11-R10, H7-H5.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Placement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Embed/Anchors	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Pier AB not installed at time of the visit
Lap Splices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See below
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Notes:

While on site I discussed/reviewed all of the following with Superintendent Millard Nadeau (GC). Per shoring design submittal (2)1"Øbolts w/ 3/4"x4x4 washers to be attached to each soldier pile and embedded into concrete footing 12". Per SKS-1 (2)#6 horizontal bars continuous at bolts. When I arrived #6 were tied to bolts but plate washers were not extended into footing. Instructed GC/Sub to pull plates out into footing as shown in shoring design and SKS-1 while keeping nut fully threaded on bolt. Bolts appeared to extend 10" into footing instead of 12" as per design. I notified GC to review w/ H.B. Fleming for their approval prior to placement and send documentation. A representative from H.B. Fleming came onsite to review and "hammer" the rods to ensure tight to soldier pile. Additionally I instructed GC/Sub to move construction joints away from shoring bolts in footing and soil anchors in elevator wall. Also discussed adding coupler nuts to soil anchors to extend wall plates into center of wall reinforcement. Since the site visit approval documentation from H.B. Fleming for 10" embed has been received.

Signed: Alexander R. Wheelock, E.I.

Project:	Waynflete Lower School
Location:	Portland, ME
Becker Job No:	3660.90

OBSERVATION REPORT

Cast in Place Concrete

Date:	09/13/17 & 09/14/17
Time:	2:00 PM & 4:00 PM
Temp:	75F
Weather:	Cloudy

Observation Location:

Wall reinforcement along H line from 5 line to 11 line. Wall construction is ongoing.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Placement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Embed/Anchors	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Lap Splices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See below
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Notes:

Wall construction of H and 11 lines is ongoing. Site visit was performed to review H line wall reinforcing steel before wall forms were in place. A follow up visit will be performed to review additional horizontal steel at top of the wall, embed/anchors and small wall reinforcement that ties to the existing building along 5 line.

While on site I discussed/reviewed the following with Superintendent Millard Nadeau (GC):

- At the small frost wall along 5 line it is okay to be placed over the lagging. Also, that the epoxy dowels into existing sills all only required above lagging.
- Shoring soil anchors were extended with mechanical couplers (by HB Fleming) along H line so shoring plates were located centered in the wall.
- At shoring that extends beyond retaining near H line. Noticed there was a gap between the whaler planks and soil behind. Planks were loose in some locations. Millard advised that HB Fleming would be back to drill and install flowable fill behind the shoring.
- At retaining wall near H line reviewed note for grout cleaned finish and plugged form ties. Plugged form ties were not installed.

Signed: Alexander R. Wheelock, E.I.

Project:	Waynflete Lower School
Location:	Portland, ME
Becker Job No:	3660.90

OBSERVATION REPORT

Cast in Place Concrete

Date:	09/19/17
Time:	10:00AM
Temp:	68 F
Weather:	Overcast

Observation Location:

Footing reinforcement from N11 to A6.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Placement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Embed/Anchors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Lap Splices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Notes:

In addition to foundation review Dan Burne and I were on site to review Founder's Hall SKS drawings with Millard Nadeau and answer any questions.

Signed: Alexander R. Wheelock, E.I.

Project:	Waynflete Lower School
Location:	Portland, ME
Becker Job No:	3660.90

OBSERVATION REPORT

Cast in Place Concrete

Date:	09/29/17
Time:	9:00AM
Temp:	60 F
Weather:	Clear

Observation Location:

Wall reinforcement from N11 to A6.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Placement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Embed/Anchors	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Threaded inserts for masonry rebar at J line were not yet installed.
Lap Splices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Notes:

Wall construction of N11 to A6 is ongoing. Site visit was performed to review wall reinforcing steel before wall forms were in place. A follow up visit will be performed to review additional horizontal steel at top of the wall, and embed/anchors. I reviewed the above items with Superintendent Millard Nadeau. In addition to foundation review I was on site to review Founder's Hall drawings with Millard Nadeau. In particular reviewed holdown locations and attachments as the rubble walls were in the process of being exposed.

Signed: Alexander R. Wheelock, E.I.

Project:	Waynflete Lower School
Location:	Portland, ME
Becker Job No:	3660.90

OBSERVATION REPORT

Cast in Place Concrete

Date:	10/10/17
Time:	1:00AM
Temp:	75 F
Weather:	Partly Cloudy

Observation Location:

Isolated footing reinforcement F5, F7, F8, N8, P10. Wall footing reinforcement along R line.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Placement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Embed/Anchors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lap Splices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See below
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Notes:

Threaded inserts for masonry rebar at J line were not installed, instead #6 rebar was cast into foundation wall at each side of opening. The rebar extends into opening approximately 2'-0". The specification for the inserts and need for them was discussed with Wright-Ryan in a June email, identified on wall rebar shops, marked up on CMU shops and discussed during the 9/29 site visit when it was observed that they were missing. Fix for the condition is as follows: Install mechanical couplers at each cast in place #6 rebar (12 total). Install new #6 bars into each coupler to provide 80db (5'-0") lap (12 bars total).

Embedded angle at top of wall from R11 to N11 was placed approximately 3 1/2" too low. Weld new HSS3-1/2x2-1/2x1/4 to cast in place L4x4X1/4 for deck support with flare bevel weld 2" at 12" staggered each side.

In addition to foundation review I was on site to review Founder's Hall drawings with Millard Nadeau. In particular I reviewed steel details with existing conditions.

Signed: Alexander R. Wheelock, E.I.

Project:	Waynflete Lower School
Location:	Portland, ME
Becker Job No:	3660.90

OBSERVATION REPORT

Cast in Place Concrete

Date:	10/16/17
Time:	3:00 PM
Temp:	65 F
Weather:	Partly Cloudy

Observation Location:

Wall reinforcement along A line.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Placement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Embed/Anchors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Lap Splices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Notes:

Wall construction of A line is ongoing. Site visit was performed to review wall reinforcing steel before wall forms were in place. A follow up visit will be performed to review additional steel placement.

Item from last field report: mechanical couplers were in the process of being installed at J line opening. Additional #6 bars were not yet installed in couplers.

In addition to foundation review I was on site to review Founder's Hall drawings with Millard Nadeau. In particular I reviewed basement posts on existing foundation conditions.

Signed: Alexander R. Wheelock, E.I.

Project:	Waynflete Lower School
Location:	Portland, ME
Becker Job No:	3660.90

OBSERVATION REPORT

Cast in Place Concrete

Date:	10/27/17
Time:	10:30 AM
Temp:	60 F
Weather:	Sunny

Observation Location:

Parallel frost walls vicinity of A3-D2.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Placement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Embed/Anchors	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Lap Splices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

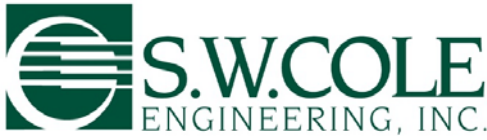
Notes:

Discussed with Millard Nadeau (WR) two areas not yet complete: Diagonal rebar needed at areas of two piping penetrations per typical detail and column anchor bolts not yet installed.

While on site walked through Founders with Jason Drouin (WR) and discussed the following:

- Beam/post details B&C on SKS 2 cannot be installed as detailed due to the misalignment of existing components. The notch shown in section B cannot be cut without cutting into a new LVL beam. We discussed installing a new 1 3/4" LVL ply alongside the post in lieu of the 2" notch. LVL ply is to bear on the steel beam below and be fastened with (2) RSS screws at 6" o.c. for the length.
- Discussed two locations in the basement where load bearing postst overhang the foundation walls due to misalignment of existing components. Discussed attaching a vertical piece of LVL below the overhanging portion and securing with Tapcon anchors into the concrete / masonry.

Signed: Dan Burne, P.E.



Concrete Construction Observation Report

Project Name:	<u>Waynflete Lower School Addition</u>	Project No. :	<u>15-0577.1</u>
Location:	<u>Portland, ME</u>	Date:	<u>8-16-17</u>
Client / Client's Rep:	<u>Waynflete School / Phil LaClaire</u>	S.W.COLE Rep. :	<u>A. Boyce</u>
Placement Location:	<u>Line 1 & 2 Frost & Retaining wall</u>	Arrived on Site:	<u>11:15a</u>
Placement Type:	<u>Concrete</u>	Left Site:	<u>1:00p</u>

<u>Pre-Placement Observations</u>	<u>In Compliance</u>		
Bar size and location (diameter, length, bend and coverage)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u>By Others</u>
Splicing (type, overlap)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u></u>
Stability (wiring, chairs, spacers)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u></u>
Reinforcement conditions (cleanliness, temperature, etc.)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u></u>
Embedments and anchor bolts installed	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u></u>
Soil subgrade prepared in accordance with project specifications	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u></u>

<u>Referenced Drawings</u>	<u>Date</u>	<u>Page(s)</u>	<u>Rev.</u>	<u>Bar Reinforcing Grade & Type</u>
				ASTM:
				GRADE:

<u>Concrete Placement Observations</u>	<u>In Compliance</u>		<u>Comments</u>
Required mix used	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<u>3500 Psi W/Air</u>
Concrete properly conveyed to all areas of placement	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<u>Pump</u>
Internal vibration / consolidation of concrete	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<u>Mechanically</u>
Even layering around openings and embedments	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u>N/A</u>
Post placement observations (finishing, curing, etc.)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u>N/A</u>

Field Testing of Concrete Performed Yes No
 CYLINDER SET NO: 959 – 1 ← refer to associated concrete test report

Non-Conformance Items (person notified) Yes No

Notes:

S.W COLE was onsite to perform concrete field testing. The 3500psi concrete supplied by Hissong contained an air entrainment and a mid-range water reducer. A mid-load sample was taken off the 2 load and one set of four test specimens were cast for laboratory compression testing at a later date before S.W. COLE's departure. Hissong Q.C. (Tom) was on-site to adjust loads accordingly, results were verbally reported to Hissong Q.C. and Wright Ryan rep.

Attachments: NONE

Reviewed by: 

The S.W. COLE field representative is on-site at the request of our client to provide construction materials testing and to observe and document construction activities. The contractor has sole responsibility for schedule, site safety, methods, completeness and quality control.



Concrete Construction Observation Report

Project Name:	<u>Waynflete Lower School Addition</u>	Project No. :	<u>15-0577.1</u>
Location:	<u>Portland, ME</u>	Date:	<u>8-28-17</u>
Client / Client's Rep:	<u>Waynflete School / Phil LaClaire</u>	S.W.COLE Rep. :	<u>A. Boyce</u>
Placement Location:	<u>Inner Frost wall Line 1 & 2</u>	Arrived on Site:	<u>12:00p</u>
Placement Type:	<u>Concrete</u>	Left Site:	<u>2:00p</u>

<u>Pre-Placement Observations</u>	<u>In Compliance</u>		
Bar size and location (diameter, length, bend and coverage)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u>By Others</u>
Splicing (type, overlap)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u></u>
Stability (wiring, chairs, spacers)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u></u>
Reinforcement conditions (cleanliness, temperature, etc.)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u></u>
Embedments and anchor bolts installed	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u></u>
Soil subgrade prepared in accordance with project specifications	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u></u>

<u>Referenced Drawings</u>	<u>Date</u>	<u>Page(s)</u>	<u>Rev.</u>	<u>Bar Reinforcing Grade & Type</u>
				ASTM:
				GRADE:

<u>Concrete Placement Observations</u>	<u>In Compliance</u>		<u>Comments</u>
Required mix used	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<u>3500 Psi W/Air</u>
Concrete properly conveyed to all areas of placement	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<u>Tailgate</u>
Internal vibration / consolidation of concrete	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<u>Mechanically</u>
Even layering around openings and embedments	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u>N/A</u>
Post placement observations (finishing, curing, etc.)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u>N/A</u>

Field Testing of Concrete Performed Yes No
 *CYLINDER SET NO: 959 – 3 ←*refer to associated concrete test report

Non-Conformance Items (person notified) Yes No

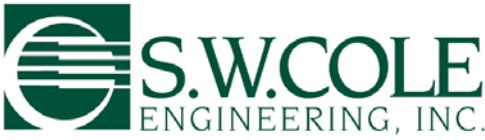
Notes:

S.W COLE was onsite to perform concrete field testing. The 3500psi concrete supplied by Hissong contained an air entrainment and a mid-range water reducer. Upon the arrival of the first load the batch ticket had a time of 11:11am and the time it arrived was 12:40pm. Wright-Ryan rep. was notified that about the time stamp, they in turn called Hissong's plant. Hissong explained that their batch time clock was an hour behind the real time, as such the actually batch time of the first load was 12:11pm and not 11:11am. A mid-load sample was taken off the 1st load and one set of four test specimens were cast for laboratory compression testing at a later date before S.W. COLE's departure. Results were verbally reported to Wright-Ryan rep.

Attachments: NONE

Reviewed by: 

The S.W. COLE field representative is on-site at the request of our client to provide construction materials testing and to observe and document construction activities. The contractor has sole responsibility for schedule, site safety, methods, completeness and quality control.



Concrete Construction Observation Report

Project Name: Waynflete Lower School Addition **Project No. :** 15-0577.1
Location: Portland, ME **Date:** 9-11-17
Client / Client's Rep: Waynflete School / Phil LaClaire **S.W.COLE Rep. :** A. Boyce
Placement Location: Retaining Wall Southside **Arrived on Site:** 10:00a
Placement Type: Concrete **Left Site:** 12:15p

<u>Pre-Placement Observations</u>	<u>In Compliance</u>		
Bar size and location (diameter, length, bend and coverage)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	By Others _____
Splicing (type, overlap)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Stability (wiring, chairs, spacers)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Reinforcement conditions (cleanliness, temperature, etc.)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Embedments and anchor bolts installed	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Soil subgrade prepared in accordance with project specifications	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____

<u>Referenced Drawings</u>	<u>Date</u>	<u>Page(s)</u>	<u>Rev.</u>	<u>Bar Reinforcing Grade & Type</u>
				ASTM:
				GRADE:

<u>Concrete Placement Observations</u>	<u>In Compliance</u>		<u>Comments</u>
Required mix used	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	3500 Psi W/Air
Concrete properly conveyed to all areas of placement	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Pump
Internal vibration / consolidation of concrete	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Mechanically
Even layering around openings and embedments	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A
Post placement observations (finishing, curing, etc.)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A

Field Testing of Concrete Performed Yes No
 *CYLINDER SET NO: 959 – 5 ←*refer to associated concrete test report

Non-Conformance Items (person notified) Yes No

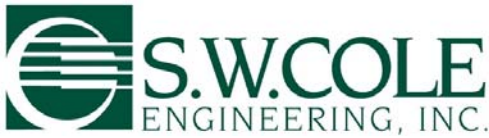
Notes:

S.W COLE was onsite to perform concrete field testing. The 3500psi concrete supplied by Hissong contained an air entrainment and a mid-range water reducer. A mid-load sample was taken off the 1st load and one set of four test specimens were cast for laboratory compression testing at a later date before S.W. COLE's departure. Results were verbally reported to Wright-Ryan rep. and Hissong Q.C (Phil).

Attachments: NONE

Reviewed by: Robert E. Donney

The S.W. COLE field representative is on-site at the request of our client to provide construction materials testing and to observe and document construction activities. The contractor has sole responsibility for schedule, site safety, methods, completeness and quality control.



Concrete Construction Observation Report

Project Name:	<u>Waynflete Lower School Addition</u>	Project No. :	<u>15-0577.1</u>
Location:	<u>Portland, ME</u>	Date:	<u>9-27-17</u>
Client / Client's Rep:	<u>Waynflete School / Phil LaClaire</u>	S.W.COLE Rep. :	<u>F. Clark</u>
Placement Location:	<u>Wall-line H, 5 to 11 and line 11, H to N</u>	Arrived on Site:	<u>11:30am</u>
Placement Type:	<u>Concrete</u>	Left Site:	<u>2:45pm</u>

<u>Pre-Placement Observations</u>	<u>In Compliance</u>		
Bar size and location (diameter, length, bend and coverage)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u>By Others</u>
Splicing (type, overlap)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u></u>
Stability (wiring, chairs, spacers)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u></u>
Reinforcement conditions (cleanliness, temperature, etc.)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u></u>
Embedments and anchor bolts installed	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u></u>
Soil subgrade prepared in accordance with project specifications	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u></u>

<u>Referenced Drawings</u>	<u>Date</u>	<u>Page(s)</u>	<u>Rev.</u>	<u>Bar Reinforcing Grade & Type</u>
				<u>ASTM:</u>
				<u>GRADE:</u>

<u>Concrete Placement Observations</u>	<u>In Compliance</u>		<u>Comments</u>
Required mix used	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<u>3500 Psi W/Air</u>
Concrete properly conveyed to all areas of placement	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<u>Pump</u>
Internal vibration / consolidation of concrete	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<u>Mechanically</u>
Even layering around openings and embedments	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u>N/A</u>
Post placement observations (finishing, curing, etc.)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<u>N/A</u>

Field Testing of Concrete Performed Yes No
 CYLINDER SET NO: 959 – 6 ← refer to associated concrete test report

Non-Conformance Items (person notified) Yes No

Notes:

S.W. Cole Engineering technician Frank Clark was onsite to perform concrete testing for slump, air content, temperature and to cast cylinders for strength testing. All concrete was supplied by Hissong with a mix design of ¾" aggregate and a design strength of 3500 psi. and contained an air entrainment and a mid-range water reducer added during the batching process. A mid-load sample was taken off the 3rd load and one set of four test specimens were cast for laboratory compression testing at a later date. Results were verbally reported to Wright-Ryan rep. Test results met project specifications.

Attachments: NONE

Reviewed by: Darrell A. Gilman

The S.W. COLE field representative is on-site at the request of our client to provide construction materials testing and to observe and document construction activities. The contractor has sole responsibility for schedule, site safety, methods, completeness and quality control.



Concrete Construction Observation Report

Project Name:	Waynflete Lower School Addition	Project No. :	15-0577.1
Location:	Portland, ME	Date:	10-5-17
Client / Client's Rep:	Waynflete School / Phil LaClaire	S.W.COLE Rep. :	A. Boyce
Placement Location:	Wall: N/11 – J/10	Arrived on Site:	12:30p
Placement Type:	Concrete	Left Site:	5:00p

<u>Pre-Placement Observations</u>	<u>In Compliance</u>		
Bar size and location (diameter, length, bend and coverage)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	By Others _____
Splicing (type, overlap)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Stability (wiring, chairs, spacers)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Reinforcement conditions (cleanliness, temperature, etc.)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Embedments and anchor bolts installed	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Soil subgrade prepared in accordance with project specifications	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____

Referenced Drawings	Date	Page(s)	Rev.	Bar Reinforcing Grade & Type
				ASTM:
				GRADE:

<u>Concrete Placement Observations</u>	<u>In Compliance</u>		<u>Comments</u>
Required mix used	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	3500 Psi W/Air
Concrete properly conveyed to all areas of placement	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Pump
Internal vibration / consolidation of concrete	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Mechanically
Even layering around openings and embedments	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A
Post placement observations (finishing, curing, etc.)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A

Field Testing of Concrete Performed Yes No
 *CYLINDER SET NO: 959 – 9 & 10 ←*refer to associated concrete test report

Non-Conformance Items (person notified) Yes No

Notes:

S.W COLE was onsite to perform concrete field testing. The 3500psi concrete supplied by Hissong contained an air entrainment and a mid-range water reducer. A mid-load sample was taken off the 1st & 6th loads and two sets of four test specimens were cast for laboratory compression testing at a later date before S.W. COLE's departure. Results were verbally reported to Hissong Q.C (Tom Powers).

Attachments: NONE

Reviewed by: *Roger E. Domany*

The S.W. COLE field representative is on-site at the request of our client to provide construction materials testing and to observe and document construction activities. The contractor has sole responsibility for schedule, site safety, methods, completeness and quality control.



Concrete Construction Observation Report

Project Name:	Waynflete Lower School Addition	Project No. :	15-0577.1
Location:	Portland, ME	Date:	10-12-17
Client / Client's Rep:	Waynflete School / Phil LaClaire	S.W.COLE Rep. :	A. Boyce
Placement Location:	Footings: A/6 – A/2, L/10, L/8	Arrived on Site:	1:30p
Placement Type:	Concrete	Left Site:	3:30p

<u>Pre-Placement Observations</u>	<u>In Compliance</u>		
Bar size and location (diameter, length, bend and coverage)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	By Others _____
Splicing (type, overlap)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Stability (wiring, chairs, spacers)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Reinforcement conditions (cleanliness, temperature, etc.)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Embedments and anchor bolts installed	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Soil subgrade prepared in accordance with project specifications	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____

Referenced Drawings	Date	Page(s)	Rev.	Bar Reinforcing Grade & Type
				ASTM:
				GRADE:

<u>Concrete Placement Observations</u>	<u>In Compliance</u>		<u>Comments</u>
Required mix used	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	3500 Psi W/Air
Concrete properly conveyed to all areas of placement	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Tailgate
Internal vibration / consolidation of concrete	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Mechanically
Even layering around openings and embedments	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A
Post placement observations (finishing, curing, etc.)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A

Field Testing of Concrete Performed Yes No
 *CYLINDER SET NO: 959 – 11 ←*refer to associated concrete test report

Non-Conformance Items (person notified) Yes No

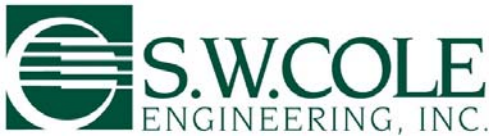
Notes:

S.W COLE was onsite to perform concrete field testing. The 3500psi concrete supplied by Hissong contained an air entrainment and a mid-range water reducer. A mid-load sample was taken off the 1st load and one set of four test specimens were cast for laboratory compression testing at a later date before S.W. COLE's departure.

Attachments: NONE

Reviewed by: 

The S.W. COLE field representative is on-site at the request of our client to provide construction materials testing and to observe and document construction activities. The contractor has sole responsibility for schedule, site safety, methods, completeness and quality control.



Concrete Construction Observation Report

Project Name:	Waynflete Lower School Addition	Project No. :	15-0577.1
Location:	Portland, ME	Date:	12-19-17
Client / Client's Rep:	Waynflete School / Phil LaClaire	S.W. COLE Rep. :	A. Boyce
Placement Location:	Interior Slab on Deck: Lower Level	Arrived on Site:	7:30a
Placement Type:	Concrete	Left Site:	11:30a

<u>Pre-Placement Observations</u>	<u>In Compliance</u>	<u>By Others</u>
Bar size and location (diameter, length, bend and coverage)	Yes <input type="checkbox"/> No <input type="checkbox"/>	_____
Splicing (type, overlap)	Yes <input type="checkbox"/> No <input type="checkbox"/>	_____
Stability (wiring, chairs, spacers)	Yes <input type="checkbox"/> No <input type="checkbox"/>	_____
Reinforcement conditions (cleanliness, temperature, etc.)	Yes <input type="checkbox"/> No <input type="checkbox"/>	_____
Embedments and anchor bolts installed	Yes <input type="checkbox"/> No <input type="checkbox"/>	_____
Soil subgrade prepared in accordance with project specifications	Yes <input type="checkbox"/> No <input type="checkbox"/>	_____

Referenced Drawings	Date	Page(s)	Rev.	Bar Reinforcing Grade & Type
				ASTM:
				GRADE:

<u>Concrete Placement Observations</u>	<u>In Compliance</u>	<u>Comments</u>
Required mix used	Yes <input type="checkbox"/> No <input type="checkbox"/>	3000 Psi design w/ no air added
Concrete properly conveyed to all areas of placement	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Pump
Internal vibration / consolidation of concrete	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Mechanical Screed
Even layering around openings and embedments	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Post placement observations (finishing, curing, etc.)	Yes <input type="checkbox"/> No <input type="checkbox"/>	N/A

Field Testing of Concrete Performed Yes No

*CYLINDER SET NO: 959 – 13,14 ←*refer to associated concrete test report

Non-Conformance Items (person notified) Yes No

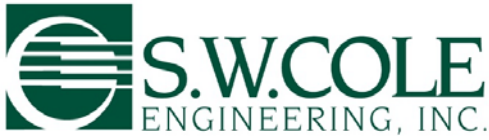
Notes:

S.W COLE was onsite to perform concrete field testing. The 3000psi concrete supplied by Hissong contained 2% Masterset and a mid-range water reducer. A mid-load sample was taken off the 1st and 6th load and two sets of four test specimens were cast for laboratory compression testing at a later date before S.W. COLE's departure. Samples for field testing were obtained from truck discharge rather than point of placement due to limited access. A. P. Phinney Concrete placed and finished the concrete. All test results were verbally reported to Wight Ryan rep. (Millard).

Attachments: NONE

Reviewed by: _____

The S.W. COLE field representative is on-site at the request of our client to provide construction materials testing and to observe and document construction activities. The contractor has sole responsibility for schedule, site safety, methods, completeness and quality control.



Concrete Construction Observation Report

Project Name:	Waynflete Lower School Addition	Project No. :	15-0577.1
Location:	Portland, ME	Date:	12-27-17
Client / Client's Rep:	Waynflete School / Phil LaClaire	S.W.COLE Rep. :	A. Boyce
Placement Location:	Interior Slab on Grade: Ground Level	Arrived on Site:	7:15a
Placement Type:	Concrete	Left Site:	11:45a

<u>Pre-Placement Observations</u>	<u>In Compliance</u>		
Bar size and location (diameter, length, bend and coverage)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	By Others _____
Splicing (type, overlap)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Stability (wiring, chairs, spacers)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Reinforcement conditions (cleanliness, temperature, etc.)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Embedments and anchor bolts installed	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Soil subgrade prepared in accordance with project specifications	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____

Referenced Drawings	Date	Page(s)	Rev.	Bar Reinforcing Grade & Type
				ASTM:
				GRADE:

<u>Concrete Placement Observations</u>	<u>In Compliance</u>		<u>Comments</u>
Required mix used	Yes <input type="checkbox"/>	No <input type="checkbox"/>	3000 Psi design w/ no air added
Concrete properly conveyed to all areas of placement	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Pump
Internal vibration / consolidation of concrete	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Mechanical Screed
Even layering around openings and embedments	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Post placement observations (finishing, curing, etc.)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A

Field Testing of Concrete Performed Yes No
 *CYLINDER SET NO: 959 – 15,16 ←*refer to associated concrete test report

Non-Conformance Items (person notified) Yes No

Notes:

S.W COLE was onsite to perform concrete field testing. The 3000psi concrete supplied by Hissong contained 2% Masterset and a mid-range water reducer. A mid-load sample was taken off the 4th and 7th loads and two sets of four test specimens were cast for laboratory compression testing at a later date before S.W. COLE's departure. Samples for field testing were obtained from truck discharge rather than point of placement due to limited access, however, a companion sample obtained from the point of placement indicated no slump loss though the pump line. A. P. Phinney Concrete placed and finished the concrete. All test results were verbally reported to Wright Ryan rep. (Millard).

Attachments: NONE

Reviewed by: 

The S.W. COLE field representative is on-site at the request of our client to provide construction materials testing and to observe and document construction activities. The contractor has sole responsibility for schedule, site safety, methods, completeness and quality control.



Concrete Construction Observation Report

Project Name:	Waynflete Lower School Addition	Project No. :	15-0577.1
Location:	Portland, ME	Date:	1-10-18
Client / Client's Rep:	Waynflete School / Phil LaClaire	S.W.COLE Rep. :	A. Boyce
Placement Location:	Interior Slab on Deck: Upper Level	Arrived on Site:	7:15a
Placement Type:	Concrete	Left Site:	10:15a

<u>Pre-Placement Observations</u>	<u>In Compliance</u>		
Bar size and location (diameter, length, bend and coverage)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	By Others _____
Splicing (type, overlap)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Stability (wiring, chairs, spacers)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Reinforcement conditions (cleanliness, temperature, etc.)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Embedments and anchor bolts installed	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____
Soil subgrade prepared in accordance with project specifications	Yes <input type="checkbox"/>	No <input type="checkbox"/>	_____

Referenced Drawings	Date	Page(s)	Rev.	Bar Reinforcing Grade & Type
				ASTM:
				GRADE:

<u>Concrete Placement Observations</u>	<u>In Compliance</u>		<u>Comments</u>
Required mix used	Yes <input type="checkbox"/>	No <input type="checkbox"/>	3000 Psi design w/ no air added
Concrete properly conveyed to all areas of placement	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Pump
Internal vibration / consolidation of concrete	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Mechanical Screed
Even layering around openings and embedments	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Post placement observations (finishing, curing, etc.)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A

Field Testing of Concrete Performed Yes No

*CYLINDER SET NO: 959 – 17 ←*refer to associated concrete test report

Non-Conformance Items (person notified) Yes No

Notes:

S.W COLE was onsite to perform concrete field testing. The 3000psi concrete supplied by Hissong contained 2% Masterset and a mid-range water reducer. A mid-load sample was taken off the 2nd load and one set of four test specimens were cast for laboratory compression testing at a later date before S.W. COLE's departure. Samples for field testing were obtained from truck discharge rather than point of placement due to limited access. A. P. Phinney Concrete placed and finished the concrete. All test results were verbally reported to Wright Ryan rep. (Millard) and Hissong Q.C. (Tom Powers).

Attachments: NONE

Reviewed by: 

The S.W. COLE field representative is on-site at the request of our client to provide construction materials testing and to observe and document construction activities. The contractor has sole responsibility for schedule, site safety, methods, completeness and quality control.

Project Name:	Waynflete/Lower School Replacement	Project No. :	15-0577.1
Location:	360 Spring St./Portland, ME	Date:	1-16-18
Client:	Waynflete School	S.W.COLE Rep. :	K. Gimpel
Client's Rep.:	PML Project Management – Phil LaClaire	Arrived on Site:	1:00pm
Contractor:	Wright-Ryan/Millard	Left Site:	2:00pm

General Observations and Discussions:

As requested by Scott Simons Architects and in coordination with Wright-Ryan Construction (Millard Nadeau) and Becker Structural Engineers (Dan Burne) we made a site visit to obtain shallow drilled cores from the main floor composite slab.

We understand the subject slab section consists of 2 inches of 3000psi design normal weight concrete overlying 1 ½ inch metal decking and is reinforced with 6 inch welded wire mesh. We understand it was placed and finished on 12/19/17 with ambient temperatures in the low 20's and temporary heat in the work area. We understand in some areas excess water from snow melt originating from outside the enclosure migrated onto the freshly placed slab surface during finishing. Following the initial curing, the insulation blankets were removed and areas exhibiting visual evidence of a compromised surface in the form of dusting and scaling were noted by several parties. Following discussions at the project team meetings it was agreed some degree of remedial work would likely be necessary prior to installing floor coverings, but that additional information was needed to determine affected depth.

It was determined that S.W. Cole Engineering should obtain drilled cores at representative locations to allow for visual assessment of the slab section. Upon arriving on site, we met with Millard, Phil LaClaire and Alex Wheelock (Becker) and obtained three shallow 2 inch diameter dry cut drilled cores at areas jointly selected by parties present with observations as follows:

Approximate Location	Comments
P(+5') / 10(+5')	Heavy dusting at surface extending about 1/16", sound underlying concrete
D(-7') / 4(+10')	Smooth uniform finish, no surficial defects noted, sound underlying concrete
F(+4') / 1(+10')	Surface texture 1/16", 1/32" or less dusting at surface, sound underlying concrete

Based on the observations made, it was agreed that surficial issues noted do not appear to extend to any significant depth and Wright-Ryan will work with their flooring subcontractor to perform remedial work as needed prior to installing flooring such that the substrate satisfies the product manufacturer's requirements as well as the project specifications for finish tolerances.

Attachments: None

Reviewed by: 



10 Danforth Street
Portland, ME 04101
Ph : (207) 773-3625

Submittal

Job: 171070
Waynflete Lower School
360 Spring Street
Portland, ME 04102

Spec Section No: 033000
Submittal No: 001
Revision No: 0
Sent Date: 6/26/2017

Spec Section Title: Cast-in-Place Concrete
Submittal Title: Concrete Mix Designs and Product Data

Contractor:
Wright-Ryan Construction, Inc.

Architect (Primary):
Scott Simons Architects
Austin Smith

SUBMITTAL REVIEW:
Reviewed for general conformance with the design concept and contract documents. Markings or comments shall not be construed as relieving the Subcontractor from compliance with the project plans and specifications, nor departure therefrom. The Subcontractor remains responsible for details and accuracy, for conforming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of assembly and for performing the work in a safe manner.
WRIGHT-RYAN CONSTRUCTION, INC
BY: Nick Barto DATE: 6/27/2017

Architect's Stamp

Engineer's Stamp

Reviewed Furnish as Corrected
 Rejected Revise and Resubmit
 Submit Specific Item

NO FIBER IN SLABS

This review is only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Corrections or comments made on the shop drawings during this review do not relieve contractor from compliance with the requirements of the plans and specifications. Approval of a specific item shall not include approval of an assembly of which the item is a component. Contractor is responsible for: dimensions to be confirmed and correlated at the jobsite; information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction; coordination of his or her Work with that of all other trades; and for performing all work in a safe and satisfactory manner.



**HISSONG READY-MIX
& AGGREGATES, LLC**

June 27, 2017

Wright-Ryan Construction
10 Danforth Street
Portland, Maine 04101

Re: Waynefleete Lower School Renovation and Addition - Portland, ME

Attached are the mix designs and material data that we propose for use at the above referenced project.

Our mix designs will meet the specified design strengths when tested and evaluated in accordance with current ASTM and ACI standards.

Please include us on the distribution list for any concrete test reports that are generated from this project. My e-mail address is pnunley@thehissonggroup.com.

If you have any questions regarding this submittal or require further assistance, I may be reached via cell phone at 207-229-9810.

Sincerely,

Phil Nunley

Philip Nunley
Vice-President, Ready-Mix Division
Hissong Ready-Mix & Aggregates, LLC



HISSONG READY-MIX & AGGREGATES, LLC

Concrete Mix Design

Date : **6/26/2017**

Contractor: **Wright-Ryan Construction**
Project: **Waynefleete Lower School Renovation and Addition**
Design: **3,500 psi 3/4"** Mix ID: **3543235A**
Mix Use: **Footings and Walls**

ASTM	Materials	Quantity	Density	Yield
C-150	Cement : Ciment Quebec Type II, lbs.	424	3.15	2.16
C-989	GGBF Slag: Dragon Grade 100, lbs.	106	2.81	0.60
C-33	Fine Aggregate, Portland S & G, lbs.	1278	2.59	7.91
C-33	3/8" Coarse Aggregate, Stonefield, lbs.	525	2.66	3.16
C-33	3/4" Coarse Aggregate, Stonefield, lbs.	1225	2.66	7.38
C-1602	Water, (gal.), lbs.	32.00 267	1.00	4.27
	Air Content, %	6.0		1.62
			Total:	27.10

ASTM	Admixtures	oz / c.w.	oz. /c.y.
C-260	Air-Entraining Agent, BASF AE-200	0.17	0.9
C-494 Type A and F	Mid-Range Water Reducer Dosage, BASF Glenium 7500	3.00	15.9

ASTM	Optional Admixture	oz / c.w.	oz. /c.y.
C-494 Type C and E	1% Non-Chloride Accelerator, BASF FP-20	10.00	53.0

Mix Properties: Maximum Slump : **6"** W/C Ratio: **0.50**
Air Content: **6.0 +/- 1.5 %** Design Density: **141.11**

Hissong Ready-Mix reserves the right to adjust admixture dosage rates, aggregate weights and aggregate blends to maintain the design parameters.

Prepared by: Philip Nunley

HISSONG READY-MIX & AGGREGATES
Compressive Strength Analysis
3,500 psi 3/4" with air
Mix ID: 3543235A

Sample Date	Air Temp (deg. F.)	Mix Temp (deg. F.)	Slump (inches)	Air Content (%)	7 Day Strength (psi)	28 Day Strength (psi)	28 Day Moving Avg.
12/21/2015	46	61	6.00	7.4	2820	3833	
1/12/2016	35	56	6.00	7.0	2580	3973	
7/26/2016	86	84	6.50	7.2	2350	3610	3805
7/28/2016	90	84	6.75	7.6	2300	3423	3669
7/29/2016	76	80	6.00	7.4	2720	3947	3660
8/2/2016	88	80	5.00	7.1	2810	3870	3747
8/3/2016	81	78	6.50	7.0	3140	4053	3957
8/8/2016	77	80	4.75	6.3	2530	4097	4007
8/9/2016	80	79	4.50	6.0	3430	4543	4231
8/11/2016	88	82	6.00	7.0	2540	3740	4127
9/22/2016	78	75	5.50	6.0	2540	3940	4074
9/27/2016	68	66	4.00	6.0	2800	4330	4003
9/27/2016	78	70	5.50	6.3	2530	3830	4033
9/30/2016	60	62	5.00	5.1	2950	4503	4221
9/30/2016	52	62	5.00	4.5	2480	3827	4053
9/30/2016	58	65	6.00	5.7	2500	3833	4054
10/10/2016	58	64	5.00	5.2	2950	3970	3877
12/1/2016	50	64	5.50	5.3	2550	4040	3948
12/6/2016	30	57	4.50	4.8	3420	4645	4218
12/8/2016	40	57	5.50	5.0	3270	4280	4322
12/14/2016	38	61	6.50	7.0	2850	3545	4157
12/21/2016	30	56	5.00	5.5	3040	4380	4068
12/22/2016	30	62	4.50	4.6	3000	4420	4115
12/28/2016	37	59	5.25	5.0	2720	3865	4222
12/29/2016	28	55	6.25	5.5	3340	4570	4285
1/11/2017	43	63	5.00	4.8	3260	4310	4248
1/12/2017	43	60	5.50	5.8	2960	4165	4348
1/12/2017	45	60	6.50	6.5	2920	3990	4155
1/19/2017	33	51	6.00	6.8	2790	3570	3908
1/19/2017	34	56	5.75	6.4	3040	4015	3858
Count	30	30	30	30	30	30	28
Average	56	66	6	6	2838	4037	4049
Std Deviation	21.3	10.1	0.7	0.9	314.7	321.4	189.6
Range	Min	51	4.00	4.5	2300	3423	3660
	Max	84	6.75	7.60	3430	4645	4348



HISSONG READY-MIX & AGGREGATES, LLC

Concrete Mix Design

Date : 6/26/2017

Contractor: **Wright-Ryan Construction**
 Project: **Waynefleete Lower School Renovation and Addition**
 Design: **3,000 psi 3/4"** Mix ID: **3042203N**
 Mix Use: **Interior Slabs**

ASTM	Materials	Quantity	Density	Yield
C-150	Cement : Ciment Quebec Type II, lbs.	540	3.15	2.75
C-33	Fine Aggregate, Portland Sand & Gravel, lbs.	1374	2.59	8.50
C-33	3/8" Coarse Aggregate, Stonefield, lbs.	540	2.66	3.25
C-33	3/4" Coarse Aggregate, Stonefield, lbs.	1260	2.66	7.59
C-1602	Water, (gal.), lbs.	33.50	279	1.00
	Air Content, %	2.0		0.54
			Total:	27.10

ASTM	Admixtures	oz / c.w.	oz. /c.y.
C-494 Type A and F	Mid-Range Water Reducer Dosage, BASF Glenium 7500	3.00	16.2
C1116C, 1116M	BASF MasterFiber M70 @ 1 lb. per cubic yard		

**NO FIBER - SLABS
 HAVE WWF AND
 ARE EXPOSED
 CONCRETE**

ASTM	Optional Admixture	oz / c.w.	oz. /c.y.
C-494 Type E and E	1 % Non-Chloride Accelerator, B	10	54.0

Mix Properties: Maximum Slump : **6"** W/C Ratio: **0.52**
 Air Content: **2.5 +/- 1.5%** Design Density: **147.32**

Hissong Ready-Mix reserves the right to adjust admixture dosage rates, aggregate weights and aggregate blends to maintain the design parameters.

Prepared by: Philip Nunley

HISSONG READY-MIX & AGGREGATES

Compressive Strength Analysis

3,000 psi 3/4", no air

Mix ID: 3042203N

Sample Date	Air Temp (deg. F.)	Mix Temp (deg. F.)	Slump (inches)	Air Content (%)	7 Day Strength (psi)	28 Day Strength (psi)	28 Day Moving Avg.
6/30/2016	71	78	6.25	1.5	2870	3940	
8/25/2016	85	82	6.00	1.7	2740	3660	
8/29/2016	72	79	4.25	2	3340	4416	4005
9/2/2016	83	79	6.00	1.7	2755	3675	3917
11/16/2016	50	67	5.00	3	3730	4735	4275
11/16/2016	50	66	5.50	2.8	3140	3970	4127
11/16/2016	50	67	6.00	3	2790	3870	4192
11/22/2016	28	62	5.75	3.2	3360	4485	4108
11/22/2016	30	60	6.50	3.1	2610	3855	4070
11/22/2016	32	59	6.50	2.8	2680	3930	4090
3/10/2017	35	67	5.50	2.3	3350	4335	4040
3/10/2017	37	64	6.00	2.5	3160	4210	4158
4/19/2017	42	71	6.00	2	4340	4340	4295
4/19/2017	43	68	6.25	2	3240	4110	4220
4/19/2017	43	66	6.50	1.9	2965	3880	4110
4/19/2017	44	68	6.25	2.1	2760	4020	4003
5/24/2017	51	66	6.00	1.8	3365	4355	4085
5/24/2017	53	66	7.00	1.9	3250	4220	4198
Count	18	18	18	18	18	18	16
Average	50	69	5.96	2.3	3136	4111	4118
Std Deviation	17.2	6.7	0.6	0.6	431.5	293.7	102.2
Range Min	28	59	4.25	1.5	2610	3660	3917
Max	85	82	7	3.2	4340	4735	4295



HISSONG READY-MIX & AGGREGATES, LLC

Concrete Mix Design

Date : **6/27/2017**

Contractor: **Wright-Ryan Construction**
 Project: **Waynefleete Lower School Renovation and Addition**
 Design: **5,000 psi, 3/4" with air** Mix ID: **5043300A**
 Mix Use: **Exterior Slabs**

ASTM	Materials	Quantity	Density	Yield
C-150	Cement : Ciment Quebec Type II, lbs.	510	3.15	2.59
C-989	GGBF Slag: Dragon Grade 120, lbs.	170	2.81	0.97
C-33	Fine Aggregate, Portland S & G, lbs.	1078	2.59	6.67
C-33	3/8" Coarse Aggregate, Stonefield, lbs.	540	2.66	3.25
C-33	3/4" Coarse Aggregate, Stonefield, lbs.	1260	2.66	7.59
C-1602	Water, (gal.), lbs.	33.00	275	1.00
	Air Content, %	6.0		4.41
				1.62
			Total:	27.10

ASTM	Admixtures	oz / c.w.	oz. /c.y.
C-260	Air-Entraining Agent, BASF AE-200	0.24	1.6
C-494 Type A and F	High-Range Water Reducer Dosage, BASF Glenium 7500	4.50	30.6

ASTM	Optional Admixture	oz / c.w.	oz. /c.y.
C-494 Type C and E	1 % Non-Chloride Accelerator, BASF FP 20	10	68.0
C-494 Type B and D	Set Retarding Admixture, BASF R100	1.5	10.2

Mix Properties: Maximum Slump : **8"** W/C Ratio: **0.40**
 Air Content: **6.0 +/- 1.5 %** Design Density: **141.42**

Hissong Ready-Mix reserves the right to adjust admixture dosage rates, aggregate weights and aggregate blends to maintain the design parameters.

Prepared by: Philip Nunley

HISSONG READY-MIX & AGGREGATES
Compressive Strength Analysis
5,000 psi 3/4" with air
Mix ID: 5043300A

Sample Date	Air Temp (deg. F.)	Mix Temp (deg. F.)	Slump (inches)	Air Content (%)	7 Day Strength (psi)	28 Day Strength (psi)	28 Day Moving Avg.
7/13/2016	74	64	5.00	5.0	5663	6840	
7/13/2016	76	65	6.00	6	5707	6680	
7/20/2016	80	79	5.00	5.8	5190	7045	6855
7/27/2016	80	81	5.50	5.5	4330	6095	6607
8/3/2016	72	76	7.00	8.7	3480	5875	6338
8/3/2016	72	78	7.25	8	3500	5990	5987
8/8/2016	75	80	6.00	5.5	3440	5975	5947
8/10/2016	75	82	6.00	6.1	3590	5515	5827
8/18/2016	65	76	5.50	5.2	4620	6340	5943
8/25/2016	70	79	6.00	6.4	4510	6185	6013
8/31/2016	70	80	5.00	6	4970	6425	6317
9/2/2016	70	81	5.50	5.1	3860	5845	6152
9/20/2016	80	80	5.50	6.5	4590	6110	6127
9/26/2016	48	60	5.25	5.1	5110	7445	6467
12/21/2016	30	62	6.50	6.1	4970	6353	6636
1/20/2017	35	70	6.50	5.5	4950	6230	6676
2/17/2017	25	62	6.50	5.3	5277	6414	6332
2/22/2017	34	67	6.00	5.7	5376	6773	6472
3/24/2017	24	60	5.00	6.4	4293	5850	6346
Count	19	19	19	19	19	19	17
Average	61	73	6	6	4601	6315	6297
Std. Deviation	20.5	8.3	0.7	1.0	744	475	299
Range Minimum	24	60	5	5	3440	5515	5827
Maximum	80	82	7.25	8.7	5707	7445	6855

HISSONG READY-MIX & AGGREGATES

Aggregate Analysis

Fine Aggregate and #67 / #57 Blend

Material	Source - Location							
Fine Aggregate	Portland Sand & Gravel - Gray, Maine							
3/8" Stone	Stonefield Aggregates - Lyman, Maine							
3/4" Stone	Stonefield Aggregates - Lyman, Maine							
	Fine Aggregate		Coarse Aggregate		Coarse Aggregate Blend			
			3/8"	3/4"	3/8"	3/4"		#67 / #57
Sieve	Specified	Percent	Percent	Percent	@	@	Combined	Specified
Size	Range	Passing	Passing	Passing	30%	70%	Blend	Range
1 1/2"								100
1"			100	100	30.0	70.0	100.0	95-100
3/4"			100	93	35.0	60.5	95.5	90-100
1/2"			99.4	25.1	34.8	16.3	51.1	25-60
3/8"	100	100	67.9	5.2	23.8	3.4	27.1	20-55
#4	95-100	98	13.0	2.0	4.6	1.3	5.9	0-10
#8	80-100	90.9	3.7	1.7	1.3	1.1	2.4	0-5
#16	50-85	74.6	2.4	1.4	0.8	0.9	1.8	
#30	25-60	42.3			0.0			
#50	10 to 30	14.5						
#100	2 to 10	3.3						
#200	0 to 5	1	0.6	0.5	0.2	0.3	0.5	
F.M.	2.3 - 3.1	2.76						
Color Plate		#1						
Absorption		0.6	0.9	0.7				
Date Sampled		6/1/17	6/1/17	6/1/17				
Tested By:	Tom Powers							



Report of Specific Gravity & Absorption of Fine Aggregate

ASTM C128, AASHTO T 84

Project Name: 2016 Aggregate Submittal Testing
Project Location: Kennebunk, ME
Client: Hissong Ready Mix & Aggregates
Material Description: Sand
Material Source: Portland Sand & Gravel

Project Number: 16-0576
Lab ID: 21847G
Date Received: 11/10/16
Date Completed: 11/21/16
Tested By: Justin Bisson

Bulk Specific Gravity (Gsb)	2.57
Apparent Specific Gravity (Gsa)	2.61
Bulk Specific Gravity SSD (GsbSSD)	2.59
Absorption %	0.6%

Aggregate Moisture Condition Oven Dry

Comments:

Reviewed By:



Report of Specific Gravity & Absorption of Coarse Aggregate

ASTM C127, AASHTO T 85

Project Name: 2016 Aggregate Submittal Testing
Project Location: Kennebunk, ME
Client: Hissong Ready-Mix & Aggregates
Material Description: 3/8" Stone
Material Source: Stonefield Aggregates

Project Number: 16-0576
Lab ID: 21066G
Date Received: 06/21/16
Date Completed: 06/22/16
Tested By: Paul Shaffer

Bulk Specific Gravity (Gsb)	2.640
Apparent Specific Gravity (Gsa)	2.706
Bulk Specific Gravity SSD (GsbSSD)	2.664
Absorption %	0.9%

Aggregate Moisture Condition Oven Dry

Comments:

Reviewed By:



Report of Specific Gravity & Absorption of Coarse Aggregate

ASTM C127, AASHTO T 85

Project Name: 2016 Aggregate Submittal Testing
Project Location: Kennebunk, ME
Client: Hissong Ready-Mix & Aggregates
Material Description: 3/4" Stone
Material Source: Stonefield Aggregates

Project Number: 16-0576
Lab ID: 21067G
Date Received: 06/21/16
Date Completed: 06/22/16
Tested By: Paul Shaffer

Bulk Specific Gravity (Gsb)	2.647
Apparent Specific Gravity (Gsa)	2.694
Bulk Specific Gravity SSD (GsbSSD)	2.665
Absorption %	0.7%

Aggregate Moisture Condition Oven Dry

Comments:

Reviewed By:

MasterAir[®] AE 200

Air-Entraining Admixture

Formerly Micro Air*

Description

MasterAir AE 200 air-entraining admixture provides concrete with extra protection by creating air bubbles that are ultrastable, small and closely spaced – a characteristic especially useful in the types of concrete known for their difficulty to entrain and maintain the air content desired.

Even when used at a lower dosage than standard air-entraining admixtures, MasterAir AE 200 admixture meets the requirements of ASTM C 260, AASHTO M 154, and CRD-C 13.

Applications

Recommended for use in:

- Concrete exposed to cyclic freezing and thawing
- Production of high-quality normal or lightweight concrete (heavyweight concrete normally does not contain entrained air)

Features

- Ready-to-use in the proper concentration for rapid, accurate dispensing
- Greatly improved stability of air-entrainment
- Ultra stable air bubbles

Benefits

- Increased resistance to damage from cyclic freezing and thawing
- Increased resistance to scaling from deicing salts
- Improved plasticity and workability
- Improved air-void system in hardened concrete
- Improved ability to entrain and retain air in low-slump concrete, concrete containing high-carbon content fly ash, concrete using large amounts of fine materials, concrete using high-alkali cements, high-temperature concrete, and concrete with extended mixing times
- Reduced permeability – increased watertightness
- Reduced segregation and bleeding

Performance Characteristics

Concrete durability research has established that the best protection for concrete from the adverse effects of freezing and thawing cycles and deicing salts results from: proper air content in the hardened concrete, a suitable air-void system in terms of bubble size and spacing and adequate concrete strength, assuming the use of sound aggregates and proper mixing, transporting, placing, consolidation, finishing and curing techniques. MasterAir AE 200 admixture can be used to obtain adequate freezing and thawing durability in a properly proportioned concrete mixture, if standard industry practices are followed.

Air Content Determination: The total air content of normal weight concrete should be measured in strict accordance with ASTM C 231, "Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method" or ASTM C 173/C 173M, "Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method."

The air content of lightweight concrete should only be determined using the Volumetric Method. The air content should be verified by calculating the gravimetric air content in accordance with ASTM C 138/C 138M, "Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete." If the total air content, as measured by the Pressure Method or Volumetric Method and as verified by the Gravimetric Method, deviates by more than 1.5%, the cause should be determined and corrected through equipment calibration or by whatever process is deemed necessary.

Guidelines for Use

Dosage: There is no standard dosage for MasterAir AE 200 admixture. The exact quantity of air-entraining admixture needed for a given air content of concrete varies because of differences in concrete making materials and ambient conditions. Typical factors that might influence the amount of air entrained include: temperature, cementitious materials, sand gradation, sand-aggregate ratio, mixture proportions, slump, means of conveying and placement, consolidation and finishing technique.

The amount of MasterAir AE 200 admixture used will depend upon the amount of entrained air required under actual job conditions. In a trial mixture, use 0.125 to 1.5 fl oz/cwt (8-98 mL/100 kg) of cement. In mixtures containing water-reducing or set-control admixtures, the amount of MasterAir AE 200 admixture needed is somewhat less than the amount required in plain concrete. Due to possible changes in the factors that can affect the dosage of MasterAir AE 200 admixture, frequent air content checks should be made during the course of the work. Adjustments to the dosage should be based on the amount of entrained air required in the mixture at the point of placement. If an unusually high or low dosage of MasterAir AE 200 admixture is required to obtain the desired air content, consult your Local sales representative. In such cases, it may be necessary to determine that, in addition to a proper air content in the fresh concrete, a suitable air-void system is achieved in the hardened concrete.

Dispensing and Mixing: Add MasterAir AE 200 admixture to the concrete mixture using a dispenser designed for air-entraining admixtures; or add manually using a suitable measuring device that ensures accuracy within plus or minus 3% of the required amount. For optimum, consistent performance, the air-entraining admixture should be dispensed on damp, fine aggregate or with the initial batch water. If the concrete mixture contains lightweight aggregate, field evaluations should be conducted to determine the best method to dispense the air-entraining admixture.

Precaution

In a 2005 publication from the Portland Cement Association (PCA R&D Serial No. 2789), it was reported that problematic air-void clustering that can potentially lead to above normal decreases in strength was found to coincide with late additions of water to air-entrained concretes. Late additions of water include the conventional practice of holding back water during batching for addition at the jobsite. Therefore, caution should be exercised with delayed additions to air-entrained concrete. Furthermore, an air content check should be performed after post-batching addition of any other materials to an air-entrained concrete mixture.

Product Notes

Corrosivity – Non-Chloride, Non-Corrosive: MasterAir AE 200 admixture will neither initiate nor promote corrosion of reinforcing and prestressing steel embedded in concrete, or of galvanized steel floor and roof systems. No calcium chloride or other chloride-based ingredients are used in the manufacture of this admixture.

Compatibility: MasterAir AE 200 admixture may be used in combination with any BASF admixture, unless stated otherwise on the data sheet for the other product. When used in conjunction with other admixtures, each admixture must be dispensed separately into the mixture.

Storage and Handling

Storage Temperature: MasterAir AE 200 admixture should be stored and dispensed at 35 °F (2 °C) or higher. Although freezing does not harm this product, precautions should be taken to protect it from freezing. If it freezes, thaw and reconstitute by mild mechanical agitation. Do not use pressurized air for agitation.

Shelf Life: MasterAir AE 200 admixture has a minimum shelf life of 18 months. Depending on storage conditions, the shelf life may be greater than stated. Please contact your Local sales representative regarding suitability for use and dosage recommendations if the shelf life of MasterAir AE 200 admixture has been exceeded.

Safety: MasterAir AE 200 admixture is a caustic solution. Chemical goggles and gloves are recommended when transferring or handling this material. (See SDS and/or product label for complete information.)

Packaging

MasterAir AE 200 admixture is supplied in 55 gal (208 L) drums, 275 gal (1040 L) totes and by bulk delivery.

Related Documents

Safety Data Sheets: MasterAir AE 200 admixture

Additional Information

For suggested specification information or for additional product data on MasterAir AE 200 admixture, contact your local sales representative.

The Admixture Systems business of BASF's Construction Chemicals division is the leading provider of solutions that improve placement, pumping, finishing, appearance and performance characteristics of specialty concrete used in the ready-mixed, precast, manufactured concrete products, underground construction and paving markets. For over 100 years we have offered reliable products and innovative technologies, and through the Master Builders Solutions brand, we are connected globally with experts from many fields to provide sustainable solutions for the construction industry.

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* Micro Air became MasterAir AE 200 under the Master Builders Solutions brand, effective January 1, 2014.

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MasterGlenium® 7500

Full-Range Water-Reducing Admixture

Formerly GLENium 7500*

Description

MasterGlenium 7500 full-range water-reducing admixture is very effective in producing concrete mixtures with different levels of workability including applications that require self-consolidating concrete (SCC). MasterGlenium 7500 admixture meets ASTM C 494/C 494M compliance requirements for Type A, water-reducing, and Type F, high-range water-reducing, admixtures.

Applications

Recommended for use in:

- Concrete with varying water reduction requirements (5-40%)
- Concrete where control of workability and setting time is critical
- Concrete where high flowability, increased stability, high-early and ultimate strengths, and improved durability are needed
- Producing self-consolidating concrete (SCC)
- Strength-on-demand concrete, such as 4x4™ Concrete
- Pervious concrete

Features

MasterGlenium 7500 full-range water-reducing admixture is based on the next generation of polycarboxylate technology found in all of the MasterGlenium 7000 series products. This technology combines state-of-the-art molecular engineering with a precise understanding of regional cements to provide specific and exceptional value to all phases of the concrete construction process.

- Dosage flexibility for normal, mid-range and high-range applications
- Excellent early strength development
- Controls setting characteristics
- Optimizes slump retention/setting relationship
- Consistent air entrainment

Benefits

- Faster turnover of forms due to accelerated early strength development
- Reduces finishing labor costs due to optimized set times
- Use in fast track construction
- Minimizes the need for slump adjustments at the jobsite
- Less jobsite QC support required
- Fewer rejected loads
- Optimizes concrete mixture costs

Performance Characteristics

Concrete produced with MasterGlenium 7500 admixture achieves significantly higher early age strength than first generation polycarboxylate high-range water-reducing admixtures. MasterGlenium 7500 admixture also strikes the perfect balance between workability retention and setting characteristics in order to provide efficiency in placing and finishing concrete. The dosage flexibility of MasterGlenium 7500 allows it to be used as a normal, mid-range, and high-range water reducer.

Guidelines for Use

Dosage: MasterGlenium 7500 admixture has a recommended dosage range of 2-15 fl oz/cwt (130-975 mL/100 kg) of cementitious materials. For most mid- to high-range applications, dosages in the range of 5-8 fl oz/cwt (325-520 mL/100 kg) will provide excellent performance. For high performance and producing self-consolidating concrete mixtures, dosages of up to 12 fl oz/cwt (780 mL/100 kg) of cementitious materials can be utilized. Because of variations in concrete materials, jobsite conditions and/or applications, dosages outside of the recommended range may be required. In such cases, contact your local sales representative.

Mixing: MasterGlenium 7500 admixture can be added with the initial batch water or as a delayed addition. However, optimum water reduction is generally obtained with a delayed addition.

Product Notes

Corrosivity – Non-Chloride, Non-Corrosive: MasterGlenium 7500 admixture will neither initiate nor promote corrosion of reinforcing steel embedded in concrete, prestressing steel or of galvanized steel floor and roof systems. Neither calcium chloride nor other chloride-based ingredients are used in the manufacture of MasterGlenium 7500 admixture.

Compatibility: MasterGlenium 7500 admixture is compatible with most admixtures used in the production of quality concrete, including normal, mid-range and high-range water-reducing admixtures, air-entrainers, accelerators, retarders, extended set control admixtures, corrosion inhibitors, and shrinkage reducers.

Do not use MasterGlenium 7500 admixture with admixtures containing beta-naphthalene sulfonate. Erratic behaviors in slump, workability retention and pumpability may be experienced.

Storage and Handling

Storage Temperature: MasterGlenium 7500 admixture must be stored at temperatures above 40 °F (5 °C). If MasterGlenium 7500 admixture freezes, thaw and reconstitute by mechanical agitation.

Shelf Life: MasterGlenium 7500 admixture has a minimum shelf life of 9 months. Depending on storage conditions, the shelf life may be greater than stated. Please contact your local sales representative regarding suitability for use and dosage recommendations if the shelf life of MasterGlenium 7500 admixture has been exceeded.

Packaging

MasterGlenium 7500 admixture is supplied in 55 gal (208 L) drums, 275 gal (1040 L) totes and by bulk delivery.

Related Documents

Safety Data Sheets: MasterGlenium 7500 admixture

Additional Information

For additional information on MasterGlenium 7500 admixture or on its use in developing concrete mixtures with special performance characteristics, contact your local sales representative.

The Admixture Systems business of BASF's Construction Chemicals division is the leading provider of solutions that improve placement, pumping, finishing, appearance and performance characteristics of specialty concrete used in the ready-mixed, precast, manufactured concrete products, underground construction and paving markets. For over 100 years we have offered reliable products and innovative technologies, and through the Master Builders Solutions brand, we are connected globally with experts from many fields to provide sustainable solutions for the construction industry.

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* GLENIUM 7500 became MasterGlenium 7500 under the Master Builders Solutions brand, effective January 1, 2014.

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MasterSet[®] FP 20

Accelerating Admixture

Formerly Pozzutec 20+*

Description

MasterSet FP 20 admixture is a multi-component, non-chloride, water-reducing and accelerating admixture formulated to accelerate concrete setting time and increase early and ultimate strengths across a wide range of ambient temperatures (hot, mild, cold and subfreezing). MasterSet FP 20 admixture meets ASTM C 494/C 494M requirements for Type C, accelerating, and Type E, water-reducing and accelerating, admixtures.

Applications

Recommended for use in:

- Concrete being placed in subfreezing ambient conditions
- Reinforced, precast, pumped, flowable, lightweight or normal weight concrete and shotcrete (wet mix)
- Concrete placed on galvanized steel floor and roof systems
- Prestressed concrete
- Fast-track concrete construction
- Concrete subject to chloride ion limitations
- Self-consolidating concrete
- Pervious concrete
- 4x4[™] Concrete

Features

- Accelerated setting time
- Especially effective for concrete placement at ambient temperatures as low as 20 °F (-7 °C)
- Superior workability
- Increased early and ultimate strengths
- Superior finishing characteristics for flatwork and cast surfaces

Benefits

- Earlier finishing of slabs – reduced labor costs
- Reduced in-place concrete costs
- Reduced or eliminated heating and protection time in cold weather
- Earlier stripping and reuse of forms

Performance Characteristics

Mixture Data

Type II cement, lb/yd ³ (kg/m ³)	600 (356)
Slump, in. (mm)	4 ± 1 (100 ± 25)
Air Content, %	Non-air-entrained concrete
Concrete Temperature	55 °F (12 °C)

Mild Weather

Setting Time: Ambient Temperature: 70 °F (21 °C)

Time of Set

Mixture	Initial Set (h:min)	Difference (h:min)
Plain	4:30	REF
MasterSet FP 20 admixture @ › 10 fl oz/cwt (650 mL/100 kg)	3:18	- 1:12

Cold Weather**Setting Time: Ambient Temperature: 50 °F (10 °C)**

Mixture	Time of Set	
	Initial Set (h:min)	Difference (h:min)
Plain	5:48	REF
MasterSet FP 20 admixture @		
> 20 fl oz/cwt (1,300 mL/100 kg)	4:00	-1:48

Subfreezing Weather**Setting Time: Ambient Temperature: 30 °F (-1 °C)**

Mixture	Time of Set	
	Initial Set (h:min)	Difference (h:min)
Plain	12:12	REF
MasterSet FP 20 admixture @		
> 60 fl oz/cwt (3,910 mL/100 kg)	3:54	- 8:18
> 90 fl oz/cwt (5,870 mL/100 kg)	2:24	- 9:48

Guidelines for Use

Dosage: The specific dosage of MasterSet FP 20 admixture for a given application is dependent on ambient and concrete temperatures, cement chemistry, concrete mixture proportions, the amount of set time acceleration needed and strength performance required. Listed below are the recommended dosage ranges for various weather applications.

Recommended Dosage for Mild and Cold Weather Applications: Use 5 - 60 fl oz/cwt (325 - 3,910 mL/100 kg) of cementitious material. As the dosage rate of MasterSet FP 20 admixture is increased, setting time is accelerated and early and ultimate strengths are increased.

Recommended Dosage for Subfreezing Weather Applications: Use 60 - 90 fl oz/cwt (3,910 - 5,870 mL /100 kg) of cementitious material to reduce the freezable water content of the mixture, to accelerate setting time and to provide early protection against freezing while the concrete is plastic in subfreezing temperatures.

Conservation of the heat generated by the concrete through the use of wind protection and/or insulation will permit placement in subfreezing ambient temperatures. See ACI 306.1, "Standard Specification for Cold Weather Concreting," and ACI 306 R, "GuidetoColdWeatherConcreting" for recommended protection in cold weather.

Exposure to air movement, concrete surface to volume ratio, and mixture proportions affect performance under extreme cold weather conditions. Concrete containing MasterSet FP 20 admixture may reduce or eliminate the need for recognized protective measures and protection time required in cold or subfreezing weather concreting applications. Field evaluations of the concrete mixture selected for the project should be performed using local materials to determine: the optimum dosage rate of MasterSet FP 20 admixture required to achieve the desired setting time and strength performance, the minimum acceptable ambient and concrete temperatures for placement, and if the recognized protective measures and protection time required for cold and subfreezing weather concreting may be reduced or eliminated.

MasterEmaco A evaporation reducer is recommended to minimize evaporation of surface moisture. Concrete containing MasterSet FP 20 admixture that will be exposed to subfreezing weather conditions must be sealed to prevent the ingress of additional water to hardened concrete during curing. A surface sealer must be applied as soon as the concrete reaches initial set or finishing is complete.

Product Notes

Corrosivity – Non-Chloride, Non-Corrosive: MasterSet FP 20 admixture will neither initiate nor promote corrosion of reinforcing steel in concrete.

Compatibility: MasterSet FP 20 admixture can be used as a singular admixture or as a component in a BASF admixture system. When used with other admixtures, each admixture must be dispensed separately into the mixture.

In applications that require MasterSet FP 20 admixture dosages of 30 fl oz/cwt (1,950 mL/100 kg) or more, the use of a MasterGlenium® high-range water-reducing admixture is recommended to obtain increased water reduction and strength performance. **At such dosages, erratic slump behavior may be experienced when MasterSet FP 20 admixture is used in concrete mixtures that also contain naphthalene-based admixtures.**

Storage and Handling

Storage Temperature: MasterSet FP 20 admixture should be stored above freezing temperatures. If MasterSet FP 20 admixture freezes, thaw at 35 °F (2 °C) or above and completely reconstitute by mild mechanical agitation. **Do not use pressurized air for agitation.**

Shelf Life: MasterSet FP 20 admixture has a minimum shelf life of 12 months. Depending on storage conditions, the shelf life may be greater than stated. Please contact your local sales representative regarding suitability for use and dosage recommendations if the shelf life of MasterSet FP 20 admixture has been exceeded.

Packaging

MasterSet FP 20 admixture is supplied in 55 gal (208 L) drums, 275 gal (1040 L) totes and by bulk delivery.

Related Documents

Safety Data Sheets: MasterSet FP 20 admixture

Additional Information

For additional information on MasterSet FP 20 admixture or its use in developing a concrete mixture with special performance characteristics, contact your local sales representative.

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* Pozzotec 20+ became MasterSet FP 20 under the Master Builders Solutions brand, effective January 1, 2014.

ANALYSIS CERTIFICATE

Portland Cement type

II

April 2017

Physical tests

Time of Set Vicat (minutes)

Initial.....105

Final.....250

Fineness

Specific surface

(Blaine) (m²/kg).....399

Retained on 45 µm

sieve (%) 3

Autoclave

expansion (%).....0.04

Air content (%)..... 6

Compressive strength (MPa [psi])

3 days.....26.4 [3830]

7 days.....30.8 [4470]

28 days (Mar-17)35.6 [5160]

Expansion of mortar bars

at 14 days (%).....0.013

Chemical analysis (%)

SiO₂..... 19.2

Al₂O₃ 4.7

Fe₂O₃..... 3.4

CaO 60.4

Free calcium oxide..... 1.5

MgO..... 2.5

SO₃..... 4.1

Loss on ignition 1.9

Insoluble residue 0.7

Alkalies

(Na₂O equivalent) 0.92

Carbon dioxide (CO₂)..... 1.5

Limestone 3.9

Calcium carbonate (CaCO₃)

in limestone..... 85

Mineralogical Composition (Potential)

C₃S 48

C₂S 17

C₃A 7

C₄AF 10

Sum C₃S + 4.75 C₃A 79

We hereby certify that the cement delivered complies
with the ASTM Standard C 150 and AASHTO M 85, Type II.

For any information regarding this certificate, please contact our technical service at (418) 329-2100.

2Astm&Aashto

Michel Chabot, Eng.
Michel Chabot, Eng.
Chemist Engineer



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<p>MILL TEST RESULTS Laboratory at Thomaston, Maine</p>	<p>Date: February 8, 2017 Ground Granulated Blast Furnace Slag Silo Numbers: 23 & 26</p>
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CHEMICAL DATA	Percent	PHYSICAL DATA
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Reference Cement Data	Dragon GGBF Slag Data
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<p>Specific Surface..... 366 Blaine (sq m /Lg)</p> <p>Alkali Equivalent..... 0.81</p> <p>Compressive Strength (psi of reference portland cement) 7 day..... 3980 28 day..... 5090</p> <p>Potential Compound Composition C3S (%)..... 53 C2S (%)..... 14 C3A (%)..... 7 C4AF (%)..... 11</p>	<p>Specific Surface..... 538 Blaine (sq m /Lg)</p> <p>Percent Retained on 325 Mesh..... 1.2</p> <p>Air Content (%)..... 5.2</p> <p>Sulfide Sulfur (S)..... 1.0</p> <p>Compressive Strength (psi of 50:50 slag and reference portland cement) 7 day..... 4100 28 day..... 7125</p> <p>Activity Index 7 day..... 103% 28 day..... 140%</p> <p>Specific Gravity (g/ml)..... 2.81</p> <p>Autoclave Expansion..... 0.016</p>
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 Jennifer Lynn Small
 Quality Control & Distribution Manager

We hereby certify that this material complies with current ASTM C 989 and AASHTO M 302 Grade 100 specifications as well as CSA-A3001 Type S specifications for slag

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - Waynflete Lower School Addition and Renovations - Construction Materials Testing Services

Project Number: 15-0577.1

Client: The Waynflete School

Client Contract Number:
General Contractor:
Concrete Supplier: HISSONG CONCRETE

PLACEMENT INFORMATION

Date Cast: 8/16/2017 **Time Cast:** 12:05 **Date Received:** 8/17/2017

Placement Location: LINES 1 & 2, FROST WALL AND RETAINING WALL FOOTINGS

Placement Method: PUMP

Placement Vol. (yd³): 45

Cylinders Made By: AIDAN BOYCE

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F)	NT	Maximum (°F)	NT
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DELIVERY INFORMATION

Admixtures: MICRO AIR

TEST RESULTS

Slump (in) (C-143): 7 1/4

Load Number: 2	Batch
	11:12

Air Content (%) (C-231) 6

Mixer Number 317

Air Temp (°F): 78

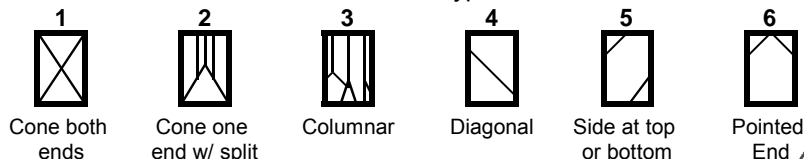
Ticket Number 6515	Arrive
	11:41

Conc. Temp (°F) (C-1064): 79

Cubic Yards: 9	Depart
	12:00
Design (psi): 3500	

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area (In) ²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
959-1A	8.10	4.00	12.59	8/23/2017	Lab	7	5	40.4	3210
959-1B	8.10	4.00	12.59	9/13/2017	Lab	28	5	53.8	4270
959-1C	8.10	4.00	12.59	9/13/2017	Lab	28	4	53.4	4240
959-1D	8.10			Hold	Lab				

Fracture Types



Remarks:

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - Waynflete Lower School Addition and Renovations - Construction Materials Testing Services

Project Number: 15-0577.1

Client: The Waynflete School

Client Contract Number:
General Contractor:
Concrete Supplier: HISSONG CONCRETE

PLACEMENT INFORMATION

Date Cast: 8/23/2017 **Time Cast:** 11:24 **Date Received:** 8/24/2017

Placement Location: FOUNDATION WALL FOR RETAINING WALL

Placement Method: TAILGATE

Placement Vol. (yd³): 13.5

Cylinders Made By: AIDAN BOYCE

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) NT **Maximum (°F)** NT

DELIVERY INFORMATION

Admixtures: MID-RANGE / MICRO AIR

TEST RESULTS

Slump (in) (C-143): 6

Load Number: 1 **Batch**
Air Content (%) (C-231) 4.5

Mixer Number: 317 10:16

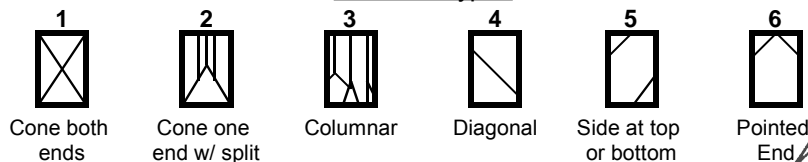
Air Temp (°F): 80

Ticket Number 6609 **Arrive**
Conc. Temp (°F) (C-1064): 82

Cubic Yards: 6.5 10:40
Design (psi): 3500 **Depart** 11:25

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In) ²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
959-2A	8.25	4.00	12.57	8/30/2017	Lab	7	5	41.0	3260
959-2B	8.25	4.00	12.58	9/20/2017	Lab	28	5	62.8	4990
959-2C	8.25	4.00	12.55	9/20/2017	Lab	28	4	61.8	4920
959-2D	8.25			Hold	Lab				

Fracture Types



Remarks:

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - Waynflete Lower School Addition and Renovations - Construction Materials Testing Services

Project Number: 15-0577.1

Client: The Waynflete School

Client Contract Number:
General Contractor:
Concrete Supplier: HISSONG CONCRETE

PLACEMENT INFORMATION

Date Cast: 8/28/2017 **Time Cast:** 1:15 **Date Received:** 8/29/2017

Placement Location: INNER FROST WALL OF LINE 1 & 2

Placement Method: DIRECT DISCHARGE

Placement Vol. (yd³): 21

Cylinders Made By: AIDAN BOYCE

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) 66 **Maximum (°F)** 87

DELIVERY INFORMATION

Admixtures: MID-RANGE WATER / MICRO AIR

TEST RESULTS

Slump (in) (C-143): 7 1/4

Load Number: 1 **Batch** 12:11

Air Content (%) (C-231) 4.6

Mixer Number 330

Air Temp (°F): 76

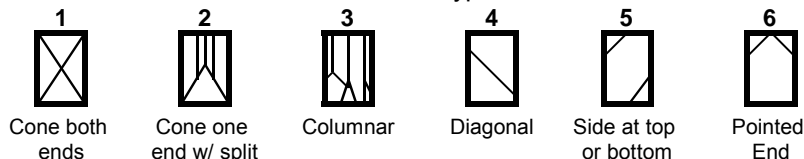
Ticket Number 6691 **Arrive** 12:40

Conc. Temp (°F) (C-1064): 79

Cubic Yards: 10.5 **Depart** 1:30
Design (psi): 3500

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In) ²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
959-3A	8.20	4.00	12.54	9/4/2017	Lab	7	6	37.6	3000
959-3B	8.20	4.00	12.59	9/25/2017	Lab	28	5	56.0	4450
959-3C	8.20	4.00	12.57	9/25/2017	Lab	28	4	55.6	4430
959-3D	8.20			10/23/2017	Lab	56			

Fracture Types




Remarks:

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - Waynflete Lower School Addition and Renovations - Construction Materials Testing Services

Project Number: 15-0577.1

Client: The Waynflete School

Client Contract Number:
General Contractor:
Concrete Supplier: HISSONG CONCRETE

PLACEMENT INFORMATION

Date Cast: 8/31/2017 **Time Cast:** 3:00 **Date Received:** 9/1/2017

Placement Location: ELEVATOR WALL LINE 11, FOOTING ON EITHERSIDE OF ELEVATOR

Placement Method:
Placement Vol. (yd³): 16

Cylinders Made By: RANDI FOURNIER

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F)	NT	Maximum (°F)	NT
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DELIVERY INFORMATION

Admixtures: MID-RANGE WATER

TEST RESULTS

Slump (in) (C-143): 6 1/2

Load Number: 1	Batch
	1:51

Air Content (%) (C-231) 4.5

Mixer Number 330

Air Temp (°F): 75

Ticket Number 6747

Arrive
2:20

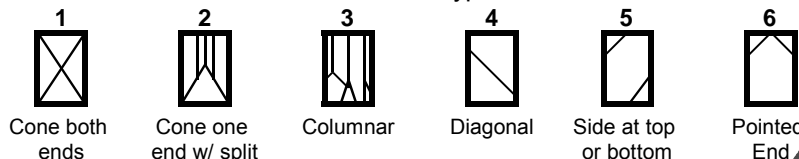
Conc. Temp (°F) (C-1064): 77

Cubic Yards: 9

Depart
Design (psi): 3500

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In) ²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
959-4A	8.20	4.01	12.62	9/7/2017	Lab	7	5	40.8	3230
959-4B	8.20	4.01	12.63	9/28/2017	Lab	28	4	55.2	4370
959-4C	8.20	4.01	12.64	9/28/2017	Lab	28	5	56.8	4490
959-4D	8.20			Hold	Lab				

Fracture Types



Remarks:

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - Waynflete Lower School Addition and Renovations - Construction Materials Testing Services

Project Number: 15-0577.1

Client: The Waynflete School

Client Contract Number:
General Contractor:
Concrete Supplier: HISSONG CONCRETE

PLACEMENT INFORMATION

Date Cast: 9/11/2017 **Time Cast:** 10:40 **Date Received:** 9/12/2017

Placement Location: RETAINING WALL, SOUTH SIDE

Placement Method: PUMP

Placement Vol. (yd³): 36

Cylinders Made By: AIDAN BOYCE

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) 61 **Maximum (°F)** 82

DELIVERY INFORMATION

Admixtures: MID-RANGE / MICRO AIR

TEST RESULTS

Slump (in) (C-143): 6

Load Number: 1 **Batch** 9:55

Air Content (%) (C-231) 5.9

Mixer Number 317

Air Temp (°F): 70

Ticket Number 6832 **Arrive** 10:25

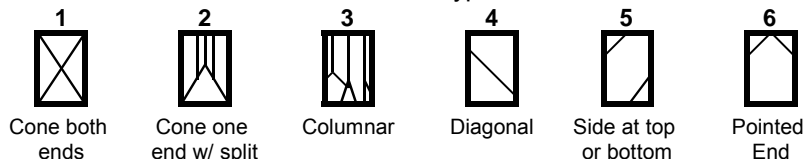
Conc. Temp (°F) (C-1064): 72

Cubic Yards: 10

Design (psi): 3500 **Depart** 10:45

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In) ²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
959-5A	8.10	4.00	12.59	9/18/2017	Lab	7	5	41.2	3280
959-5B	8.10	4.00	12.58	10/9/2017	Lab	28	5	56.0	4450
959-5C	8.10	3.99	12.53	10/9/2017	Lab	28	4	56.4	4500
959-5D	8.10			Hold	Lab				

Fracture Types



Remarks:



Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - Waynflete Lower School Addition and Renovations - Construction Materials Testing Services

Project Number: 15-0577.1

Client: The Waynflete School

Client Contract Number:
General Contractor:
Concrete Supplier: HISSONG CONCRETE

PLACEMENT INFORMATION

Date Cast: 9/27/2017 **Time Cast:** 1:30 **Date Received:** 9/28/2017

Placement Location: WALLS: LINE H, 5 TO 11 ; LINE 11, H TO N

Placement Method: PUMP

Placement Vol. (yd³): 50

Cylinders Made By: FRANK CLARK

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) 62 **Maximum (°F)** 84

DELIVERY INFORMATION

Admixtures: AIR / MRWR

TEST RESULTS

Slump (in) (C-143): 5 3/4

Load Number: 3 **Batch** 12:30

Air Content (%) (C-231) 5.5

Mixer Number 328

Air Temp (°F): 84

Ticket Number 7063

Arrive 1:00

Conc. Temp (°F) (C-1064): 83

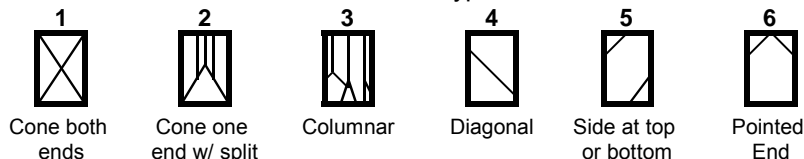
Cubic Yards: 10

Depart 1:46

Design (psi): 3500

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In) ²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
959-6A	8.30	4.01	12.63	10/4/2017	Lab	7	5	44.0	3480
959-6B	8.30	4.02	12.69	10/25/2017	Lab	28	4	56.4	4450
959-6C	8.30	4.01	12.65	10/25/2017	Lab	28	4	58.4	4620
959-6D	8.30			11/22/2017	Lab	56			

Fracture Types



Remarks:

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ASTM C-31 & C-39

Project Name: Portland ME - Waynflete Lower School Addition and Renovations - Construction Materials Testing Services

Project Number: 15-0577.1

Client: The Waynflete School

Client Contract Number:
General Contractor:
Concrete Supplier: HISSONG CONCRETE

PLACEMENT INFORMATION

Date Cast: 10/5/2017 **Time Cast:** 2:40 **Date Received:** 10/6/2017

Placement Location: WALL: N/11 - J/10

Placement Method: PUMP

Placement Vol. (yd³): 77

Cylinders Made By: AIDAN BOYCE

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F)	NT	Maximum (°F)	NT
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DELIVERY INFORMATION

Admixtures: MID-RANGE / MICRO AIR

TEST RESULTS

Slump (in) (C-143): 6 3/4

Load Number: 1	Batch
	1:56

Air Content (%) (C-231) 6.7

Mixer Number 317

Air Temp (°F): 74

Ticket Number 7183	Arrive
	2:21

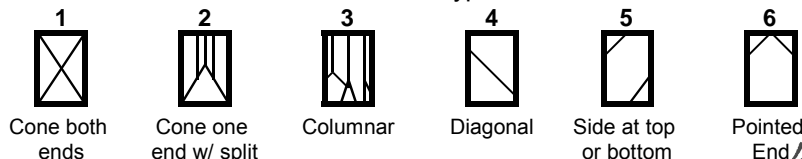
Conc. Temp (°F) (C-1064): 77

Cubic Yards: 10

Design (psi): 3500	Depart
	2:45

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In) ²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
959-9A	8.10	4.00	12.57	10/12/2017	Lab	7	5	39.6	3150
959-9B	8.10	4.00	12.59	11/2/2017	Lab	28	5	55.2	4380
959-9C	8.10	4.00	12.57	11/2/2017	Lab	28	3	55.6	4420
959-9D	8.10			Hold	Lab				

Fracture Types



Remarks:

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - Waynflete Lower School Addition and Renovations - Construction Materials Testing Services

Project Number: 15-0577.1

Client: The Waynflete School

Client Contract Number:
General Contractor:
Concrete Supplier: HISSONG CONCRETE

PLACEMENT INFORMATION

Date Cast: 10/5/2017 **Time Cast:** 4:40 **Date Received:** 10/6/2017

Placement Location: WALL: N/11 - J/10

Placement Method: PUMP

Placement Vol. (yd³): 77

Cylinders Made By: AIDAN BOYCE

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F)	NT	Maximum (°F)	NT
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DELIVERY INFORMATION

Admixtures: MID-RANGE / MICRO AIR

TEST RESULTS

Slump (in) (C-143): 7 1/4

Load Number: 6	Batch 3:53
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Air Content (%) (C-231) 6.8

Mixer Number 329

Air Temp (°F): 70

Ticket Number 7190	Arrive 4:20
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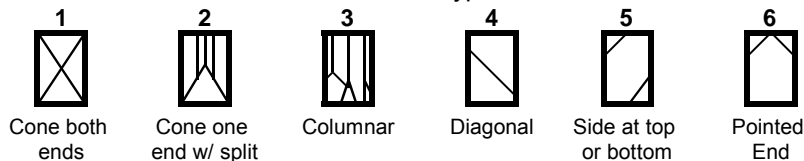
Conc. Temp (°F) (C-1064): 74

Cubic Yards: 10

Design (psi): 3500	Depart 4:35
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Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In) ²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
959-10A	8.05	4.00	12.58	10/12/2017	Lab	7	4	34.6	2750
959-10B	8.05	4.00	12.53	11/2/2017	Lab	28	4	49.2	3930
959-10C	8.05	4.01	12.61	11/2/2017	Lab	28	5	50.4	4000
959-10D	8.05			Hold	Lab				

Fracture Types



Remarks:

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - Waynflete Lower School Addition and Renovations - Construction Materials Testing Services

Project Number: 15-0577.1

Client: The Waynflete School

Client Contract Number:
General Contractor:
Concrete Supplier: HISSONG CONCRETE

PLACEMENT INFORMATION

Date Cast: 10/12/2017 **Time Cast:** 2:38 **Date Received:** 10/13/2017

Placement Location: A/6 - A/2, L/10, L/8

Placement Method: TAILGATE

Placement Vol. (yd³): 26

Cylinders Made By: AIDAN BOYCE

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) 62 **Maximum (°F)** 75

DELIVERY INFORMATION

Admixtures: MID-RANGE / MICRO AIR

TEST RESULTS

Slump (in) (C-143): 4 1/2

Load Number: 2 **Batch:** 1:21

Air Content (%) (C-231) 5.5

Mixer Number: 313

Air Temp (°F): 60

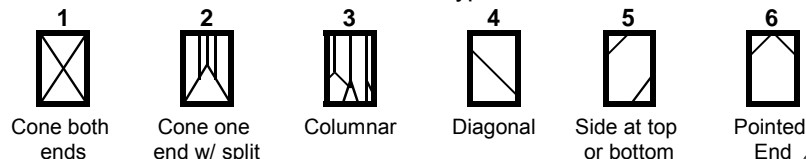
Ticket Number: 55 **Arrive:** 2:10

Conc. Temp (°F) (C-1064): 65

Cubic Yards: 9 **Depart:**
Design (psi): 3500

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area (In)²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
959-11A	8.20	4.00	12.57	10/19/2017	Lab	7	5	46.6	3710
959-11B	8.20	4.01	12.60	11/9/2017	Lab	28	5	66.8	5300
959-11C	8.20	4.00	12.58	11/9/2017	Lab	28	5	64.2	5100
959-11D	8.20			Hold	Lab				

Fracture Types



Remarks:

Report of Concrete Compressive Strength

ASTM C-31 & C-39

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Project Number: 15-0577.1

Client: The Waynflete School

Client Contract Number:
General Contractor:
Concrete Supplier: HISSONG CONCRETE

PLACEMENT INFORMATION

Date Cast: 10/20/2017 **Time Cast:** 2:47 **Date Received:** 10/24/2017

Placement Location: FOUNDATION

Placement Method: PUMP TRUCK

Placement Vol. (yd³): 60

Cylinders Made By: JOSHUA MOORE

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) 60 **Maximum (°F)** 74

DELIVERY INFORMATION

Admixtures: AE / MRWR

TEST RESULTS

Slump (in) (C-143): 7

Load Number: 2 **Batch:** 1:52

Air Content (%) (C-231) 5.8

Mixer Number: 317

Air Temp (°F): 65

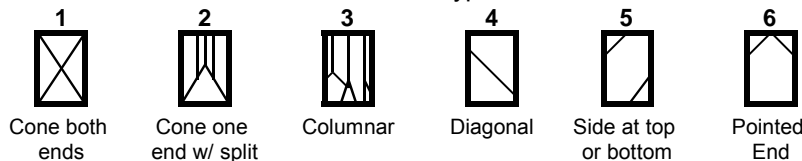
Ticket Number: 7372 **Arrive:** 2:13

Conc. Temp (°F) (C-1064): 73

Cubic Yards: 10 **Depart:** 2:53
Design (psi): 3500

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area (In) ²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
959-12A	8.05	4.00	12.58	10/27/2017	Lab	7	4	43.2	3440
959-12B	8.10	4.00	12.55	11/17/2017	Lab	28	5	57.0	4540
959-12C	8.10	4.00	12.55	11/17/2017	Lab	28	5	57.4	4570
959-12D	8.05			Hold	Lab				

Fracture Types



Remarks:

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - Waynflete Lower School Addition and Renovations - Construction Materials Testing Services

Project Number: 15-0577.1

Client: The Waynflete School

Client Contract Number:
General Contractor:
Concrete Supplier: HISSONG CONCRETE

PLACEMENT INFORMATION

Date Cast: 12/19/2017 **Time Cast:** 8:10 **Date Received:** 12/20/2017

Placement Location: INTERIOR SLAB: SLAB ON DECK, LOWER LEVEL

Placement Method: PUMP TRUCK

Placement Vol. (yd³): 75

Cylinders Made By: AIDAN BOYCE

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) 50 **Maximum (°F)** 73

DELIVERY INFORMATION

Admixtures: MID-RANGE / 2% MASTER SET FP20

TEST RESULTS

Slump (in) (C-143): 8

Load Number: 2 **Batch:** 7:11

Air Content (%) (C-231) .9

Mixer Number: 303

Air Temp (°F): 23

Ticket Number: 7890 **Arrive:** 7:35

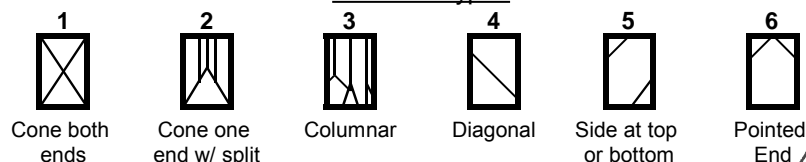
Conc. Temp (°F) (C-1064): 57

Cubic Yards: 10

Design (psi): 3000 **Depart:** 8:15

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area (In) ²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
959-13A	8.45	4.00	12.57	12/26/2017	Lab	7	5	41.2	3280
959-13B	8.35	4.00	12.59	1/16/2018	Lab	28	4	51.6	4100
959-13C	8.40	4.00	12.55	1/16/2018	Lab	28	5	50.6	4030
959-13D	8.40			Hold	Lab				

Fracture Types



Remarks:

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - Waynflete Lower School Addition and Renovations - Construction Materials Testing Services

Project Number: 15-0577.1

Client: The Waynflete School

Client Contract Number:
General Contractor:
Concrete Supplier: HISSONG CONCRETE

PLACEMENT INFORMATION

Date Cast: 12/19/2017 **Time Cast:** 10:25 **Date Received:** 12/20/2017

Placement Location: INTERIOR SLAB: SLAB ON DECK, LOWER LEVEL

Placement Method: PUMP TRUCK

Placement Vol. (yd³): 75

Cylinders Made By: AIDAN BOYCE

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) 50 **Maximum (°F)** 73

DELIVERY INFORMATION

Admixtures: MID-RANGE / 2% MASTER SET FP20

TEST RESULTS

Slump (in) (C-143): 7 3/4

Load Number: 2 **Batch:** 9:13

Air Content (%) (C-231) 1.4

Mixer Number: 328

Air Temp (°F): 23

Ticket Number: 7894 **Arrive:** 9:53

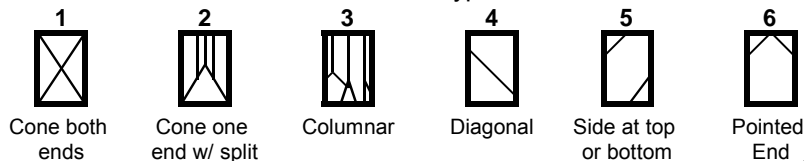
Conc. Temp (°F) (C-1064): 58

Cubic Yards: 11

Design (psi): 3000 **Depart:** 10:30

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area (In) ²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
959-14A	8.35	3.99	12.50	12/26/2017	Lab	7	5	41.4	3310
959-14B	8.40	4.00	12.57	1/16/2018	Lab	28	5	53.6	4270
959-14C	8.35	3.99	12.51	1/16/2018	Lab	28	5	52.2	4170
959-14D	8.40			Hold	Lab				

Fracture Types



Remarks:

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - Waynflete Lower School Addition and Renovations - Construction Materials Testing Services

Project Number: 15-0577.1

Client: The Waynflete School

Client Contract Number:
General Contractor:
Concrete Supplier: HISSONG CONCRETE

PLACEMENT INFORMATION

Date Cast: 12/27/2017 **Time Cast:** 9:15 **Date Received:** 12/28/2017

Placement Location: GROUND FLOOR SLAB ON GRADE

Placement Method: LINE PUMP

Placement Vol. (yd³): 100

Cylinders Made By: AIDAN BOYCE

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) 45 **Maximum (°F)** 72

DELIVERY INFORMATION

Admixtures: MID-RANGE / 2% MASTER SET FP20

TEST RESULTS

Slump (in) (C-143): 5 3/4

Load Number: 4 **Batch:** 8:04

Air Content (%) (C-231) 2.1

Mixer Number: 333

Air Temp (°F): 5

Ticket Number: 7938 **Arrive:** 8:30

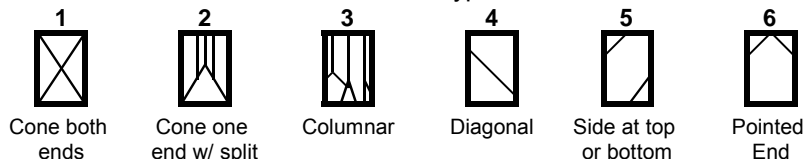
Conc. Temp (°F) (C-1064): 49

Cubic Yards: 10

Design (psi): 3000 **Depart:** 9:15

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area (In) ²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
959-15A	8.45	4.00	12.56	1/3/2018	Lab	7	4	47.4	3770
959-15B	8.45	4.00	12.56	1/24/2018	Lab	28	4	60.0	4780
959-15C	8.45	4.00	12.57	1/24/2018	Lab	28	4	62.0	4930
959-15D	8.45			Hold	Lab				

Fracture Types



Remarks:

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - Waynflete Lower School Addition and Renovations - Construction Materials Testing Services

Project Number: 15-0577.1

Client: The Waynflete School

Client Contract Number:
General Contractor:
Concrete Supplier: HISSONG CONCRETE

PLACEMENT INFORMATION

Date Cast: 12/27/2017 **Time Cast:** 10:05 **Date Received:** 12/28/2017

Placement Location: GROUND FLOOR SLAB ON GRADE

Placement Method: LINE PUMP

Placement Vol. (yd³): 100

Cylinders Made By: AIDAN BOYCE

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) 45 **Maximum (°F)** 72

DELIVERY INFORMATION

Admixtures: MID-RANGE / 2% MASTER SET FP20

TEST RESULTS

Slump (in) (C-143): 8 1/2

Load Number: 7 **Batch:** 8:58

Air Content (%) (C-231) 1.4

Mixer Number: 303

Air Temp (°F): 12

Ticket Number: 7941 **Arrive:** 9:30

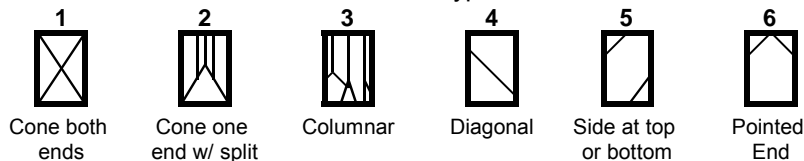
Conc. Temp (°F) (C-1064): 48

Cubic Yards: 10

Design (psi): 3000 **Depart:** 10:00

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area (in) ²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
959-16A	8.35	3.99	12.47	1/3/2018	Lab	7	4	45.6	3660
959-16B	8.35	3.98	12.42	1/24/2018	Lab	28	5	56.8	4570
959-16C	8.35	3.99	12.49	1/24/2018	Lab	28	5	57.2	4580
959-16D	8.35			Hold	Lab				

Fracture Types



Remarks:

Section B: 04200



Field Report

No. FR-1

Project: Waynflete Lower School
Project #: 3660
Date/Time: 7/21/17 – 8:00 AM
Participants Dan Burne (BSE) Millard Nadeau (WR)

I visited the site at the above date and time per request to view the condition of the end wall of Sills hall, recently exposed by demolition of the adjacent structure. I met with Project superintendent Millard Nadeau of Wright Ryan Construction. I observed and discussed the following:

1. The foundation for the now-removed building was removed to a level of approximately 3' above Sills slab elevation. Rubble wall remains to this level as it was previously decided to not remove this portion by heavy machinery. It is likely that a concrete foundation wall exists behind the rubble. We discussed removing the stones carefully one at a time in the area of the new elevator. WR to advise BSE on what is uncovered in this area once more stones are removed. Condition of Sills wall behind the stone and if/what type of repairs are needed is unknown at this time. Whether or not some stone may need to remain, with changes to the new concrete wall that will be placed in front of it, is also unknown at this time.
2. Condition of the exposed masonry wall above shows open head and bed joints, penetrations and areas where CMU blocks were broken to allow the wall to be built around protrusions of the now-removed building. The wall was originally built from one side only, making it difficult to finish the side now exposed. To ensure the wall integrity, we recommended the joints be repointed and the penetrations and wall recesses be infilled with brick (clay or concrete) or block.

OBSERVATION REPORT
CMU

Date:	10/02/17
Time:	2:00 PM
Temp:	65 F
Weather:	Partly Cloudy

Project:	Waynflete Lower School
Location:	Portland, ME
Becker Job No:	3660.90

Observation Location: Elevator shaft from Lower Level to Main Level.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Placement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Embed/Anchors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Lap Splices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reviewed splices in bond beam at main level. At lower level cleanouts could not see vertical bar splices (occurred above first course).
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
CMU Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Layout/Fit-up/Plumbness	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mortar/Grouting Procedure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lift Height	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Clean Outs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Bond Beams	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Notes:

Signed: Alexander Wheelock, E.I.

Alex Wheelock

From: Alex Wheelock
Sent: Wednesday, October 11, 2017 3:54 PM
To: phil@pmlprojectmanagement.com
Cc: 'Tom Carey'; Dan Burne; 'Julia Tate'; 'Millard Nadeau'
Subject: RE: Waynflete - SI Reports 9/19 & 9/29

You're welcome Phil, I have no concerns regarding the splices/reinforcing.

Thank you,

Alexander R. Wheelock, E.I.
Project Engineer
Becker Structural Engineers, Inc.
direct 207.879.1838 x123
www.beckerstructural.com

From: phil@pmlprojectmanagement.com [mailto:phil@pmlprojectmanagement.com]
Sent: Wednesday, October 11, 2017 3:44 PM
To: Alex Wheelock
Cc: 'Tom Carey'; Dan Burne; 'Julia Tate'; 'Millard Nadeau'
Subject: RE: Waynflete - SI Reports 9/19 & 9/29

Thanks Alex.

I assume that you are confident that the splices are correctly installed, or that we can be sure that the reinforcing is acceptable, in light of Dan's Special Inspections Program. Correct?

Thanks.
Phil

PML Project Management, Inc.
193 Parsons Road
Norway, Maine 04268

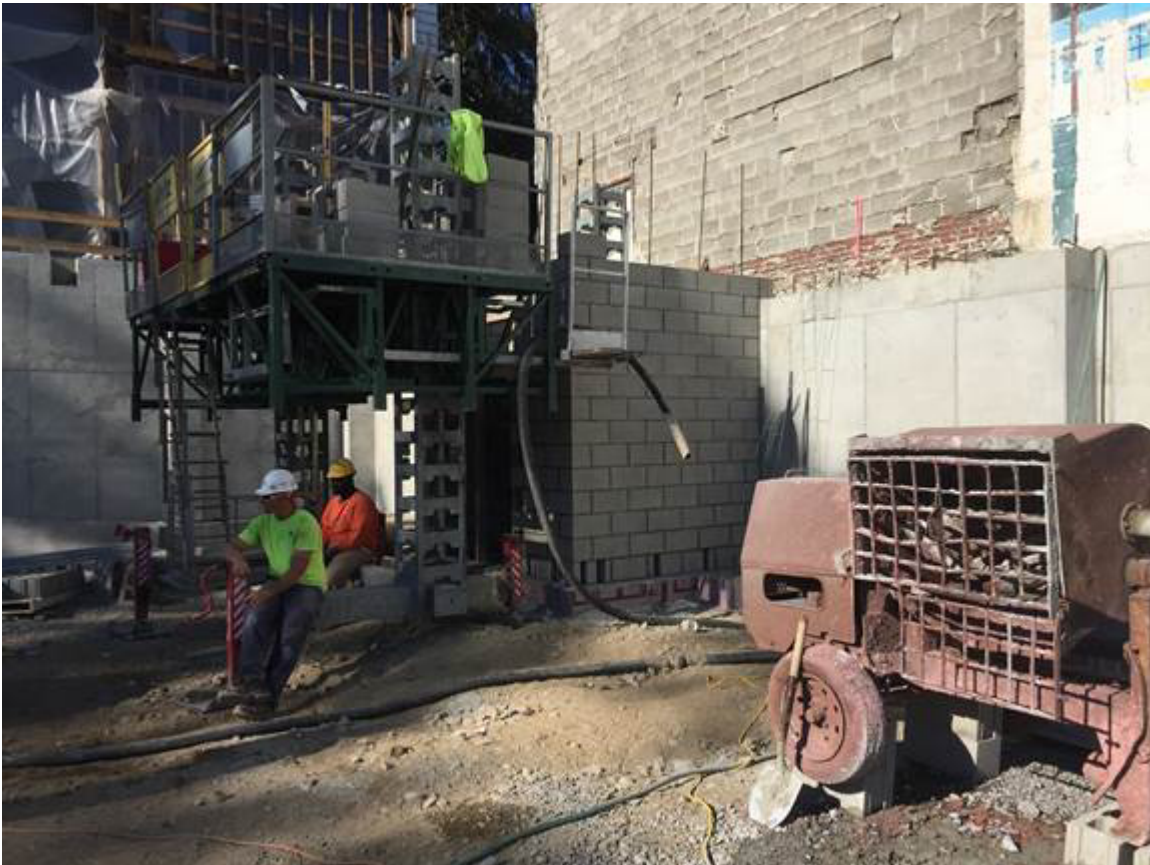
(603) 313-5500

From: Alex Wheelock [mailto:awheelock@beckerstructural.com]
Sent: Wednesday, October 11, 2017 3:26 PM
To: phil@pmlprojectmanagement.com
Cc: 'Tom Carey' <tcarey@wright-ryan.com>; Dan Burne <dan@beckerstructural.com>; 'Julia Tate' <julia@simonsarchitects.com>; 'Millard Nadeau' <mnadeau@wright-ryan.com>
Subject: RE: Waynflete - SI Reports 9/19 & 9/29

Good afternoon Phil,

Below are a few photos from my visit to help clarify. The grouting was high lift. You can see the knockouts at the base of the wall and the rebar inside. I was only able to see one bar at the knockout locations identifying to me that the splice

occurred above the first course. However, I was unable to verify the total lap length as the splice occurred within the wall (not visible). Let me know if you have any other questions.



Thank you,

Alexander R. Wheelock, E.I.
Project Engineer
Becker Structural Engineers, Inc.
direct 207.879.1838 x123
www.beckerstructural.com

From: phil@pmlprojectmanagement.com [<mailto:phil@pmlprojectmanagement.com>]
Sent: Wednesday, October 11, 2017 3:08 PM
To: Alex Wheelock
Cc: 'Tom Carey'; Dan Burne; 'Julia Tate'; 'Millard Nadeau'
Subject: RE: Waynflete - SI Reports 9/19 & 9/29

Thanks Alex.

Can you please clarify for the elevator shaft comments. I didn't see any view ports, and I understand that the grouting was done as "low-lift", but your notes seem to say that the splices were not visible. I think I've missed something in the report.

Thanks,
Phil

PML Project Management, Inc.
193 Parsons Road
Norway, Maine 04268

(603) 313-5500

From: Alex Wheelock [<mailto:awheelock@beckerstructural.com>]
Sent: Wednesday, October 11, 2017 9:38 AM
To: Phil LaClaire <phil@pmlprojectmanagement.com>; Julia Tate <julia@simonsarchitects.com>; Millard Nadeau (mnadeau@wright-ryan.com) <mnadeau@wright-ryan.com>
Cc: Tom Carey <tcarey@wright-ryan.com>; Dan Burne <dan@beckerstructural.com>
Subject: RE: Waynflete - SI Reports 9/19 & 9/29

Good Afternoon,

Please see attached for the SI reports from my site visit yesterday and last week. Let me know if you have any questions/comments.

Thank you,

Alexander R. Wheelock, E.I.
Project Engineer
Becker Structural Engineers, Inc.
direct 207.879.1838 x123
www.beckerstructural.com

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Report of Grout Specimen Compressive Strength

ASTM C1019

Project Name: Portland ME - Waynflete Lower School Addition and Renovations - Construction Materials Testing Services

Project Number: 15-0577.1

Client: The Waynflete School

Client Contract Number:

General

Contractor:

Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 10/2/2017 **Time Cast:** 4:12 **Date Received:** 10/3/2017

Placement Location: ELEVATOR SHAFT

Placement Method: PUMP

Placement Vol. (yd³): 1.5

Specimen Made By: PETER PHELAN

Aggregate Size (in):

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) NT **Maximum (°F)** NT

DELIVERY INFORMATION

Admixtures:

TEST RESULTS

Slump (in) (C-143):

Batch Number: 1

Air Temp (°F): 69

Mixer Number:

Grout Temp (°F) (C-1064): 74

Ticket Number:

Design (psi): 3000

Specimen Designation	Area(In) ²	Date Of Test	Age (days)	Load (kips)	Strength (psi)
959-7A	11.55	10/9/2017	7	42.2	3550
959-7B	11.82	11/2/2017	31	51.6	4290
959-7C	12.00	11/2/2017	31	52.4	4320
959-7D					

Remarks:



Report of Mortar Compressive Strength

ASTM C109

Project Name: Portland ME - Waynflete Lower School Addition and Renovations - Construction Materials Testing Services

Project Number: 15-0577.1

Client: The Waynflete School

Client Contract Number:

General Contractor:

Masonry Contractor: ON-SITE

PLACEMENT INFORMATION

Date Cast: 10/3/2017 **Time Cast:** 8:00 **Date Received:** 10/5/2017

Placement Location: 8" CMU ELEVATOR SHAFT A T 16 COURSES HIGH

Batch Method: TROWEL

Product Manufacturer:

Specimens Made By: CHARLES CROMWELL

Aggregate:

INITIAL CURING CONDITIONS

Min. Temp (°F) NT Max. Temp (°F) NT

MIX INFORMATION

Mortar Type: S

Admixtures:

TEST RESULTS

Air Temp (°F): 55

Mortar Temp (°F) (C-1064): 67

Ambient RH (%):

Flow Cone (%):

Cube Designation	Area(In) ²	Date Of Test	Age (days)	Load (kips)	Strength (psi)
959-8A	4.07	10/10/2017	7	7.6	1870
959-8B	4.00	10/10/2017	7	7.6	1900
959-8C	4.09	10/10/2017	7	8.0	1960
959-8D	4.03	10/31/2017	28	10.4	2580
959-8E	4.04	10/31/2017	28	10.4	2570
959-8F	4.04	10/31/2017	28	10.0	2480

Remarks:

Note: ASTM C270 specifies mortar testing under laboratory conditions only for acceptance of mortar mixes under the property specification. Field sampling and testing of mortar is conducted under ASTM C780 and is used to verify consistency of materials and procedures, not mortar strength.



Submittal

Job: 171070
Waynflete Lower School
360 Spring Street
Portland, ME 04102

Spec Section No: 042000
Submittal No: 006
Revision No: 1
Sent Date: 9/29/2017

Spec Section Title: Unit Masonry
Submittal Title: Product Data - Grout

Contractor:
Wright-Ryan Construction, Inc.

Other:
Scott Simons Architects
Adam Wiles-Rosell

SUBMITTAL REVIEW:
Reviewed for general conformance with the design concept and contract documents. Markings or comments shall not be construed as relieving the Subcontractor from compliance with the project plans and specifications, nor departure therefrom. The Subcontractor remains responsible for details and accuracy, for conforming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of assembly and for performing the work in a safe manner.
WRIGHT-RYAN CONSTRUCTION, INC
BY: Nick Barto DATE: 9/29/2017

Architect's Stamp

Reviewed Furnish as Corrected
 Rejected Revise and Resubmit
 Submit Specific Item

This review is only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Corrections or comments made on the shop drawings during this review do not relieve contractor from compliance with the requirements of the plans and specifications. Approval of a specific item shall not include approval of an assembly of which the item is a component. Contractor is responsible for: dimensions to be confirmed and correlated at the jobsite; information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction; coordination of his or her Work with that of all other trades; and for performing all work in a safe and satisfactory manner.

Becker Structural Engineers, Inc
Date: 10/02/2017 By: ARW



COASTAL

MASONRY &
CONTRACTING

PO Box 703, South Freeport, ME 04078
 E-mail: coastalmasonry.martin@gmail.com
 Phone: 207.400.9026

To:	Wright Ryan 10 Danforth Street Portland, ME 04101	Subject:	Masonry Submittals
		Project:	Waynefleet Lower School
		Date:	9/29/2017
		Location:	Grout - Resubmittal
GC	Wright Ryan	Description:	Rigid Insulation Revision

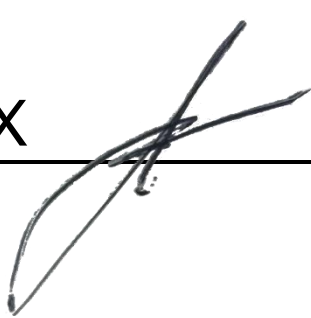
WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
<input type="checkbox"/> Shop Drawings	<input checked="" type="checkbox"/> Approval	<input type="checkbox"/> Approved
<input type="checkbox"/> Letter	<input type="checkbox"/> Review and Comment	<input type="checkbox"/> Approved as Noted
<input type="checkbox"/> Prints	<input type="checkbox"/> Required	<input type="checkbox"/> Resubmit with Corrections
<input type="checkbox"/> Change Order	SENT VIA	<input type="checkbox"/> Rejected
<input type="checkbox"/> Plans	<input checked="" type="checkbox"/> Attached	<input type="checkbox"/> Other
<input checked="" type="checkbox"/> Submittal	<input type="checkbox"/> Mail	
<input type="checkbox"/> Samples	<input type="checkbox"/> Fax	

Submittal #5B

Division - #4

Supplier – Auburn Concrete

Signed: Jan Martin Owner

X _____




AUBURN - 82 Goldthwaite Road
WESTBROOK - 93 Scott Drive
WEST BATH - 50 Arthur Reno Sr Road
AUGUSTA - 2 Hard Rock Road
TOPSHAM - 26 Meadow Road Ext.

Main Office: P.O. Box 1747 • Auburn, Maine 04210

Phone: (207) 777-7100 • Fax: (207) 777-7171

Submittal Number: 17-000197 Version: 3
 9/29/2017

Customer: COASTAL MASONRY & CONTRACTING
 Customer Contact: MIKAELA MARTIN

Project: WAYNFLETE LOWER SCHOOL ADDITION & RENOVATIONS
 Job Location: 360 SPRING ST - PORTLAND, MAINE
 Project Contact: MIKAELA MARTIN

Dear ,

All the materials and concrete delivered to this project will conform to ASTM C-94, ACI 301 and ACI 318 Specifications for Auburn Concrete.

This submission contains the following mix designs:

Mix Code	Spec Strength	Notes
5F13FNBLK	3000	

Please have your personnel place the order for concrete using the designated mix number to our dispatch office.

Thank you for giving us the opportunity to be of service to you. Please feel free to contact me if you should need any further assistance.

Sincerely yours,

SAM ROY, Quality Control

207-777-7100 | sam@auburnconcrete.com |

AUBURN CONCRETE - 2017 AGGREGATE SOURCES -ASTM C33 TESTS

SOURCE: PORTLAND SAND & GRAVEL, INC. - Mayall Road - Gray, ME

SAND Natural deposit, screened

GRADATION 2017 ASTM C136: (Percent Passing)

	FM	3/8"	#4	#8	#16	#30	#50	#100	#200
	2.70	100.0	97.0	90.0	74.0	46.0	19.0	5.0	1.0
SPEC:	2.3 - 3.1	100	95-100	80-100	50-85	25-60	10-30	2-10	<3

ORGANIC IMPURITIES IN FINE AGGREGATE ASTM C40:

1

SPECIFIC GRAVITY ASTM C128:

2.62 ABSORPTION 0.79%

SULFATE SOUNDNESS ASTM C88 (Magnesium Sulfate):

3.2% (weighted loss)

CLAY LUMPS & FRIABLE PARTICLES ASTM C 142:

0.60

BULK DENSITY (SSD) ASTM C29:

101.0 pcf

POTENTIAL ASR REACTIVITY ASTM C1260:

0.04% 14 days 0.09% 28 days%

SAND EQUIVALENT VALUE ASTM D2419

88

SOURCE: AUBURN AGGREGATES - CHRISTIAN HILL QUARRY- AUBURN. ME

(3/8") **GRADATION 2017 Y-T-D (AVG.) (Percent Passing)**

		1/2"	3/8"	#4	#8	#16	#200
		100	95.0	20.0	8.0	5.0	1.0
SPEC:	# 8	100	85-100	10-30	0-10	0-5	<1.5
	# 89	100	90-100	20-55	0-10	0-5	<1.5

05/10/16 **RESISTANCE TO DEGREDDATION (LA WEAR) ASTM C131:** 8.0%(100 REV.) 34.5%(500 REV.)

REPORT OF MICRO DEVAL DEGRADATION

13.9%

SPECIFIC GRAVITY ASTM C127:

2.69 ABSORPTION: 0.68%

SULFATE SOUNDNESS ASTM C88 (Magnesium Sulfate):

2.30% (Weighted loss)

CLAY LUMPS & FRIABLE PARTICLES ASTM C 142:

0.40%

BULK DENSITY (SSD) ASTM C29:

101.6 pcf

POTENTIAL ASR REACTIVITY ASTM C1260:

0.05% 14 days

FLAT & ELONGATED PARTICLES ASTM D4791:

1.20%

STONE Quarried ledge, crushed, screened, washed

(3/4") **GRADATION 2017 Y-T-D (AVG.) (Percent Passing)**

		1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#200
		100.0	100.0	96.0	55.0	31.0	4.0	2.0	0.9
SPEC:	# 57	100	95-100	-----	25-60	-----	0-10	0-5	<1.5
	# 67	100	100	90-100	-----	20-55	0-10	0-5	<1.5

RESISTANCE TO DEGREDDATION (LA WEAR) ASTM C131: 7.0%(100 Rev.) 33.0%(500 REV.)

REPORT OF MICRO DEVAL DEGRADATION

12.7%

SPECIFIC GRAVITY ASTM C127:

2.70 ABSORPTION: 0.46%

SULFATE SOUNDNESS ASTM C88 (Magnesium Sulfate):

5.7%

CLAY LUMPS & FRIABLE PARTICLES ASTM C 142:

0.40%

BULK DENSITY (SSD) ASTM C29:

99.0 pcf

FLAT & ELONGATED PARTICLES ASTM D4791:

1.60%

POTENTIAL ASR REACTIVITY ASTM C1260:

0.05% 14 days 0.12% 28 days

(1 1/2") **GRADATION 2017 Y-T-D (AVG.) (Percent Passing)**

		2"	1 1/2"	1"	3/4"	1/2"	3/8"	#200
		100.0	100.0	78.0	15.0	5.0	3.0	0.6
SPEC:	#4	100	90-100	20-55	0-15	-----	0-5	<1.5

RESISTANCE TO DEGREDDATION (LA WEAR) ASTM C131: 7.6%(100 REV.) 35.6%(500 REV.)

SPECIFIC GRAVITY ASTM C127:

2.70 ABSORPTION: 0.39%

SULFATE SOUNDNESS ASTM C88 (Magnesium Sulfate):

3.1%

CLAY LUMPS & FRIABLE PARTICLES ASTM C 142:

0.40%

BULK DENSITY (SSD) ASTM C29:

96.3 pcf

FLAT & ELONGATED PARTICLES ASTM D4791:

1.80%



AUBURN - 82 Goldthwaite Road
 WESTBROOK - 93 Scott Drive
 WEST BATH - 50 Arthur Reno Sr Road
 AUGUSTA - 2 Hard Rock Road
 TOPSHAM- 26 Meadow Road Ext.

Main Office: P.O. Box 1747 • Auburn, Maine 04210

Phone: (207) 777-7100 • Fax: (207) 777-7171

COASTAL MASONRY & CONTRACTING
 WAYNFLETE LOWER SCHOOL ADDITION & RENOVATIONS

1:3 BLOCKFILL						
Mix Design Submittal						
09/29/2017		5F13FNBLK				
Material Type	Description	Source Supplier	ASTM	Design Quantity	Volume (ft3)	
Cement	CEMENT (TYPE I)	Dragon-Thomaston, ME	C150	800.00 lb	4.07	
Water	WATER	Portland Water District Municipal Supply	C1602	46.20 gal	6.18	
Fine Aggregate	CONCRETE SAND	Portland Sand & Gravel-Gray, ME	C33	2550.00 lb	15.66	
Admixture	MASTERGLENIUM 7500	BASF-MasterBuilders, N.A.	C494	3.00 /cwt	-	
				Air Content	4.00 %	1.08
				Yield	3735 lb	26.98

	Design	Tolerance
Air Content	4	+/-1.50
Slump	9	+/-1.0
Design Strength	3000	psi
Unit Weight	138.4	lb/ft3
W/C Ratio	0.48	

NOTES

* The mix proportion shown is expressed in terms of mass as opposed to volume that is cited in the ASTM C476 standard.
 Loose volume of cement is 94 pcf, PS&G sand has bulk density of 101.5 pcf.
 The ratio for corresponding volumes of the batchweights shown is 8.5 : 25 (1 : 2.95).

Prepared By :

SAM ROY

Quality Control



AUBURN - 82 Goldthwaite Road
WESTBROOK - 93 Scott Drive
WEST BATH - 50 Arthur Reno Sr Road
AUGUSTA - 2 Hard Rock Road
TOPSHAM- 26 Meadow Road Ext.

Main Office: P.O. Box 1747 • Auburn, Maine 04210

Phone: (207) 777-7100 • Fax: (207) 777-7171

PIPER SHORES - 1:3 FINE GROUT JULY 2016

Date : 1/30/2017

Mix Code : 5F13FNBLK

Plant : AUBURN

Description : 1:3 BLOCKFILL

Specifications

Strength PSI : 3000

Slump : FLOWABLE

Air Percent: 4 %

Material Type	Description	Supplier Source	Design Quantity	Specific Gravity	Volume ft3	
Cement	CEMENT (TYPEII)	Dragon-Thomaston, ME	800 lb	3.15	4.07	
Water	WATER	Auburn Water DEPT-Municipal Supply	46.2 gal	1.00	6.18	
Fine Aggregate	CONCRETE SAND	Portland Sand & Gravel-Gray, ME	2550 lb	2.61	15.66	
Admixture	MASTERGLENIUM 7500	BASF-MasterBuilders, N.A.	3.0 /cwt	-	-	
			Air Content	4.00 %	--	1.08
			Yield	3735lb	--	26.98

R.W. GILLESPIE & ASSOCIATES
GROUT TEST/PLACEMENT REPORT

ASTM C 1019

Project Name:	Piper Shores Assisted Care and Memory	Date Cylinders Cast:	Wednesday, August 03, 2016
Project No:	1530-001	Grout Supplier:	Auburn Concrete
Client:	Piper Shores	General Contractor:	Hebert Construction
Weather Conditions:	Sunny	Design Strength:	2000 PSI
Placement Method:	Pump	Admixtures:	-

Placement Location:
 CMU Line8/DD-ZZ, Elevation 68' to 73'

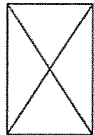
Prisims Location:
 Line 8/HH, Height 70'

Date Report Issued:

Load Number:	1 of 1	Number of 3x3x6 Prisims	4
Ticket Number:	-	Cast By:	Patrick J. Roma
Truck Number:	-	Slump:	ASTM C 143 - in.
Cubic Yards:	-	Air Temperature:	- °F
Total Yardage:	-	Grout Temperature:	- °F
Total Time (minutes):	-		

Field Cure Days: 1
 Date Received: 8/4/2016
 Condition of Cylinders: Good

Lab No.	Test Date	Ave. Dia. (in)	Ave. Area (in ²)	Age (days)	Load (lbs)	Compressive Strength (psi)	Break Type
84366	8/10/2016	3.312x3.399	11.25	7	36585	3250	3
84367	8/31/2016	3.355,3.373	11.31	28	55385	4900	4
84368	8/31/2016	3.437x3.416	11.74	28	54095	4610	3
84369	HOLD			H			



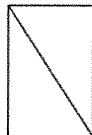
Cone
1



Cone & Split
2



Columnar
3



Shear
4

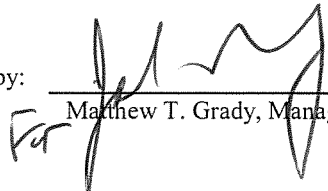


Side Fracture
5



Double Side Fracture
6

Remarks:

Checked by: 
 Matthew T. Grady, Manager of MTS



R.W. GILLESPIE & ASSOCIATES
GROUT TEST/PLACEMENT REPORT

ASTM C 1019

Project Name:	Piper Shores Assisted Care and Memory	Date Cylinders Cast:	Wednesday, July 27, 2016
Project No:	1530-001	Grout Supplier:	Auburn Concrete
Client:	Piper Shores	General Contractor:	
Weather Conditions:	Sunny	Design Strength:	2000 PSI
Placement Method:	Pump	Admixtures:	-

Placement Location:
 CMU wall Line 8/CC-ZZ

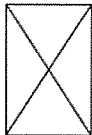
Prisims Location:
 5' from east end

Date Report Issued:

Load Number:	1 of 1	Number of 3x3x6 Prisims	4
Ticket Number:	-	Cast By:	Joshua R. Fancy
Truck Number:	-	Slump:	ASTM C 143 - in.
Cubic Yards:	-	Air Temperature:	85 °F
Total Yardage:	-	Grout Temperature:	- °F
Total Time (minutes):	-		

Field Cure Days: 1
 Date Received: 7/28/2016
 Condition of Cylinders: Good
 Curing Temperatures: 74 °F to 87 °F

Lab No.	Test Date	Ave. Dia. (in)	Ave. Area (in ²)	Age (days)	Load (lbs)	Compressive Strength (psi)	Break Type
84189	8/3/2016	3.324x3.410	11.33	7	40160	3540	2
84190	8/24/2016	3.263x3.282	10.70	28	48125	4500	4
84191	8/24/2016	3.27x3.7801	10.72	28	47760	4460	4
84192	8/24/2016	3.27x3.7801	12.25	28	51250	4180	4



Cone
1



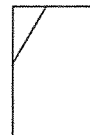
Cone & Split
2



Columnar
3



Shear
4

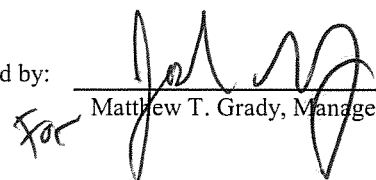


Side Fracture
5



Double Side Fracture
6

Remarks:

Checked by: 
 For Matthew T. Grady, Manager of MTS



R.W. GILLESPIE & ASSOCIATES, INC

R.W. GILLESPIE & ASSOCIATES
GROUT TEST/PLACEMENT REPORT

ASTM C 1019

Project Name:	Piper Shores Assisted Care and Memory	Date Cylinders Cast:	Tuesday, August 09, 2016
Project No:	1530-001	Grout Supplier:	Auburn Concrete
Client:	Piper Shores	General Contractor:	Hebert Construction
Weather Conditions:	sunny	Design Strength:	2000 PSI
Placement Method:	Pump	Admixtures:	Retarder/ Master Set

Placement Location:

Wall line B

Prisims Location:

Line HH/8, on. 75'

Date Report Issued:

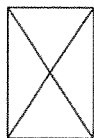
Load Number:	1 of 1	Number of 3x3x6 Prisims	4
Ticket Number:	296376	Cast By:	Matt T. Grady
Truck Number:	143	Slump:	ASTM C 143 10.00 in.
Cubic Yards:	2	Air Temperature:	10.00 °F
Total Yardage:	2	Grout Temperature:	10.00 °F
Total Time (minutes):	2		

Field Cure Days: 1

Date Received: 8/10/2016

Condition of Cylinders: Good

Lab No.	Test Date	Ave. Dia. (in)	Ave. Area (in ²)	Age (days)	Load (lbs)	Compressive Strength (psi)	Break Type
84487	8/16/2016	3.451x3.425	12.52	7	17675	1410	3
84488	9/6/2016	3.412x3.162	10.79	28	54385	5040	5
84489	9/6/2016	3.422x3.415	11.69	28	56350	4820	4
84490	HOLD			h			



Cone
1



Cone & Split
2



Columnar
3



Shear
4




Side Fracture
5



Double Side Fracture
6

Remarks:

Checked by:


 Matthew T. Grady, Manager of MTS



R.W. GILLESPIE & ASSOCIATES, INC



AUBURN - 82 Goldthwaite Road
 WESTBROOK - 93 Scott Drive
 WEST BATH - 50 Arthur Reno Sr Road
 AUGUSTA - 2 Hard Rock Road
 TOPSHAM - 26 Meadow Road Ext.

Main Office: P.O. Box 1747 • Auburn, Maine 04210

Phone: (207) 777-7100 • Fax: (207) 777-7171

Aggregate Sample Report

Material : 2051 - CONCRETE SAND

Date : 30 Aug 2017

Supplier : PORTSAND - Portland Sand & Gravel

Sample Date From : 01 Jan 2001

Supplier Ref No. :

Sample Date To : 30 Aug 2017

Source : Gray, ME

Grading Specification : MDOT FINE (ASTM C33)

% Passing

Sample Date	Sample ID	3/8"	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	No. 200	FM	SG	Absorp
	Min Pass	100.0	95.0	80.0	50.0	25.0	10.0	2.0	0.0			
	Max Pass	100.0	100.0	100.0	85.0	60.0	30.0	10.0	5.0			
7/10/2017	07102017AUB2	100.0	98.0	90.5	71.0	39.0	12.0	2.5	0.5	2.87		
	07102017AUB2.	100.0	98.5	92.0	77.0	50.5	20.0	4.5	1.0	2.58		
7/11/2017	07112017AUB	100.0	98.0	92.0	77.5	49.0	18.5	4.0	1.0	2.61		
7/12/2017	07122017AUB	100.0	98.0	92.0	77.0	48.5	18.5	4.0	1.0	2.61		
7/13/2017	07132017AUB	100.0	98.0	92.5	78.5	50.0	18.5	4.0	1.0	2.59		
7/14/2017	07142017AUB	100.0	97.5	91.0	73.0	42.0	14.5	3.5	1.0	2.78		
7/17/2017	07172017PIT	100.0	98.5	92.5	76.5	46.0	17.5	4.0	1.0	2.65		
	07172017AUB	100.0	97.0	91.0	76.5	49.5	20.0	4.5	1.0	2.61		
7/19/2017	07192017W	100.0	98.5	93.0	78.5	47.0	17.5	4.5	1.0	2.61		
7/21/2017	07212017	100.0	98.0	92.5	77.5	46.5	18.0	5.0	1.0	2.63		
	07212017PIT	100.0	98.5	93.0	77.5	47.5	15.0	2.5	0.5	2.66		
7/24/2017	07242017WBA	100.0	97.5	92.0	72.0	43.5	13.0	2.5	0.5	2.79		
	07242017TOP	100.0	98.0	91.5	76.0	47.5	18.0	4.0	1.0	2.65		
7/25/2017	072517w	100.0	97.0	90.5	74.5	40.0	11.5	2.5	0.5	2.84		
	07252017AUB	100.0	97.0	89.0	71.0	43.0	15.0	3.5	0.5	2.81		
	07252017PIT1	100.0	97.5	89.5	70.0	50.5	14.5	3.0	0.5	2.75		
	072517w2	100.0	98.0	90.5	74.0	41.0	14.0	3.0	0.5	2.79		
	07252017PIT2	100.0	98.0	90.0	72.0	50.5	14.5	3.0	0.5	2.72		
7/26/2017	07262017PIT	100.0	97.5	90.0	71.5	41.5	13.5	3.0	1.0	2.83		
7/27/2017	07272017PIT	100.0	98.5	93.0	78.5	49.0	16.0	3.0	0.5	2.62		
7/31/2017	07312017AUB	100.0	98.0	91.5	75.5	48.0	18.5	4.0	1.0	2.65		
	07312017PIT	100.0	97.5	90.0	72.0	38.0	11.5	2.0	0.5	2.88		
8/1/2017	08012017WBA	100.0	98.0	92.0	76.5	47.0	16.0	3.5	1.0	2.67		
	08012017PIT	100.0	98.5	93.0	78.0	49.5	17.0	3.0	0.5	2.61		
8/2/2017	08022017W	100.0	97.5	91.0	76.0	43.0	14.0	3.5	0.5	2.76		
8/4/2017	08042017AUB1	100.0	98.0	92.5	80.0	56.5	23.5	5.0	1.0	2.45		
8/7/2017	08072017POR	100.0	98.5	93.0	79.5	51.0	18.0	4.0	1.0	2.56		
	08072017WBA	100.0	98.0	92.5	78.5	52.0	20.5	4.5	1.0	2.54		

Approved By :

sroy

Certification # :



AUBURN - 82 Goldthwaite Road
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Aggregate Sample Report

Sample Date	Sample ID	3/8"	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	No. 200	FM	SG	Absorp
8/8/2017	08082017AUB	100.0	97.5	91.0	74.0	43.5	15.0	3.5	1.0	2.76		
8/9/2017	08092017AUB	100.0	98.0	92.0	76.0	46.0	15.5	3.5	0.5	2.69		
	08092017AUB2	100.0	98.0	91.5	75.0	47.0	16.5	3.5	1.0	2.69		
8/10/2017	08102017AUB	100.0	98.0	91.5	74.5	47.0	17.5	3.5	1.0	2.68		
	08102017AUG	100.0	98.0	92.0	78.5	51.0	19.0	4.0	1.0	2.57		
8/14/2017	08142017PIT	100.0	97.5	90.0	73.5	45.5	19.0	4.0	1.0	2.71		
	08142017AUB	100.0	98.0	92.0	76.5	47.0	16.5	3.5	1.0	2.67		
8/15/2017	08152017AUB1	100.0	97.5	90.0	74.0	47.5	19.5	4.5	1.0	2.67		
	08152017BATH	100.0	98.5	91.5	74.5	46.5	17.5	3.5	1.0	2.68		
8/16/2017	08152017AUB	100.0	98.0	91.0	76.0	49.0	20.0	4.5	1.0	2.62		
8/17/2017	08172017AUB2	100.0	97.0	89.0	73.5	48.0	20.5	4.5	1.0	2.68		
8/18/2017	08182017AUB	100.0	97.0	90.0	74.0	49.5	20.5	4.5	1.0	2.65		
8/21/2017	08212017AUB	100.0	98.0	90.5	72.0	48.0	20.5	4.5	1.0	2.67		
	08212017POR	100.0	97.0	89.0	70.5	44.0	18.0	4.0	1.0	2.78		
8/22/2017	08222017AUB1	100.0	97.0	89.5	73.5	48.0	20.5	4.5	1.0	2.67		
	08222017AUB	100.0	97.5	90.5	74.5	44.5	15.0	3.0	0.5	2.75		
8/23/2017	08232017PIT	100.0	97.5	90.0	74.5	50.0	20.5	4.0	1.0	2.63		
	08232017PIT2	100.0	96.5	90.0	78.0	58.0	27.5	4.5	1.0	2.45		
	08232017PIT3	100.0	98.5	95.0	86.0	65.5	28.0	4.0	0.5	2.23		
8/25/2017	08252017PIT1	100.0	97.5	89.5	71.0	43.0	18.0	4.5	1.0	2.77		
8/28/2017	08282017AUB	100.0	96.5	89.0	72.5	46.0	18.0	4.0	1.0	2.74		
8/30/2017	08302017W	100.0	97.5	91.0	77.5	47.0	18.0	5.0	1.0	2.64		

	3/8"	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	No. 200	FM
Count	50	50	50	50	50	50	50	50	50
AVG	100.0	98.0	91.0	75.5	47.5	17.5	4.0	1.0	2.67
ST DEV	0.0	0.5	1.5	3.0	4.5	3.5	0.5	0.0	0.11
Range Min	100.0	96.5	89.0	70.0	38.0	11.5	2.0	0.5	2.23
Range Max	100.0	98.5	95.0	86.0	65.5	28.0	5.0	1.0	2.88
COV	0.0	0.5	1.5	4.0	10.0	19.0	19.5	27.0	4.26

Fineness Modulus 2.6697

Approved By :

sroy

Certification # :



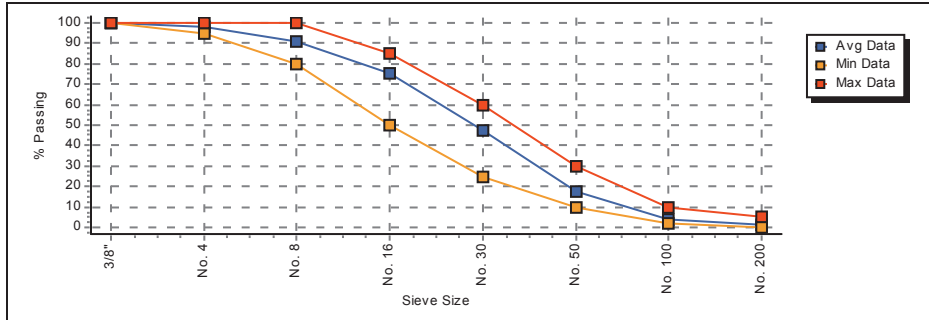
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Aggregate Sample Report

Average Grading



Approved By :

sroy

Certification # :



P.O. Box 191, U.S. Route 1 • Thomaston, Maine 04861 • 207-594-5555

MILL TEST RESULTS	Date: May, 2017 (issued June 6, 2017)
Laboratory at Thomaston, Maine	Cement Type: I / II
	Silo Numbers: 20, 24, 27 & 30

CHEMICAL DATA	Percent	PHYSICAL DATA	
Silicon Dioxide.....	20.6	Specific Surface.....	366
Aluminum Dioxide.....	3.6	Blaine (sq m /kg)	
Ferric Oxide.....	3.0	(Per ASTM C 204)	
Calcium Oxide.....	63.0	Percent Passing 325 Mesh	98.2
Magnesium Oxide.....	3.3	(Per ASTM C 430)	
Sulphur Trioxide.....	3.7	Compressive Strength (psi)	
Loss on Ignition.....	2.2	(Per ASTM C 109)	
Insoluble Residue.....	0.4	1 day.....	2130
		3 day.....	3870
Tricalcium Silicate.....	59	7 day.....	5050
Dicalcium Silicate.....	12	28 day.....	
Tricalcium Aluminate.....	4	Vicat Setting Time	
Sum of C3S + 4.75*C3A....	80	(Per ASTM C 191)	
Sum of C4AF + 2*C3A.....	17	Initial (min.).....	125
		Final (min.).....	200
Sodium Oxide.....	0.3	Air Content (%),.....	7.9
Potassium Oxide.....	1.2	(Per ASTM C 185)	
Equivalent Alkalies.....	1.11	Autoclave Expansion (%),...	0.05
		(Per ASTM C 151)	
Limestone Addition	2.9	Expansion in water (%),....	0.015
CaCO ₃ in Limestone	90.9	(Per ASTM C 1038)	
(Chemical Analysis all per ASTM C 114)		Sulfate Resistance (% exp)	0.012
		(Per ASTM C 452)	
Heat of Hydration (cal/g) ..	81		
(7 day result Per ASTM C186)			

Certified by:


 Jennifer Lynn Small
 Quality Control & Distribution Manager

We hereby certify that this cement complies with current ASTM C 150, AASHTO M-85 and CSA A3001 Type GU, MS and HS specifications.

Testing was completed by Brian Secord.
 This mill test report is generated for silos produced in the calendar month prior to the date upon this report.

MasterGlenium® 7500

Full-Range Water-Reducing Admixture

Formerly GLENium 7500*

Description

MasterGlenium 7500 full-range water-reducing admixture is very effective in producing concrete mixtures with different levels of workability including applications that require self-consolidating concrete (SCC). MasterGlenium 7500 admixture meets ASTM C 494/C 494M compliance requirements for Type A, water-reducing, and Type F, high-range water-reducing, admixtures.

Applications

Recommended for use in:

- Concrete with varying water reduction requirements (5-40%)
- Concrete where control of workability and setting time is critical
- Concrete where high flowability, increased stability, high-early and ultimate strengths, and improved durability are needed
- Producing self-consolidating concrete (SCC)
- Strength-on-demand concrete, such as 4x4™ Concrete
- Pervious concrete

Features

MasterGlenium 7500 full-range water-reducing admixture is based on the next generation of polycarboxylate technology found in all of the MasterGlenium 7000 series products. This technology combines state-of-the-art molecular engineering with a precise understanding of regional cements to provide specific and exceptional value to all phases of the concrete construction process.

- Dosage flexibility for normal, mid-range and high-range applications
- Excellent early strength development
- Controls setting characteristics
- Optimizes slump retention/setting relationship
- Consistent air entrainment

Benefits

- Faster turnover of forms due to accelerated early strength development
- Reduces finishing labor costs due to optimized set times
- Use in fast track construction
- Minimizes the need for slump adjustments at the jobsite
- Less jobsite QC support required
- Fewer rejected loads
- Optimizes concrete mixture costs

Performance Characteristics

Concrete produced with MasterGlenium 7500 admixture achieves significantly higher early age strength than first generation polycarboxylate high-range water-reducing admixtures. MasterGlenium 7500 admixture also strikes the perfect balance between workability retention and setting characteristics in order to provide efficiency in placing and finishing concrete. The dosage flexibility of MasterGlenium 7500 allows it to be used as a normal, mid-range, and high-range water reducer.

Guidelines for Use

Dosage: MasterGlenium 7500 admixture has a recommended dosage range of 2-15 fl oz/cwt (130-975 mL/100 kg) of cementitious materials. For most mid- to high-range applications, dosages in the range of 5-8 fl oz/cwt (325-520 mL/100 kg) will provide excellent performance. For high performance and producing self-consolidating concrete mixtures, dosages of up to 12 fl oz/cwt (780 mL/100 kg) of cementitious materials can be utilized. Because of variations in concrete materials, jobsite conditions and/or applications, dosages outside of the recommended range may be required. In such cases, contact your local sales representative.

Mixing: MasterGlenium 7500 admixture can be added with the initial batch water or as a delayed addition. However, optimum water reduction is generally obtained with a delayed addition.

Product Notes

Corrosivity – Non-Chloride, Non-Corrosive: MasterGlenium 7500 admixture will neither initiate nor promote corrosion of reinforcing steel embedded in concrete, prestressing steel or of galvanized steel floor and roof systems. Neither calcium chloride nor other chloride-based ingredients are used in the manufacture of MasterGlenium 7500 admixture.

Compatibility: MasterGlenium 7500 admixture is compatible with most admixtures used in the production of quality concrete, including normal, mid-range and high-range water-reducing admixtures, air-entrainers, accelerators, retarders, extended set control admixtures, corrosion inhibitors, and shrinkage reducers.

Do not use MasterGlenium 7500 admixture with admixtures containing beta-naphthalene sulfonate. Erratic behaviors in slump, workability retention and pumpability may be experienced.

Storage and Handling

Storage Temperature: MasterGlenium 7500 admixture must be stored at temperatures above 40 °F (5 °C). If MasterGlenium 7500 admixture freezes, thaw and reconstitute by mechanical agitation.

Shelf Life: MasterGlenium 7500 admixture has a minimum shelf life of 9 months. Depending on storage conditions, the shelf life may be greater than stated. Please contact your local sales representative regarding suitability for use and dosage recommendations if the shelf life of MasterGlenium 7500 admixture has been exceeded.

Packaging

MasterGlenium 7500 admixture is supplied in 55 gal (208 L) drums, 275 gal (1040 L) totes and by bulk delivery.

Related Documents

Safety Data Sheets: MasterGlenium 7500 admixture

Additional Information

For additional information on MasterGlenium 7500 admixture or on its use in developing concrete mixtures with special performance characteristics, contact your local sales representative.

The Admixture Systems business of BASF's Construction Chemicals division is the leading provider of solutions that improve placement, pumping, finishing, appearance and performance characteristics of specialty concrete used in the ready-mixed, precast, manufactured concrete products, underground construction and paving markets. For over 100 years we have offered reliable products and innovative technologies, and through the Master Builders Solutions brand, we are connected globally with experts from many fields to provide sustainable solutions for the construction industry.

Limited Warranty Notice

BASF warrants this product to be free from manufacturing defects and to meet the technical properties on the current Technical Data Guide, if used as directed within shelf life. Satisfactory results depend not only on quality products but also upon many factors beyond our control. BASF MAKES NO OTHER WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ITS PRODUCTS. The sole and exclusive remedy of Purchaser for any claim concerning this product, including but not limited to, claims alleging breach of warranty, negligence, strict liability or otherwise, is shipment to purchaser of product equal to the amount of product that fails to meet this warranty or refund of the original purchase price of product that fails to meet this warranty, at the sole option of BASF. Any claims concerning this product must be received in writing within one (1) year from the date of shipment and any claims not presented within that period are waived by Purchaser. BASF WILL NOT BE RESPONSIBLE FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFITS) OR PUNITIVE DAMAGES OF ANY KIND.

Purchaser must determine the suitability of the products for the intended use and assumes all risks and liabilities in connection therewith. This information and all further technical advice are based on BASF's present knowledge and experience. However, BASF assumes no liability for providing such information and advice including the extent to which such information and advice may relate to existing third party intellectual property rights, especially patent rights, nor shall any legal relationship be created by or arise from the provision of such information and advice. BASF reserves the right to make any changes according to technological progress or further developments. The Purchaser of the Product(s) must test the product(s) for suitability for the intended application and purpose before proceeding with a full application of the product(s). Performance of the product described herein should be verified by testing and carried out by qualified experts.

* GLENIUM 7500 became MasterGlenium 7500 under the Master Builders Solutions brand, effective January 1, 2014.

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BASF Corporation
Admixture Systems
www.master-builders-solutions.basf.us

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Cleveland, Ohio 44122-5544
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Canada
1800 Clark Boulevard
Brampton, Ontario L6T 4M7
Tel: 800 387-5862 ■ Fax: 905 792-0651





AUBURN - 82 Goldthwaite Road
WESTBROOK - 93 Scott Drive
WEST BATH - 50 Arthur Reno Sr Road
AUGUSTA - 2 Hard Rock Road
TOPSHAM- 26 Meadow Road Ext.

Main Office: P.O. Box 1747 • Auburn, Maine 04210

Phone: (207) 777-7100 • Fax: (207) 777-7171

SAFETY DATA SHEET

READY-MIXED CONCRETE

1. PRODUCT/COMPANY IDENTIFICATION

Manufacturer’s Name & Address:

Auburn Concrete
P.O. Box 1747
Auburn, Maine 04211-1747

Trade Name: Ready-Mix Concrete

Telephone Numbers for Information:

Auburn Plant

8 Goldthwaite Road
Auburn, Maine 04210
(207) 777-7100

Westbrook Plant

93 Scott Drive
Westbrook, Maine 04092
(207) 780-0523

West Bath Plant

50 Arthur Reno Road
West Bath, Maine 04530
(207) 376-5100

Augusta Plant

2 Hard Rock Road
Augusta, Maine 04330
(207) 620-7100

Topsham Plant

2 Hard Rock Road
Augusta, Maine 04330
(207) 373-9290

2. HAZARDS IDENTIFICATION

GHS Classification:

CARCINOGENICITY – Category 1A
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) –Category 2
SKIN CORROSION/IRRITATION – Category 1C
SERIOUS EYE DAMAGE/EYE IRRITATION – Category 1
SKIN SENSITIZATION – Category 1

GHS label elements

Hazard pictograms:



Health



Corrosion



Irritant

Signal word: Danger

Hazard statements: May cause cancer
 May cause damage to organs (lung) through prolonged or repeated exposure
 Causes severe skin burns and eye damage
 Causes serious eye irritation
 May cause an allergic skin reaction

Precautionary statements:

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash any exposed body parts thoroughly after handling. Contaminated clothing must not be allowed out of the workplace. Wear protective Gloves/protective clothing/eye protection/face protection.

Response: If exposed or concerned: Get medical advice/attention if irritation or rash occurs. If On skin: Wash contaminated clothing before reuse. If in eyes: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do.

Storage: Restrict or control access to ready mix concrete

Disposal: Dispose of contents/container in accordance with local/regional/national/regional/international regulations.

Hazards not otherwise classified (HNOC): None known

Supplemental Information: Respirable Crystalline Silica (RCS) may cause cancer. Wet, freshly mixed concrete is not expected to pose respiratory concern. Ready Mix Concrete is comprised of cement, additives and a naturally occurring mineral compounds that contains varying quantities of quartz (crystalline silica). When set/cured Ready Mix Concrete is subjected to various natural or mechanical forces it may produce small particles (dust) which may contain respirable crystalline silica (particles less than 10 micrometers in aerodynamic diameter). Repeated inhalation of respirable crystalline silica (quartz) may cause lung cancer. Other forms of RCS (e.g., tridymite and cristobalite) may also be present or formed under certain industrial processes.

 **3. COMPOSITION INFORMATION**

Major Compounds:

Chemical Name	CAS Registry Number	% in this Cement Product
Aggregate*	Mixture	60-100
Limestone (Calcium Carbonate)	1317-65-3	0-100
Crystalline Silica	14808-60-7	> 1
Portland Cement	65997-15-1	3-40
GGBF Slag	65996-69-2	0-10
“ASHES”	“Varies”	0-20

* Composition varies naturally, typically contains Limestone and Crystalline Silica



4. HEALTH HAZARD DATA AND FIRST AID

Exposure Limits: Unless specified otherwise, limits are expressed as a time-weighted average (TWA) concentration for an 8-hour work shift of a 40-hour week. Limits for cristobalite and tridymite (other forms of crystalline silica) are equal to one-half the limits for quartz.

Abbreviations:

ACGIH TLV: Threshold limit value of the American Conference of Governmental Industrial Hygienists (ACGIH), expressed as a time weighted average (TWA) concentration for an 8-hour work day and a 40-hour work week.

Mg/m3: Milligrams of substance per cubic meter of air.

NIOSH REL: Recommended exposure limit of the National Institute for Occupational Safety and Health (NIOSH), expressed as a TWA concentration for up to a 10-hour work day during a 40 hour work week.

OSHA PEL: Permissible exposure limit of the federal Occupational Safety and Health Administration (OSHA), expressed as a time weighted average (TWA) concentration for an 8 hour work day and a 40 hour work week.

Calcium Carbonate: OSHA PELs (respirable fraction) 5mg/m3, (total dust) 15mg/m3, ACGIH TLV 10mg/m3, NIOSH REL (respirable) 5mg/m3, (total) 10mg/m3.

Crystalline Silica SiO2: OSHA PELs (respirable fraction) [10mg/m3 / (% SiO2+2)], (total dust) [30mg/m3 / (%SiO2+2)]; ACGIH TLV (respirable fraction) 0.05mg/m3; NIOSH REL (respirable fraction) 0.05mg/m3.

Portland Cement: OSHA PELs (respirable fraction) 5mg/m3, (total dust) 15mg/m3, ACGIH TLV 10mg/m3, NIOSH REL (respirable) 5mg/m3, (total) 10mg/m3.

Other Particulates: OSHA PELs (total particulate, not otherwise regulated) 15mg/m3, (respirable particulate, not otherwise regulated) 5mg/m3, ACGIH TLV (nuisance particulates)10mg/m3 (inhalable), 5mg/m3 (respirable).

HEALTH HAZARDS:

Primary Route(s) of Entry:

Inhalation: Yes

Skin: Yes

Ingestion: No

Acute:

Eye Contact: Direct contact with dust may cause irritation by mechanical abrasion.

Skin Contact: Wet concrete in plastic state can dry the skin and cause alkali irritation. Direct contact in dry state may cause irritation by mechanical abrasion.

Skin Absorption: Not expected to be a significant exposure route.

Ingestion: Ingestion of large amounts may cause gastrointestinal irritation and blockage.

Inhalation: Dusts may irritate the nose, throat, and respiratory tract by mechanical abrasion. Coughing, sneezing, and shortness of breath may occur following exposures in excess of appropriate exposure limits.

Chronic:

Inhalation: Chronic exposure to respirable dust in excess of appropriate exposure limits may cause lung disease. Silicosis may result from excessive exposure to respirable silica dust for prolonged periods. Not all individuals with silicosis will exhibit symptoms. Silicosis is progressive and symptoms can appear at any time, even after exposure has ceased. Symptoms may include shortness of breath, coughing, or right heart enlargement and/or failure. Persons with silicosis have an increased risk of pulmonary tuberculosis infection. Tobacco smoking may increase the risk of developing lung disorders, including emphysema and lung cancer.

Carcinogenicity: Ready-mixed concrete is not listed as a carcinogen by the National Toxicology Program (NTP) or the International Agency for Research on Cancer (IARC). However, crystalline silica is classified by the IARC as a carcinogenic to humans (Group 1). The NTP has characterized respirable silica as “known to be a human carcinogen”. Prolonged and repeated breathing of silica may cause lung cancer.

Signs & Symptoms of Exposure:

Medical Conditions Generally Aggravated by Exposure:

Inhaling respirable dust may aggravate existing respiratory system disease(s) and/or dysfunctions such as emphysema or asthma. Exposure may aggravate existing skin and /or eye conditions.

EMERGENCY & FIRST AID PROCEDURES:

Eyes: Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Beyond flushing, do not attempt to remove material from the eye(s). Contact a physician if irritation persists or later develops.

Skin: Wash skin with soap and water. Contact a physician if irritation persists or later develops

Ingestion: If person is conscious, give large quantity of water and induce vomiting; however, never attempt to make an unconscious person drink or vomit. Get immediate medical attention.

Inhalation: Remove to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if irritation persists or later develops.

 **5. FIRE AND EXPLOSION HAZARD DATA**

Flash Point	Not Applicable
Extinguishing Media	Not Applicable
Special Fire Fighting Procedures	None
Unusual Fire & Explosion Hazards	Contact with powerful oxidizing agents may cause fire and/or explosions (see Section V of this MSDS)
Flammable Limits	Not Applicable
LEL	Not Applicable
UEL	Not Applicable



6. SPILL, LEAK AND DISPOSAL PRACTICES

The personal protection and controls identified in Section 8 of the SDS should be applied as appropriate.

Steps to be taken if material is released or spilled:

Spilled materials, where dust can be generated, may overexpose cleanup personnel to respirable silica and dust. Wetting of spilled material and/or use of respiratory protective equipment may be necessary. Do not dry sweep spilled material. Flush away with water or break up into manageable sized units.



7. STORAGE AND HANDLING PRECAUTIONS

Respirable silica and dust may be generated during processing, handling and storage. The personal protection and controls identified in Section VII of the MSDS should be applied as appropriate.

Do not store or handle near food and beverages or smoking materials.



8. PERSONAL PROTECTION AND EXPOSURE CONTROL MEASURES

Control parameters:

Occupational exposure limits:

<u>Ingredient name</u>	<u>Exposure limits</u>
Particulates not otherwise classified (CAS SEQ250)	ACGIH TLV (United States, 3/2012) TWA: 3 mg/m ³ . Form: Respirable particles TWA: 10 mg/m ³ . Form: Inhalable particles OSHA PEL (United States, 6/2010) PEL: 5 mg/m ³ . Form: Respirable fraction PEL: 15 mg/m ³ . Form: Total dust TWA: 5 mg/m ³ . Form: Respirable fraction TWA: 15 mg/m ³ . Form: Total dust
Portland Cement	ACGIH TLV (United States, 3/2012) TWA: 3 mg/m ³ . Form: Respirable dust TWA: 10 mg/m ³ . Form: Total dust OSHA PEL (United States, 6/2010) PEL: 5 mg/m ³ . Form: Respirable dust PEL: 15 mg/m ³ . Form: Total dust
Crystalline Silica (Quartz) (CAS 148008-60-7)	ACGIH TLV (United States, 3/2012) TWA: 0.025 mg/m ³ . Form: Respirable dust OSHA PEL (United States, 6/2010) TWA: 10 mg/m ³ . Form: Respirable dust TWA: 30 mg/m ³ . Form: Total dust

Appropriate engineering controls:

The use of ventilation or other engineering controls may be necessary to maintain airborne levels below any applicable limits. Under normal operations general ventilation should suffice.

Environmental exposure controls:

Use general ventilation, local exhaust and/or wet suppression methods to maintain exposures below allowable exposure limits.

Exposure guidelines:

OSHA PELs, MSHA PELs, and ACGIH TLVs are 8-hr TWA values. NIOSH RELs are for TWA exposures up to 10-hr/day and 40-hr/wk. Occupational Exposure is nuisance dust (total and respirable) and respirable crystalline Silica should be monitored and controlled. Terms including Particles Not Otherwise Specified, and Inert or Nuisance Due are often used interchangeable; however, the user should review each agency's terminology for difference in meanings.

Individual protection measures:**Hygiene measures:**

Use good personal hygiene practices. Do not consume or store food in the work area. Wash hands thoroughly before eating, drinking, or smoking.

Eye/face protection:

Safety glasses with side shields should be worn as minimum protection from dust. Dust goggles or full face protection should be worn when very dusty conditions are present or are anticipated.

Skin protection:**Hand protection:**

Use alkali resistant gloves to provide hand protection from concrete.

Body protection:

Clothing with long sleeves will provide protection. Waterproof boots high enough to prevent cement from entering should be worn when workers will be standing in wet concrete. Contaminated work clothing should be washed after use.

Other skin protection:

Clothing with long sleeves and long pants should be used to prevent contact with wet concrete.

Respiratory protection:

The need for respiratory protection should be evaluated by a qualified professional. The use of respirators for controlling exposures in excess of the PEL must comply with OSHA and MSHA requirements for medical surveillance, respiratory fit testing, repair and cleaning, and user training. In dusty areas, monitoring for dust and quartz should be conducted regularly. Dust and quartz levels in excess of appropriate exposure limits should be reduced by all feasible engineering controls, including but not limited to, wet suppression, ventilation, process enclosure, and enclosed employee work stations.

9. PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point	Not Applicable
Specific Gravity (H ₂ O = 1) Vapor	2.60 – 2.75
Pressure (mm Hg) Melting Point	Not Applicable
Vapor Density (AIR-1)	Not Applicable
Evaporation Rate	Not Applicable
Solubility in Water	Not Soluble
Physical State:	Flowing, granular, hard-
Color:	like gray stone
Odor:	None
PH:	12-13
Flammability	No

10. STABILITY AND REACTIVITY

Stability: Stable. Avoid contact with incompatible materials.

Incompatibility: Contact with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride may cause fire and/or explosions. Silica dissolves in hydrofluoric acid producing a corrosive gas-silicon tetrafluoride.

Hazardous Decomposition or Byproducts: Respirable dust particles may be generated when ready-mixed concrete is sawed or ground.

Hazardous Polymerization: Will not occur. No conditions to avoid.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effect

Acute toxicity: Not reported to be acutely toxic.

Irritation/Corrosion:

Eyes: May cause eye irritation or serious eye damage

Skin: May cause skin burns or skin ulcers.

Respiratory: Studies indicate an increased risk of lung cancer from chronic exposure to respirable crystalline silica. This effect was more pronounced in those with silicosis. Studies have also linked crystalline silica exposure with autoimmune diseases and kidney disorders.

Sensitization: May cause sensitization due to the potential presence of trace amounts of hexavalent chromium.

Mutagenicity: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity: See chart below.

Product/Ingredient Name	OSHA	IARC	ACGIH	NTP
Portland Cement	-	-	A4	0
Crystalline Silica(Quartz) CAS 14808-60-7	-	1	A2	Known to be a human carcinogen

Reproductive toxicity: Not expected to be a reproductive hazard.

Teratogenicity: Not expected to be a teratogenic hazard.

Specific target organ toxicity (single exposure)

Name	Category	Route of Exposure	Target Organs
Crystalline Silica (Quartz) CAS 14808-60-7	-	Inhalation	Not reported to have effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of Exposure	Target Organs
Crystalline Silica (Quartz) CAS 14808-60-7	-	Inhalation	May cause damage to organs (Lung) through prolonged or repeated exposure.

Potential chronic health effects:

General: Prolonged inhalation of respirable crystalline silica may be harmful. May cause damage to organs (lungs) through prolonged or repeated exposure. There are reports in the literature suggesting that excessive crystalline silica exposure may be associated with autoimmune disorders and other adverse health effects involving the kidney. In particular, the incidence of scleroderma (thickening of the skin caused by swelling and the thickening of fibrous tissue) appears to be higher in silicotic individuals. To date, the evidence does not conclusively determine a causal relationship between silica exposure and these adverse health effects.

Aspiration hazard: Due to the physical form of the product it is not an aspiration hazard.

 **12. ECOLOGICAL INFORMATION**

Persistence and degradability:	No available data.
Bioaccumulative potential:	No available data.
Mobility in soil:	No available data.
Other adverse effects:	No known significant effects or critical hazards.

 **13. DISPOSAL CONSIDERATION**

Waste Disposal Method: Dispose of waste materials only in accordance with applicable federal, state and local laws and regulations. The product may become contaminated during use and it is the responsibility of the user to determine appropriate disposal method in this case.

 **14. TRANSPORTATION INFORMATION**

	DOT Classification	IMDG	IATA
UN number	Not regulated	Not regulated	Not regulated
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	-	-	-
Additional information	-	-	-

Special precautions for user: It is responsibility of the transporting entity to follow all applicable laws, regulations, and rules regarding the transport of this material.

 **15. REGULATORY INFORMATION**

U.S. Federal regulations: This product is a “Hazardous Chemical” as defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200

TSCA Section 12(b) Export Notification (40 CFR 707, Subpart. D):	Not regulated
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):	Not listed
CERCLA Hazardous Substance List (40 CFR 302.4): Clean Air Act Section 112 (b): Hazardous Air Pollutants (HAPs):	Not regulated
Clean Air Act Section 112 (r) Accidental Release Prevention (40 CFR 68.130):	Not regulated
Safe Drinking Water Act (SDWA):	Not regulated

 **16. OTHER INFORMATION**

Prepared February 15, 2016

Notice to reader

While the information provided in this safety data sheet is believed to provide a useful summary of the hazards of ready mix concrete as it is commonly used, the sheet cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with ready mix concrete to produce ready mix concrete products. Users should review other relevant material safety data sheets before working with this ready mix concrete or working on ready mix concrete products.

SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY Auburn Concrete, except that the product shall conform to contracted specifications. The information provided herein was believed by Auburn Concrete to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information to comply with all laws and procedures applicable to the safe handling and use of product and to determine the suitability of the product for its intended use. Buyer's exclusive remedy shall be for damages and no claim of any kind, whether as to product delivered or for non-delivery of product, and whether based on contract, breach of warranty, negligence, or otherwise shall be greater in amount than the purchase price of the quantity of product in respect of which damages are claimed. In no event shall Seller be liable for incidental or consequential damages, whether Buyer's claim is based on contract, breach of warranty, negligence or otherwise.

Abbreviations

ACGIH — American Conference of Governmental Industrial Hygienists

CAS — Chemical Abstract Service

CERCLA — Comprehensive Emergency Response and Comprehensive Liability Act CFR — Code of Federal Regulations

DOT — Department of Transportation

GHS — Globally Harmonized System

HEPA — High Efficiency Particulate Air

IATA — International Air Transport Association

IARC — International Agency for Research on Cancer

IMDG — International Maritime Dangerous Goods

NIOSH — National Institute of Occupational Safety and Health

NOEC — No Observed Effect Concentration

NTP — National Toxicology Program

OSHA — Occupational Safety and Health Administration

PEL — Permissible Exposure Limit

REL — Recommended Exposure Limit

RQ — Reportable Quantity

SARA — Superfund Amendments and Reauthorization Act

SDS — Safety Data Sheet

TLV — Threshold Limit Value

TPQ — Threshold Planning Quantity

TSCA — Toxic Substances Control Act

TWA — Time-Weighted Average

UN — United Nations



Submittal

Job: 171070
Waynflete Lower School
360 Spring Street
Portland, ME 04102

Spec Section No: 042000
Submittal No: 001
Revision No: 0
Sent Date: 7/24/2017

Spec Section Title: Unit Masonry
Submittal Title: Product Data - Mortar Material - CMU Repairs

Contractor:
Wright-Ryan Construction, Inc.

Other:
Scott Simons Architects
Adam Wiles-Rosell

SUBMITTAL REVIEW:
Reviewed for general conformance with the design concept and contract documents. Markings or comments shall not be construed as relieving the Subcontractor from compliance with the project plans and specifications, nor departure therefrom. The Subcontractor remains responsible for details and accuracy, for conforming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of assembly and for performing the work in a safe manner.
WRIGHT-RYAN CONSTRUCTION, INC
BY: Nick Barto DATE: 7/24/2017

Architect's Stamp

Engineer's Stamp

- Reviewed
- Rejected
- Submit Specific Item
- Furnish as Corrected
- Revise and Resubmit

This review is only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Corrections or comments made on the shop drawings during this review do not relieve contractor from compliance with the requirements of the plans and specifications. Approval of a specific item shall not include approval of an assembly of which the item is a component. Contractor is responsible for: dimensions to be confirmed and correlated at the jobsite; information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction; coordination of his or her Work with that of all other trades; and for performing all work in a safe and satisfactory manner.

Becker Structural Engineers, Inc

Date: 07/24/2017 By: dsb

MASON MIX

PRODUCT NO. 1136

PRODUCT DESCRIPTION

QUIKRETE® Mason Mix is a contractor grade mortar mix designed for laying brick, concrete masonry units and stone.

PRODUCT USE

QUIKRETE® Mason Mix is a contractor grade mortar mix designed for laying brick, concrete masonry units and stone. QUIKRETE® Mason Mix is a pre-blended, sanded product. The standard formulation meets ASTM C 270 and C 1714 as Type S mortar. Other types are available by special request.

COLORS

QUIKRETE® Mason Mix is available in gray and additional colors by special order. Color can also be added to the product as it is mixed by adding QUIKRETE® Stucco and Mortar Color (#1319) to the mixing water. Twenty standard colors are available.

SIZES

- QUIKRETE® Mason Mix -
 - 60 lb (27.2 kg) bags
 - 80 lb (36.3 kg) bags
 - 94 lb (42.6 kg) bags
 - 25 kg (55 lb) bags
 - 30 kg (66 lb) bags

YIELD

- Each 80 lb (36.3 kg) bag of QUIKRETE® Mason Mix will lay up to 37 standard bricks or 13 standard (8" x 8" x 16" [200 mm x 200 mm x 400 mm]) blocks.

TECHNICAL DATA

APPLICABLE STANDARDS

ASTM International

- ASTM C 270 Specification for Mortar for Unit Masonry
- ASTM C 387 Specification for Packaged, Dry, Combined Materials for Mortar and Concrete
- ASTM C 1714 Specification for Preblended Dry Mortar Mix for Unit Masonry

PHYSICAL/CHEMICAL PROPERTIES

QUIKRETE® Mason Mix meets or exceeds the property requirements of ASTM C 270, ASTM C 387 and ASTM C 1714 for the type selected. Refer to Appendix XI of ASTM C270 for guidance in selecting the proper mortar type. See Table 1.

DIVISION 4

Masonry Mortaring
04 05 13



INSTALLATION

SURFACE PREPARATION

Surfaces to receive Mason Mix should be clean and free of dirt, loose debris, grease, oil, etc., for the best possible bond.

MIXING

- For each 80 lb (36.3 kg) bag, add 9 pt (4.3 L) of fresh water to mixer
 - Turn the mixer on and begin adding bags of Mason Mix
 - If the material becomes too difficult to mix, add additional water until a workable mix of trowelable consistency is obtained
- Note - Final water content should be 9 - 14 pt (4.3 - 6.6 L) for each 80 lb (36.3 kg) bag and 7 - 10 pt (3.3 - 4.7 L) for each 60 lb (27.2 kg) bag.

Table 1

Hydraulic Cement- Lime Mortars or Cement Mortars			
Type	Minimum Compressive Strength, psi (MPa)	Water Retention Minimum %	Air content Maximum %
M	2500 (17.2)	75	12
S	1800 (12.4)	75	12
N	750 (5.2)	75	14 ¹
O	350 (2.4)	75	14 ¹
Masonry Cement Mortars			
Type	Minimum Compressive Strength, psi (MPa)	Water Retention Minimum %	Air content Maximum %
M	2500 (17.2)	75	18
S	1800 (12.4)	75	18
N	750 (5.2)	75	20 ²
O	350 (2.4)	75	20 ²

¹ When structural reinforcement is included, the maximum air content shall be 12%

² When structural reinforcement is included, the maximum air content shall be 18%

INSTALLATION

- Apply a full bed of mortar onto the base, approximately 1/2" - 3/4" (12.7 - 19.1 mm) thick
- Push downward into the mortar bed and sideways against the previously laid block with a slight twisting motion

• Tool the mortar joints when they become thumbprint hard. This will make the mortar joint watertight and provide a neat appearance

CURING

Curing of masonry mortars is required only if conditions are very hot, dry or windy. In such cases, a gentle mist of water applied to the surface will prevent premature drying and improve the strength of the mortar.

PRECAUTIONS

Variations in mix water amount, mix time, curing conditions and finishing will cause color variations.

WARRANTY

The QUIKRETE® Companies warrant this product to be of merchantable quality when used or applied in accordance with the

instructions herein. The product is not warranted as suitable for any purpose or use other than the general purpose for which it is intended. Liability under this warranty is limited to the replacement of its product (as purchased) found to be defective, or at the shipping companies' option, to refund the purchase price. In the event of a claim under this warranty, notice must be given to The QUIKRETE® Companies in writing. This limited warranty is issued and accepted in lieu of all other express warranties and expressly excludes liability for consequential damages.

The QUIKRETE® Companies
One Securities Centre
3490 Piedmont Rd., NE, Suite 1300; Atlanta, GA 30305
(404) 634-9100 • Fax: (404) 842-1425



CEMENT & CONCRETE PRODUCTS™

C4: Portland Cement Based Concrete Products

SAFETY DATA SHEET
(Complies with OSHA 29 CFR 1910.1200)

SECTION I: PRODUCT IDENTIFICATION

The QUIKRETE® Companies
One Securities Centre
3490 Piedmont Road, Suite 1300
Atlanta, GA 30305

Emergency Telephone Number
(770) 216-9580
Information Telephone Number
(770) 216-9580

Revision: Jan-16
SDS C4

QUIKRETE® Product Name	Item #(s)
MORTAR MIX	1102
VIEUX CARRE MORTAR MIX	1102-86
ALL-STAR MORTAR MIX	1122
MASON MIX	1136
ALL-STAR MASON MIX	1136
QUIKRETE® PRO-FINISH BLENDED MASON MIX	1136-58
ALL-STAR VENEER STONE MORTAR	1137
ROOF TILE MORTAR	1140
VENEER STONE MORTAR	1137
POLYMER MODIFIED VENEER STONE MORTAR	1137-85
CSC-4	1191-84
TUCKPOINTING MORTAR – ZIP AND MIX	1251-15
GLASS BLOCK MORTAR	1610
K-1 Mortar	210280
HANDICRETE MORTAR MIX	
NATURAL STONE MORTAR	
RED-E-CRETE MORTAR	
BULK MASONRY MORTARS: MIX 101M, 102 S, 104 N, 112 M, 112 N, 112 S, 122 M, 122 N, 122 S, 132 S, 142, 201 M, 202 PLN, 202 S, 203 PLS, 203 S, 203 N, 204 N, 205 P/L type O, 203 M, 212 M, 212 N, 212 S, 222 M, 222 S, 253 S, 294 N	

Product Use: Masonry Mortars for construction with block, brick, veneer stones, etc.

SECTION II - HAZARD IDENTIFICATION

Hazard-determining components of labeling: Silica, Portland cement

2.1 Classification of the substance or mixture

Carcinogen – Category 1A

Skin Corrosion – Category 1B

QUIKRETE**CEMENT & CONCRETE PRODUCTS™**

Skin Sensitization – Category 1B

Specific Target Organ Toxicity Repeat Exposure – Category 1

Specific Target Organ Toxicity: Single Exposure – Category 3

2.2a Signal word DANGER!

2.2b Hazard Statements

May cause cancer through chronic inhalation

Causes severe skin burns and serious eye damage

May cause an allergic skin reaction

Causes damage to lungs through prolonged or repeated inhalation

May cause respiratory irritation

2.2c Pictograms



2.2d Precautionary statements

Do not handle until all safety precautions have been read and understood.

Wear impervious gloves, such as nitrile. Wear eye protection, and protective clothing.

Do not eat, drink or smoke when using this product.

Wash thoroughly after handling.

Use only in a well-ventilated area.

Do not breathe dust.

If swallowed: Rinse mouth. Do NOT induce vomiting.

If inhaled: Remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If on skin (or hair): Remove immediately all contaminated clothing and wash before re-use. Rinse skin or hair with water.

If significant skin irritation or rash occurs: get medical advice or attention.

Immediately seek medical advice or attention if symptoms are significant or persist.

Store in a well-ventilated place. Keep container tightly closed.

Dispose of contents/containers in accordance with all regulations.

2.3 Additional Information

QUIKRETE**CEMENT & CONCRETE PRODUCTS™**

The Portland cement in this product can cause serious, potentially irreversible damage to skin, eye, respiratory and digestive tracts due to chemical (caustic) burns, including third degree burns. Burns from Portland cement may not cause immediate pain or discomfort. You cannot rely on pain to alert you to cement burns. Therefore precautions must be taken to prevent all contact with Portland cement. Cement burns can become worse even after contact has ended. If there is contact with this product, immediately remove all product from body and thoroughly rinse with water. If you experience or suspect a cement burn or inflammation you should immediately see a health care professional.

Skin burns and irritation may be caused by brief exposure, though often are caused by extended exposure of 15 minutes, an hour, or longer. Interaction of Portland cement with water or sweat releases a caustic solution which produces the burns or irritation. Any extended exposure should be treated as though a burn has occurred until determined otherwise.

Skin contact with Portland cement can also cause inflammation of the skin, referred to as dermatitis. Signs and symptoms of dermatitis can include itching, redness, swelling, blisters, scaling, and other changes in the normal condition of the skin. Signs and symptoms of burns include the above and whitening, yellowing, blackening, peeling or cracking of skin.

The Portland cement in this product may cause allergic contact dermatitis in sensitized individuals. This overreaction of the immune system can lead to severe inflammation. Sensitization may result from a single exposure to the low levels of Cr(VI) in Portland cement or repeated exposures over months or years. Sensitization is long lasting and, after sensitization, even very small quantities can trigger the dermatitis. Sensitization is uncommon. Individuals who experience skin problems, including seemingly minor ones, are advised to seek medical attention.

2.3a HNOC – Hazards not otherwise classified: Not applicable

2.3b Unknown Acute Toxicity: None

2.3C WHMIS Classification

Class D2B – Skin/Eye Irritant

Class D2A – Chronic Toxic Effects – Carcinogen

Class E – Corrosive Material

2.3d Label Elements According To WHMIS

Hazard Symbols



Signal Word



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DANGER!

SECTION III - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

<u>Hazardous Components</u>	<u>CAS No.</u>	<u>% by Weight</u>
Sand, Silica, Quartz	14808-60-7	40-70*
Portland Cement	65997 15 1	10-30*
Lime	01305-62-0	5-10*
Alternately to Lime, May Contain:		
Calcium Carbonate	1317-65-3	5-10*
Calcium Sulfate Dihydrate	7778-18-9	1-5*

*The concentrations ranges are provided due to batch-to-batch variability.
None of the constituents of this material are of unknown toxicity.

SECTION IV – FIRST AID MEASURES

4.1 Description of the first-aid measures**General information:**

After inhalation: Remove person to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. In case of unconsciousness, place patient stably in side position for transportation.

After skin contact: Wash skin with cool water and pH-neutral soap or a mild detergent. If significant skin irritation or rash occurs: get medical advice or attention.

After eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

After swallowing: Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms/effects, acute and delayed

Inhalation: May cause respiratory tract irritation. Causes damage to organs through prolonged or repeated inhalation. This product contains crystalline silica. Prolonged or repeated inhalation of respirable silica from this product can cause silicosis.

Skin contact: The Portland cement in this product can cause serious, potentially irreversible damage to skin, eye, respiratory and digestive tracts due to chemical (caustic) burns, including third degree burns.

Burns from Portland cement may not cause immediate pain or discomfort. You cannot rely on pain to alert you to cement burns. Therefore precautions must be taken to prevent all contact with Portland cement. Cement burns can become worse even after contact has ended. If there is contact with this product, immediately remove all product from body and thoroughly rinse with water.



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If you experience or suspect a cement burn or inflammation you should immediately see a health care professional.

Skin burns and irritation may be caused by brief exposure, though often are caused by extended exposure of 15 minutes, an hour, or longer. Interaction of Portland cement with water or sweat releases a caustic solution which produces the burns or irritation. Any extended exposure should be treated as though a burn has occurred until determined otherwise.

Skin contact with Portland cement can also cause inflammation of the skin, referred to as dermatitis. Signs and symptoms of dermatitis can include itching, redness, swelling, blisters, scaling, and other changes in the normal condition of the skin. Signs and symptoms of burns include the above and whitening, yellowing, blackening, peeling or cracking of skin.

The Portland cement in this product may cause allergic contact dermatitis in sensitized individuals. This overreaction of the immune system can lead to severe inflammation. Sensitization may result from a single exposure to the low levels of Cr(VI) in Portland cement or repeated exposures over months or years. Sensitization is long lasting and, after sensitization, even very small quantities can trigger the dermatitis. Sensitization is uncommon. Individuals who experience skin problems, including seemingly minor ones, are advised to seek medical attention.

Eye Contact: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Ingestion: May be harmful if swallowed. Ingestion may cause discomfort and/or distress, nausea or vomiting.

4.3 Indication of immediate medical attention and special treatment needed:
Immediately seek medical advice or attention if symptoms are significant or persist.

SECTION V - FIRE FIGHTING MEASURES

5.1 Flammability of the Product: Non-flammable and non-combustible

5.2 Suitable extinguishing agents: Treat for surrounding material

5.3 Special hazards arising from the substance or mixture: None

5.3a Products of Combustion: None

5.3b Explosion Hazards in Presence of Various Substances: Non-explosive in presence of shocks

SECTION VI – ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: Wear personal protective equipment (See section VIII). Keep unprotected persons away.



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6.2 Methods and material for containment and cleaning up:

Do not allow to enter sewers/ surface or ground water. Dispose of unwanted materials and containers properly in accordance with all regulations.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND STORAGE

7.1 Handling

Precautions for safe handling: Ensure good ventilation/exhaustion at the workplace. DO NOT BREATHE DUST. In dusty environments, the use of an OSHA, MSHA or NIOSH approved respirator and tight fitting goggles is recommended. Wear appropriate PPE (See section 8). Do not mix with other chemical products, except as indicated by the manufacturer. Do not get in eyes, on skin or clothing. Good housekeeping is important to prevent accumulation of dust.

7.2 Storage

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: Keep out of the reach of children. Keep container tightly closed and prevent exposure to humidity. Do not allow water to contact the product until time of use to preserve product utility.

SECTION VIII – EXPOSURE CONTROL MEASURES / PERSONAL PROTECTION

8.1 Components with limit values that require monitoring at the workplace:

Hazardous Components	CAS No.	PEL (OSHA) mg/M ³	TLV (ACGIH) mg/M ³
Silica Sand, crystalline	14808-60-7	0.1	0.025 (resp)
Portland Cement	65997-15-1	5 (resp) 15 (total)	10 (resp)
Lime	01305-62-0	5	5
Pulverized Limestone	01317-65-3	5 (resp) 15 (total)	10 (resp)

8.2 Exposure Controls

Use ventilation adequate to keep exposures below recommended exposure limits.

8.3 General protective and hygienic measures

Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

8.3a Personal protective equipment

Protection of hands:



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Wear gloves of adequate length to offer appropriate skin protection from splashes. Nitrile, Butyl and PVC gloves have been found to offer adequate protection for incidental contact. Precautions must be observed because burns occur with little warning -- little heat is sensed.

Eye protection:

Wear approved eye protection (properly fitted dust- or splash-proof chemical safety glasses).

Respiratory protection:

A NIOSH-approved dust mask or filtering face piece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional, following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).

SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS

General Information

Appearance	Form: Granular Solid Color: Gray to gray-brown colored Odor: None
pH-value at 20°C (68 °F):	13 (10%)
Boiling point/Boiling range:	Not applicable
Flash point:	Not applicable
Auto igniting:	Product is not self-igniting
Vapor pressure at 21°C (70°F)	Not available
Density at 25°C (77 °F):	2.6 to 3.15

Solubility in / Miscibility with

Water:	Insoluble
VOC content:	0 g/L VOC

SECTION X – STABILITY AND REACTIVITY

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal storage conditions. Keep in dry storage.

10.3 Possibility of hazardous reaction

No dangerous reaction known under conditions of normal use.

10.4 Thermal decomposition / conditions to be avoided

No decomposition if used according to specifications.

10.5 Incompatible materials



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Contact of silica with powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, or oxygen difluoride may cause fires

10.6 Hazardous Decomposition or By-products

Silica will dissolve in Hydrofluoric Acid and produce a corrosive gas – silicon tetrafluoride.

SECTION XI – TOXICOLOGICAL INFORMATION

11.1 Exposure Routes: Skin contact, skin adsorption, eye contact, inhalation, or ingestion.

11.2 Symptoms related to physical/chemical/toxicological characteristics:

Inhalation: May cause respiratory tract irritation. Causes damage to organs through prolonged or repeated exposure. This product contains crystalline silica. Prolonged or repeated inhalation of respirable silica from this product can cause silicosis.

Skin contact: Causes skin irritation. Handling can cause dry skin, discomfort, irritation, and dermatitis. May cause sensitization by skin contact. Product becomes extremely alkaline when exposed to moisture, and can cause alkali burns and affect the mucous membranes.

Eye Contact: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Ingestion: Harmful if swallowed. Ingestion may cause discomfort and/or distress, nausea or vomiting.

11.3 Delayed, immediate and chronic effects of short-term and long-term exposure

Short Term

Skin Corrosion/Irritation: Causes severe skin burns.

Serious Eye Damage/Irritation: Causes severe eye damage.

Respiratory Sensitization: Not available

Skin Sensitization: May cause an allergic skin reaction.

Specific Target Organ Toxicity-Single Exposure: (Category 3) May cause respiratory irritation.

Aspiration Hazard: Not available

Long Term

Carcinogenicity: May cause cancer through chronic inhalation.

Germ Cell Mutagenicity: Not available

Reproductive Toxicity: Not available

Specific Target Organ Toxicity- Repeated Exposure: (Category 1) Causes damage to lungs through prolonged/repeated exposure

Synergistic/Antagonistic Effects: Not available.

SECTION XII – ECOLOGICAL INFORMATION



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12.1 Ecotoxicity

May cause long-term adverse effects to the aquatic environment. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Must not reach bodies of water or drainage ditch undiluted or un-neutralized

12.2 Persistence and degradability

No further relevant information available.

12.3 Bioaccumulative potential:

No further relevant information available.

12.4 Mobility in soil

No further relevant information available.

12.5 Other Adverse Effects

No further relevant information available.

SECTION XIII – DISPOSAL CONSIDERATIONS

13.1 Waste Disposal Method

The packaging and material may be land filled; however, material should be covered to minimize generation of airborne dust. This product is not classified as a hazardous waste under the authority of the RCRA (40CFR 261) or CERCLA (40CFR 117&302). Disposal must be made in accordance with local, state and federal regulations.

13.2 Other disposal considerations

Uncleaned packaging

Recommendation: Disposal must be made in accordance with local, state and federal regulations.

Recommended cleansing agent: Water, if necessary with cleansing agents.

SECTION XIV – TRANSPORT INFORMATION

	DOT (U.S.)	TDG (Canada)
UN-Number	Not Regulated	Not Regulated
UN proper shipping name	Not Regulated	Not Regulated
Transport Hazard Class(es)	Not Regulated	Not Regulated
Packing Group (if applicable)	Not Regulated	Not Regulated

14.1 Environmental hazards:

Not Available

14.2 Transport in bulk according to Annex II of Marpol 73/78 and the IBC Code



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Not available

14.3 Special precautions for user

Do not handle until all safety precautions have been read and understood.

SECTION XV – OTHER REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislations specific for the chemical

Canada

WHMIS Classification: Considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations and subject to the requirements of Health Canada's Workplace Hazardous Material Information (WHMIS). This document complies with the WHMIS requirements of the Hazardous Products Act (HPA) and the CPR.

15.2 US Federal Information

SARA 302/311/312/313 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302, 311, 312 or 313.

RCRA: Crystalline silica (quartz) is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

CERCLA: Crystalline silica (quartz) is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 40 CFR §302.

Emergency Planning and Community Right to Know Act (SARA Title III): Crystalline silica (quartz) is not an extremely hazardous substance under Section 302 and is not a toxic chemical subject to the requirements of Section 313.

FDA: Silica is included in the list of substances that may be included in coatings used in food contact surfaces, 21 CFR §175.300(b)(3)(xxvi).

NTP: Respirable crystalline silica, primarily quartz dusts occurring in industrial and occupational settings, is classified as Known to be a Human Carcinogen.

OSHA Carcinogen: Crystalline silica (quartz) is not listed.

15.3 State Right to Know Laws

California Prop. 65 Components

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

California Inhalation Reference Exposure Level (REL): California established a chronic REL of 3 µg for silica (crystalline, respirable). A chronic REL is an airborne level of a

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substance at or below which no adverse health effects are anticipated in individuals indefinitely exposed to the substance at that level.

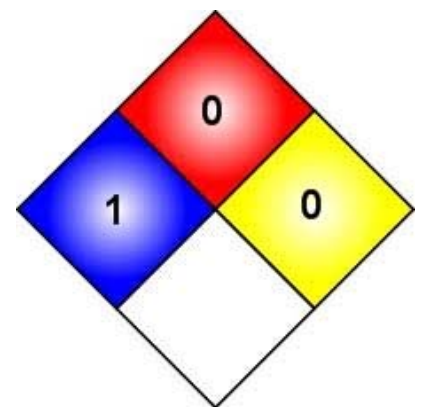
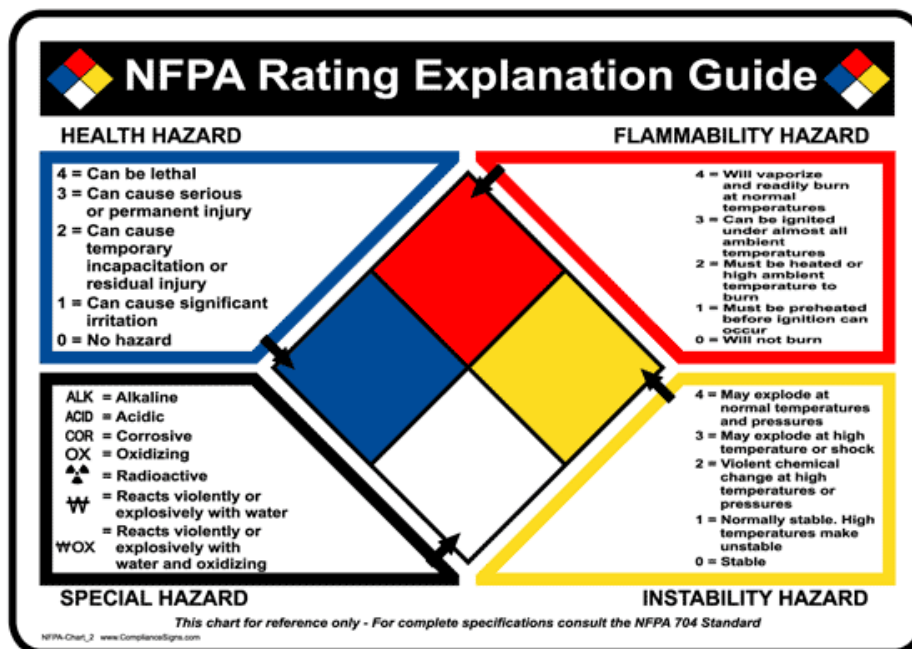
Massachusetts Toxic Use Reduction Act: Silica, crystalline (respirable size, <10 microns) is “toxic” for purposes of the Massachusetts Toxic Use Reduction Act.

15.4 Global Inventories

DSL All components of this product are on the Canadian DSL list.

TSCA No.: Crystalline silica (quartz) appears on the EPA TSCA inventory under the CAS No. 14808-60-7. All constituents are listed in the TSCA inventory.

15.5 NFPA Ratings



SECTION XVI – OTHER INFORMATION

Last Updated: January 4, 2016

NOTE: The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to



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the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to silica contained in our products.

Prepared by

The QUIKRETE® Companies
Phone (800) 282-5828
www.QUIKRETE.com

End of SDS

Section B: 05120



Client: S.W. Cole Engineering, Inc.**Project:** Waynflete Lower School**SWC Project:** 15-0577.1**Date:** November 14, 2017**Subject:** Site Inspection of Structural Steel**Report:** 001

As requested, a site visit was made on this date to initiate inspection of structural steel framing. Upon arrival we met with the erector and welding subcontractor. Welding of moment connections at Main Floor Framing was in progress.

Our inspection on this date pertained only to inspection and ultrasonic testing of moment connection welds. James A. Mc Brady detail on drawing E5 and verbal information from the EOR (reinforcing weld is not required) were used for reference.

Welder certification was provided and found acceptable. A written welding procedure was provided which lacked some information required by AWS. After review of the in process procedure and examination of welding electrodes we found the procedure being used to be acceptable. A heated electrode oven was in use.

Welds were visually inspected and tested using ultrasound. Visual inspection revealed a misalignment of top flange and continuity plate at some locations. Per AWS D1.1 misalignment should not exceed 10% of flange thickness.



Worst case of misalignment observed (F/7 north)

Per discussion with the EOR we documented those locations currently welded which exhibited 1/8" or greater misalignment. These are as follows:

F/7 north (3/16" – 1/4")
F/8 west (1/8")
N/8 east & west (1/8 +")
L/8 east (1/8")

These reflect only the joints welded to date and misalignment occurs only on the top flange (the welder aligns the bottom flange and welds this first). All other locations were 1/16" or less misalignment.



Cam gage used to measure misalignment



Example of 1/8 +'' misalignment at N/8

Ultrasonic testing was performed as documented on the attached test report. No defects were noted.

After discussion with the welder it appears that the bottom flange of moment connections adjacent to the north CMU wall of the elevator cannot be accessed for welding. The contractor is to submit an RFI.



Bottom flange adjacent to CMU wall cannot be accessed for welding

The erector and superintendent were advised of our observations.

Inspector; Neal J White
CWI #86070201
ICC #8014170-S1

ULTRASONIC TEST REPORT

Date: **November 14, 2017**

Report: **001**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 Mhz**

Project: **Waynflete Lower School**

Ultrasonic Unit: **Epoch 600**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1 - 15**

Welding Contractor: **Perro Welding Services**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Butt**

Material: **ASTM A992**

Weld Identification	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment Connections Main Floor														
Q/9 W TF only	X		70	A	1-3		57							
F/8 S, W	X													
N/8 E,W	X													
L/8 E	X													
F/7 N,S,W,E	X													
E/7 S,E	X													

Remarks: **Unless noted otherwise top and bottom flange were tested. See narrative report regarding misalignment.**

Technician: **Neal J White**

Level: **II**

Client: S.W. Cole Engineering, Inc.**Project:** Waynflete Lower School**SWC Project:** 15-0577.1**Date:** November 15, 2017**Subject:** Site Inspection of Structural Steel**Report:** 002

As scheduled, a site visit was made on this date to continue inspection of structural steel framing. Upon arrival we met with the erector and welding subcontractor.

Our actions and observations were as follows:

- The remainder of completed moment connections at Main Floor framing were visually inspected and tested using ultrasound.
- Fit and alignment inspection were performed on moment connections to be welded.
- Column plumb was verified using a 6'-0 level from line 5 to 11.
- Welding of beam to embeds was inspected on line 11 and location J/8.5.

All work inspected appeared acceptable with the following comments or exceptions:

1. Bottom flange of the moment connection is misaligned by 1/4" at F/5 north, Main Floor.
2. It appears some of the embed plates on line 11 may require grouting.

The erector was advised of our observations.

Inspector; Neal J White

CWI #86070201

ICC #8014170-S1

ULTRASONIC TEST REPORT

Date: **November 15, 2017**

Report: **002**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 Mhz**

Project: **Waynflete Lower School**

Ultrasonic Unit: **Epoch 600**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1 - 15**

Welding Contractor: **Perro Welding Services**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Butt**

Material: **ASTM A992**

Weld Identification	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment Connections Main Floor														
G/7 E,W	X		70	A	1-3		55							
F/5 N TF only	X													
F/5 W	X													
E/5 W, N	X													

Remarks: **Unless noted otherwise top and bottom flange were tested. Bottom flange at F/5 was too misaligned to effectively test.**

Technician: **Neal J White**

Level: **II**

Client: S.W. Cole Engineering, Inc.

Report: 003

Project: Waynflete Lower School

SWC Project: 15-0577.1

Date: November 17, 2017

Subject: Site Inspection of Structural Steel

As scheduled, a site visit was made on this date to continue inspection of structural steel framing. Upon arrival we met with the erector and general contractor.

Our actions and observations were as follows:

- Completed moment connections at Upper Floor/Low Roof framing were visually inspected and tested using ultrasound. See the attached report for locations tested.

All work inspected appeared acceptable with the following comments or exceptions:

1. Top flange of the moment connection is misaligned by 1/8" at P/11 south, Upper Floor/Low roof.

The erector was advised of our observations.

Inspector; Michael Bump
CWI #07091231

ULTRASONIC TEST REPORT

Date: **November 17, 2017**

Report: **003**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 Mhz**

Project: **Waynflete Lower School**

Ultrasonic Unit: **Epoch 600**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1 - 15**

Welding Contractor: **Perro Welding Services**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Butt**

Material: **ASTM A992**

Weld Identification	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment Connections upper floor/low roof														
P/11 N,S,E,W	X		70	A	1-3		62							
R/11 N,S,W	X													

Remarks: **Unless noted otherwise top and bottom flange were tested.**

Technician: **Michael Bump** Level: **II**

Client: S.W. Cole Engineering, Inc.

Report: 004

Project: Waynflete Lower School

SWC Project: 15-0577.1

Date: November 21, 2017

Subject: Site Inspection of Structural Steel

As requested, a site visit was made on this date to continue inspection of structural steel framing. Upon arrival we met with the erector and superintendent. Welding of moment connections was in progress.

Our inspection on this date pertained only to inspection and ultrasonic testing of moment connection welds.

Welding procedures observed were acceptable.

Welds were visually inspected and tested using ultrasound. Welds were found acceptable by ultrasonic testing. Three misaligned connections were observed at the following locations:

P/10 east (1/8" +) top flange

L/10.2 west (1/8" +) bottom flange

K/10.2 east (1/8") top flange

See photographs below.



P/10 east top flange



K/10.2 east top flange



L/10.2 west bottom flange

Note; Testing of top flange around perimeter is commonly limited by bent plate.

Inspector; Neal J White
CWI #86070201
ICC #8014170-S1

ULTRASONIC TEST REPORT

Date: **November 21, 2017**

Report: **004**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 Mhz**

Project: **Waynflete Lower School**

Ultrasonic Unit: **Epoch 600**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1 - 15**

Welding Contractor: **Perro Welding Services**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Butt**

Material: **ASTM A992**

Weld Identification	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment Connections Main level														
G/1	X		70	A	1-3		54							
G/3	X													
F/1 N,E,W	X													
F/3 N,S,E,W	X													
E/3 N,E,S	X													
E/1 N,E	X													
Upper level /low roof														
R/10 N,W	X		70	A	1-3		54							
P/10 N,E	X													
N/11 E,S	X													
N/11 N BF only	X													
L/10.2	X													
K/10.2	X													
K/9	X													
L/8	X													

Remarks: **Unless noted otherwise top and bottom flange were tested.**

Technician: **Neal J White**

Level: **II**

Client: S.W. Cole Engineering, Inc.

Report: 005

Project: Waynflete Lower School

SWC Project: 15-0577.1

Date: November 27, 2017

Subject: Site Inspection of Structural Steel

As scheduled, a site visit was made on this date to continue inspection and testing of moment connection welds. Upon arrival we met with the erector.

Our actions and observations were as follows:

- Completed moment connections at Upper Floor/Low Roof framing were visually inspected and tested using ultrasound. See the attached report for locations tested.

All work inspected appeared acceptable.

The erector and contractor were advised of our observations.

Inspector; Michael Bump
CWI #07091231

ULTRASONIC TEST REPORT

Date: **November 27, 2017**

Report: **005**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 Mhz**

Project: **Waynflete Lower School**

Ultrasonic Unit: **Epoch 600**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1 - 15**

Welding Contractor: **Perro Welding Services**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Butt**

Material: **ASTM A992, A36**

Weld Identification	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment Connections upper floor/low roof														
E/5 N,E	X		70	A	1-3		62							
E/7 S,E	X													
F/5 N,E,W	X													
F/7 N,S,E,W	X													
F/8 S,E,W	X													
G/5 N,E,W	X													
G/7 S,E,W	X													
N/8 N,E,W	X													

Remarks: **Unless noted otherwise top and bottom flange were tested.**

Technician: **Michael Bump**

Level: **II**

Client: S.W. Cole Engineering, Inc.**Report:** 006**Project:** Waynflete Lower School**SWC Project:** 15-0577.1**Date:** December 1, 2017**Subject:** Site Inspection of Structural Steel

As requested, a site visit was made on this date to continue inspection and testing of moment connection welds. Upon arrival we met with the superintendent and erector.

- HSS moment connections at Roof on line G were visually inspected and tested using ultrasound.
- Several connections on the Main floor were visually inspected and tested using ultrasound.
- Repair of moment connection bottom flanges adjacent to the CMU elevator enclosure was in process per latest information (RFI #47) from the EOR. Repairs at F.9/8 E&W were completed.

All work inspected on this date appeared acceptable with the following comment:

1. Cantilever moment connection top flange at Q/9 is misaligned 3/16". All parties were advised. See photograph.

The erector and contractor were advised of our observations. See attached test report.

Inspector; Neal J White

CWI #86070201

ICC #8014170-S1



Misaligned top flange at Q/9

ULTRASONIC TEST REPORT

Date: **December 1, 2017**

Report: **006**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 Mhz**

Project: **Waynflete Lower School**

Ultrasonic Unit: **Epoch 600**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1 - 15**

Welding Contractor: **Perro Welding Services**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Butt**

Material: **ASTM A992, A36**

Weld Identification	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment Connections low roof														
G/1 N	X		70	A	1-3		54							
G/3 N,S	X													
G/5 N,S	X													
F.9/8 E,W TF	X													
Q/9 E TF	X													

Remarks: **HSS connections were tested "all around"**.

Technician: **Neal J White**

Level: **II**

WHITE ENGINEERING, LLC

nealjwhite@gmail.com

P.O. Box 878 Glen, N.H. 03838

Tel. 603-383-9347 Fax. 603-383-8262

Client: S.W. Cole Engineering, Inc.

Report: 007

Project: Waynflete Lower School

SWC Project: 15-0577.1

Date: December 7, 2017

Subject: Site Inspection of Structural Steel

As scheduled, a site visit was made on this date to continue inspection of structural steel framing. Upon arrival we met with the erector and general contractor.

Our actions and observations were as follows:

- Completed moment connections at Upper Floor/Low Roof framing were visually inspected and tested using ultrasound. See the attached report for locations tested.

All work inspected appeared acceptable.

The erector was advised of our observations.

Inspector; Michael Bump
CWI #07091231

ULTRASONIC TEST REPORT

Date: **December 7, 2017**

Report: **007**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 Mhz**

Project: **Waynflete Lower School**

Ultrasonic Unit: **Epoch 600**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1 - 15**

Welding Contractor: **Perro Welding Services**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Butt**

Material: **ASTM A992, A36**

Weld Identification	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment Connections Main Floor														
A/2 W	X		70	A	1-3		62							
C/2 N,E,W	X													
C/4 N,S,W	X													
C/6 S,W	X													
D/2 N,E	X													
D/4 N,S,E	X													
D/6 S,E	X													
Moment Connections Upper Floor														
A/8.5 S,W	X		70	A	1-3		62							
B/8.5 W	X													
D/8.5 S	X													
A/6 N,S,W	X													
C/6 S,E,W	X													
D/6 N,S,W	X													

Remarks: **Unless noted otherwise top and bottom flange were tested.**

Technician: **Michael Bump**

Level: **II**

WHITE ENGINEERING, LLC

nealjwhite@gmail.com

P.O. Box 878 Glen, N.H. 03838**Tel. 603-383-9347 Fax. 603-383-8262****Client:** S.W. Cole Engineering, Inc.**Report:** 008**Project:** Waynflete Lower School**SWC Project:** 15-0577.1**Date:** December 8, 2017**Subject:** Site Inspection of Structural Steel

As scheduled, a site visit was made on this date to continue inspection of structural steel framing. Upon arrival we met with the erector and general contractor.

Our actions and observations were as follows:

- Completed moment connections at Upper Floor/Low Roof framing were visually inspected and tested using ultrasound. See the attached report for locations tested.
- Layout, welding and fastening of the 1.5" B-lok composite deck at the main floor were inspected for conformance to Canam drawing JE2 revision 0.

All work inspected appeared acceptable except as noted below:

1. The decking needs to be cut back and welded to the continuous 4x4 angle in the foundation wall along line 11 between lines K and N. See the photograph below.

The erector was advised of our observations.

Inspector; Michael Bump
CWI #07091231



2nd Floor deck not on/welded to the 4X4 angle

ULTRASONIC TEST REPORT

Date: **December 8, 2017**

Report: **008**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 Mhz**

Project: **Waynflete Lower School**

Ultrasonic Unit: **Epoch 600**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1 - 15**

Welding Contractor: **Perro Welding Services**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Butt**

Material: **ASTM A992, A36**

Weld Identification	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment Connections Upper Floor														
A/4 N,S,E	X		70	A	1-3		62							
A/2 N,W	X													
C/4 N,S,E,W	X													
C/2 N,E,W	X													
D/4 N,S,W	X													
D/2 N,W	X													

Remarks: **Unless noted otherwise top and bottom flange were tested.**

Technician: **Michael Bump**

Level: **II**

Client: S.W. Cole Engineering, Inc.
Project: Waynflete Lower School
SWC Project: 15-0577.1
Date: December 18, 2017
Subject: Site Inspection of Structural Steel

Report: 009

As requested, a site visit was made on this date to continue inspection of structural steel framing. Upon arrival we met with the erector and general contractor.

Our actions and observations were as follows:

Moment connections

At flat roof area many of the moment connections were misaligned. Approved drawings MCE1 (rev. 2) and MCE2 (rev. 1) were provided detailing corrected action. Locations G/5, G/7, F/7, F/8 and N/8 were accessed and visually inspected. Due to ice and snow no other connection could be accessed at this time. Only top flanges were completed at this time.

Additional moment connections at flat roof were accessed, visually inspected and tested using ultrasound. Only top flanges were completed at this time. See attached test report.

Main floor framing

We were advised that all framing was completed. The following items were inspected:

- Base plate bearing, tightened anchor rod nuts and welded plate washers.
- Kicker installation.
- Completed welding of perimeter bent plate.
- Open web joist bearing and bridging installation. Random joists were accessed and field welds visually inspected.
- New stiffeners added at G/4 (beam was fabricated too long and existing stiffeners cut off).
- Repair of moment connection adjacent to elevator at G/4 per EOR detail.
- Beam to bearing plate welds not previously inspected.
- Stair installation.

All work inspected appeared complete and acceptable with the following comments:

1. Base plates for stair stringers have holes slotted. At one location anchor rods are outside of base plate. We are advised an RFI has been submitted.

2. At G/3 holes in base plate were enlarged to accommodate anchor rod locations. We were advised this was accepted by the EOR.
3. Joist bridging will be anchored to concrete wall at a later date.

All items noted in this report were reviewed with the erector.

Inspector; Neal J White
CWI #86070201
ICC #8014170-S1

ULTRASONIC TEST REPORT

Date: **December 18, 2017**

Report: **009**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 Mhz**

Project: **Waynflete Lower School**

Ultrasonic Unit: **Epoch 600**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1 - 15**

Welding Contractor: **Perro Welding Services**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Butt**

Material: **ASTM A992**

Weld Identification	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment Connections Flat roof														
G/5 E	X		70	A	1-3		54							
F/5 N,W,E	X													
E/5 N,E	X													
F/7 N,S	X													
F/8 W	X													
N/8 N,E	X													
K/10.2 S,E	X													

Remarks: **Only top flanges were tested.**

Technician: **Neal J White**

Level: **II**

Client: S.W. Cole Engineering, Inc.
Project: Waynflete Lower School
SWC Project: 15-0577.1
Date: December 20, 2017
Subject: Site Inspection of Structural Steel

Report: 010

As requested, a site visit was made on this date to continue inspection of structural steel framing. Upon arrival we met with the erector and general contractor.

Our actions and observations were as follows:

- Recently completed moment connections at Roof framing were visually inspected and tested using ultrasound. Only top flanges were completed and tested at this time. See the attached test report for locations.
- Some top flanges on the Roof moment connections were modified per drawings MCE1 revision 2 and MCE2 revision 1. Visual inspections were performed on the fillet welds at the following locations: N/11 E, P/10 E, P/11 NSEW, R/10 NW and R/11 W.
- Layout, welding and fastening of the 1.5" B-lok composite deck at the upper floor was inspected for conformance to Canam drawings.
- Bearing and welding of the open web joists at the Upper Floor was inspected.

All work inspected appeared acceptable.

The erector was advised of our observations.

Inspector; Michael Bump
CWI #07091231

ULTRASONIC TEST REPORT

Date: **December 20, 2017**

Report: **010**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 Mhz**

Project: **Waynflete Lower School**

Ultrasonic Unit: **Epoch 600**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1 - 15**

Welding Contractor: **Perro Welding Services**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Butt**

Material: **ASTM A992, A36**

Weld Identification	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment Connections Roof														
L/10.2 W TF	X		70	A	1-3		63							
N/11 N,S TF	X													
P/10 N TF	X													
F.9/8 E,W TF	X													
Q/9 E,W TF	X													
R/11 N,S TF	X													

Remarks: **Only top flanges were tested.**

Technician: **Michael Bump**

Level: **II**

Client: S.W. Cole Engineering, Inc.

Report: 011

Project: Waynflete Lower School

SWC Project: 15-0577.1

Date: January 2, 2018

Subject: Site Inspection of Structural Steel

As requested, a site visit was made on this date to continue inspection of structural steel framing. Upon arrival we met with the erector and general contractor.

Our actions and observations were as follows:

- Completed moment connections at the Low Roof and Roof framing were visually inspected and tested using ultrasound. Only top flanges were tested at this time. See the attached report for locations tested.
- Several top flanges on the Low Roof and Roof moment connections were modified per drawings MCE1 revision 2 and MCE2 revision 1. Visual inspections were performed on the fillet welds at the following locations: Low Roof F/1 N, F/3 N,S and Roof E/7 E.
- Bolted connections on the Lower Floor and Upper Floor/Low Roof framing were inspected. All nuts were completely engaged on the TC bolts and splines were snapped off indicating proper tightening.
- Visual inspections were performed on the welding of the HSS members on the canopy at the Upper Floor/Low Roof framing from line 10 to north of line 11.

All work inspected appeared acceptable except as noted below.

1. Three connections on the Upper Floor/Low Roof framing were found to have loose bolts.

The erector was advised of our observations.

Inspector; Michael Bump
CWI #07091231

ULTRASONIC TEST REPORT

Date: **January 2, 2018**

Report: **011**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 Mhz**

Project: **Waynflete Lower School**

Ultrasonic Unit: **Epoch 600**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1 - 15**

Welding Contractor: **Perro Welding Services**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Butt**

Material: **ASTM A992, A36**

Weld Identification	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment Connections Low Roof														
E/1 E TF	X		70	A	1-3		63							
E/3 E TF	X													
F/1 E,W TF	X													
F/3 E,W TF	X													
F/5 S TF	X													
G/1 W TF	X													
G/3 W TF	X													
Moment Connections Roof														
D/8 E TF	X		70	A	1-3		63							
E/7 S TF	X													

Remarks: **Only top flanges were completed and tested.**

Technician: **Michael Bump**

Level: **II**

Client: S.W. Cole Engineering, Inc.

Report: 012

Project: Waynflete Lower School

SWC Project: 15-0577.1

Date: January 11, 2018

Subject: Site Inspection of Structural Steel

As scheduled, a site visit was made on this date to continue inspection of structural steel framing. Upon arrival we met with the erector and general contractor.

Our actions and observations were as follows:

- Completed moment connections at the Low Roof and Roof framing were visually inspected and tested using ultrasound. See the attached report for locations tested.
- Completed CJP HSS girt splices at the Low Roof were visually inspected and tested using ultrasound. See the attached report for locations tested.
- An in process inspection was performed on the Roof framing roof deck. All work was proceeding in an acceptable manner.

All work inspected appeared acceptable.

The erector was advised of our observations.

Inspector; Michael Bump
CWI #07091231

ULTRASONIC TEST REPORT

Date: **January 11, 2018**

Report: **012**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 Mhz**

Project: **Waynflete Lower School**

Ultrasonic Unit: **Epoch 600**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1 - 15**

Welding Contractor: **Perro Welding Services**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Butt**

Material: **ASTM A992, A36**

Weld Identification	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment Connections Low Roof														
E/1 E BF	X		70	A	1-3		63							
Moment Connections Roof														
A/2 E TF,BF	X		70	A	1-3		63							
A/8.5 (W18x35) E TF,BF	X													
B/8.5 W TF,BF	X													
C/2 N,E,W TF	X													
C/4 N,S,E,W TF	X													
C/6 S,E,W TF	X													
D/2 W TF,BF	X													
HSS Girt Splice Low Roof														
E/1 N	X		70	A	1-3		63							
E/3 N,S	X													
E/5 S	X													

Remarks:

Technician: **Michael Bump**

Level: **II**

Client: S.W. Cole Engineering, Inc.**Project:** Waynflete Lower School**SWC Project:** 15-0577.1**Date:** January 16, 2018**Subject:** Site Inspection of Structural Steel**Report:** 013

As scheduled, a site visit was made on this date to continue inspection of structural steel framing. Upon arrival we met with the erector and general contractor.

Our actions and observations were as follows:

- Completed moment connections at the roof framing were visually inspected and tested using ultrasound. See the attached report for locations tested.
- Completed type NS roof deck installation was inspected at flat roof and sloped roof lines 1 to 5 per approved CANAM drawings. Inspection included installation, welds and side lap fastening.
- In process inspection of deck installation was performed on type NS roof deck at sloped roof lines A to D.
- Welding of perimeter bent plate from lines A to D was inspected per dwg. E4 sect. 3D.
- Bolted connections on galvanized mechanical platform at roof were inspected.

All work inspected appeared acceptable.

The contractor and erector were advised of our observations.

Inspector; Neal J White

CWI #86070201

ICC #8014170-S1

ULTRASONIC TEST REPORT

Date: **January 16, 2018**

Report: **013**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 Mhz**

Project: **Waynflete Lower School**

Ultrasonic Unit: **Epoch 600**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1 - 15**

Welding Contractor: **Perro Welding Services**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Butt**

Material: **ASTM A992, A500**

Weld Identification	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment Connections rafters														
A/8.5 TF	X		70	A	1-3		54							
A/6 TF	X													
A/4 TF	X													
D/6 TF	X													
D/4 TF														
HSS 16x8x1/2 splice														
D/4 N,S	X		70	A	1-3		56							
D/4 S	X													

Remarks: **Only top flanges were tested on rafters.**

Technician: **Neal J White**

Level: **II**

Client: S.W. Cole Engineering, Inc.**Project:** Waynflete Lower School**SWC Project:** 15-0577.1**Date:** January 25, 2018**Subject:** Site Inspection of Structural Steel**Report:** 014

As scheduled, a site visit was made on this date to continue inspection of structural steel framing. Upon arrival we met with the welding contractor and the general contractor.

Our actions and observations were as follows:

- Completed moment connections at the Roof framing were visually inspected and tested using ultrasound. See the attached report for locations tested.
- Misaligned bottom flange connections at the Roof framing were repaired in accordance to MCE1 and MCE2. Visual inspection and ultrasonic testing were performed on the welds. See the attached report for locations tested.
- Completed CJP HSS girt splices at the Roof were visually inspected and tested using ultrasound. See the attached report for locations tested.

All work inspected appeared acceptable with the following exception:

1. The bottom flange moment connection at the Roof at N/11 south was CJP welded although the flange and the moment plate were misaligned. The west side of the connection was flush however the east side of the connection was off by $\frac{1}{4}$ ". See the photograph below. This connection was not intended to have any repair in accordance to MCE1.

The project superintendent was advised of our observations.



Misaligned moment connection at N/11 south

Inspector; Michael Bump
CWI #07091231

ULTRASONIC TEST REPORT

Date: **January 25, 2018**

Report: **014 page 1 of 2**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 Mhz**

Project: **Waynflete Lower School**

Ultrasonic Unit: **Epoch 600**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1 - 15**

Welding Contractor: **Perro Welding Services**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Butt, Tee**

Material: **ASTM A992, A36, A500**

Weld Identification	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment Connections Roof														
F/5 E,W BF	X		70	A	1-3		63							
F/7 N,S BF	X													
F/8 W BF	X													
N/8 N,E BF	X													
N/11 N,E BF	X													
P/10 N BF	X													
R/11 N BF	X													
Plate Moment Conn.s Roof														
N/8 W BF	X		70	A	1-3		63							
P/10 E BF	X													
P/11 W BF	X													
R/10 N BF	X													
HSS Girt Splices Roof														
A/2 N	X		70	A	1-3		63							
A/4 S	X													

Remarks:

ULTRASONIC TEST REPORT

Date: **January 25, 2018**

Report: **014 page 2 of 2**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 Mhz**

Project: **Waynflete Lower School**

Ultrasonic Unit: **Epoch 600**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1 - 15**

Welding Contractor: **Perro Welding Services**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Butt, Tee**

Material: **ASTM A992, A36, A500 r. B**

Weld Identification	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
HSS Girt Splices Roof														
A/6 N,S	X		70	A	1-3		63							
A/8.5 S	X													

Remarks:

Technician: **Michael Bump** Level: **II**



Submittal

Job: 171070
Waynflete Lower School
360 Spring Street
Portland, ME 04102

Spec Section No: 051200
Submittal No: 006
Revision No: 0
Sent Date: 11/15/2017

Spec Section Title: Structural Steel
Submittal Title: Welder Certificates and Continuity Log

Contractor:
Wright-Ryan Construction, Inc.

Other:
Scott Simons Architects
Adam Wiles-Rosell

SUBMITTAL REVIEW:
Reviewed for general conformance with the design concept and contract documents. Markings or comments shall not be construed as relieving the Subcontractor from compliance with the project plans and specifications, nor departure therefrom. The Subcontractor remains responsible for details and accuracy, for conforming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of assembly and for performing the work in a safe manner.
WRIGHT-RYAN CONSTRUCTION, INC
BY: Nick Barto DATE: 11/15/2017

Architect's Stamp

<input type="checkbox"/> Reviewed	<input type="checkbox"/> Furnish as Corrected
<input type="checkbox"/> Rejected	<input type="checkbox"/> Revise and Resubmit
<input type="checkbox"/> Submit Specific Item	
<input checked="" type="checkbox"/> Received For Record	

This review is only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Corrections or comments made on the shop drawings during this review do not relieve contractor from compliance with the requirements of the plans and specifications. Approval of a specific item shall not include approval of an assembly of which the item is a component. Contractor is responsible for: dimensions to be confirmed and correlated at the jobsite; information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction; coordination of his or her Work with that of all other trades; and for performing all work in a safe and satisfactory manner.

Becker Structural Engineers, Inc
Date: 12/01/2017 By: ARW

Name of Welder Nick Perro
 Name American Aerial Identification No. 0000-5042
 Welding Procedure Specification No. 1 Rev. N/A Date June 22, 2004

Variables	Record Actual Values Used in Qualification	Qualification Range
Process/Type [Table 4.10, Item (1)]	FCAW	
Electrode (single or multiple) [Table 4.10, Item (2)]	045 E71T-11	ALL
Current Polarity	140 A DC+	
Position [Table 4.10, Item (6)]	3G	
Weld Progression [Table 4.10, Item (6)]	N/A	
Backing (YES or NO) [Table 4.10, Item (7)]	YES	YES
Material/Spec.	Group 1	to Group 1
Base Metal		
Thickness: (Plate)		
Groove	1"	UNLIMITED
Fillet	N/A	UNLIMITED
Thickness: (Pipe/Tube)		
Groove	N/A	UNLIMITED
Fillet	N/A	UNLIMITED
Diameter: (Pipe)		
Groove	N/A	OVER 24" DIA.
Fillet	N/A	OVER 24" DIA.
Filler Metal [Table 4.10, Item (3)]		
Spec. No.	A5.20	
Class	E71T-11	
F-No. [Table 4.10, Item (2)]	F6	F6
Gas/Flux Type [Table 4.10, Item (3)]	N/A	
Other	N/A	N/A

VISUAL INSPECTION (4.8.1)

Acceptable: YES or NO **YES**

Guided Bend Test Results (4.30.5)

Type	Result	Type	Result
1G SIDE BEND	N/A	1G SIDE BEND	N/A
	N/A		N/A
Fillet Test Results (4.30.2.3 and 4.30.4.1)			
Appearance	N/A	Fillet Size	N/A
Fracture Test Root Penetration	N/A	Macroetch	N/A

(Describe the location, nature, and size of any crack or tearing of the specimen.)

Inspected by Brad Wells CWI # 00050221 Test Number N/A
 Organization Maine Oxy Date June 23, 2004

RADIOGRAPHIC TEST RESULTS (4.30.3.1)

Film Identification			Film Identification		
Number	Results	Remarks	Number	Results	Remarks
N/A Nick Perro	N/A Accept	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

Interpreted by N/A Ryan Russell CWI Test Number N/A 04-414
 Organization N/A OAL Date N/A June 23, 2004

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of section 4 of AWS D1.1, (xxx) Structural Welding Code — Steel.

Manufacturer or Contractor American Aerial Serv. Authorized By [Signature]
 Date 6/22/04

Witnessed welding in the process
and weld appearance was acceptable

all the CWI #02050551

Welding Employment
Verified
Updated per AWS D1.1-4.1.3
Neal J White, CWI #86070201




Neal J White
CWI #86070201
GC1 EXP. 7/1/2019

Welding Employment
Verified

Updated per AWS D1.1-4.1.3
Neal J White, CWI #86070201

6/8/17

WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD

Welder or Welding Operators Name: **Nick Perro** Identification No.: **NP**
 Welding Process: **FCAW** Manual: Semiautomatic: Machine: 
 Position: **Overhead**
 In accordance with Procedure Specification No.: **Weng-1-FCAW**
 Joint type: **Groove Weld (ref. AWS D1.1-10 fig.4.31)**
 Material Specification: **ASTM A36**
 Thickness tested: **3/8"**
 Qualified for: **Unlimited fillet (1F, 2F, 4F) Groove weld through 3/4" (1G, 2G, 4G)**

FILLER METAL

Specification No **AWS A 5.29** Classification: **E71TG-G** F No.: **6**
 Filler metal diameter and trade name: **5/64" Lincoln NR212** Gas: **NA**

VISUAL INSPECTION

Appearance: **Acceptable** Undercut: **None** Porosity: **None**

BEND TEST RESULT

<u>TYPE</u>	<u>RESULT</u>	<u>TYPE</u>	<u>RESULT</u>
Face	Acceptable	Root	Acceptable

Test conducted by: **Neal J White** Laboratory Test No.: **NP**
 Per: **AWS D1.1 2010 fig.4.12 & 4.15** Test Date: **October 26, 2010**

We the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of: **AWS D1.1 10**

Name: **Neal J White**
 Date: **October 27, 2010**
 CWI No.: **86070201**




and weld appearance was acceptable
all the CWI # 02050557
02050557
AN

Welding Employment
Verified
Updated per AWS D11.1-4.1.3
Neal J White CWI #86070201



Neal J White
CWI 86070201
QC1 EXP. 7/1/2019

Welding Employment
Verified
Updated per AWS D11.1-4.1.3
Neal J White CWI #86070201



6/8/17

Neal J White
CWI #86070201

WELDER QUALIFICATIONS DATA AND DATES 2017

	CERTIFIED	POSITION	DATES, JOBS and WITNESSED	PROCESS	SMAW			
					QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4
BERRY, PAUL	YES	ALL	2/3/17-UNE COMMONS- ZJ	2/3/17-UNE COMMONS- ZJ	6/19/17- GEIGER- ZJ	9/12/17- CLEARVIEW FARMS- ZJ		
BRITTING, WILLIAM	YES	ALL	2/3/17- STOPAND SHOP- ZJ	2/3/17- STOPAND SHOP- ZJ	6/21/17- 62 INDIA STREET- ZJ	9/15/17- 16 MIDDLE STREET- ZJ		
BROAD, KYLE	NO		1/30/17- SETTLERS GREEN- ZJ	TERMINATED	TERMINATED	TER		
COLLINS, KEITH	YES	ALL	2/3/17-UNE COMMONS- ZJ	2/3/17-UNE COMMONS- ZJ	6/21/17- 62 INDIA STREET- ZJ	9/12/17- CLEARVIEW FARMS- ZJ		
COOPER, CARL	YES	ALL	2/3/17- STOPAND SHOP- ZJ	2/3/17- STOPAND SHOP- ZJ	TERMINATED	TER		
JOHNDRO, ZACKERY	YES	ALL	2/17/17- PRIME MERCEDES- JR	2/17/17- PRIME MERCEDES- JR	N/A	9/12/17- CLEARVIEW FARMS- ZJ		
JONES, CARROL	NO		n/a	n/a	N/A	N/A		
MORRISON, BARRY	YES	ALL	2/3/17- STOPAND SHOP- ZJ	2/3/17- STOPAND SHOP- ZJ	6/21/17- 62 INDIA STREET- ZJ	9/15/17- 16 MIDDLE STREET- ZJ		
MOSHER, CHRIS	YES	ALL	n/a	n/a	6/19/17- GEIGER- ZJ	9/11/17- KENNEBUNK HIGH- ZJ		
NYE, CHRIS	YES	ALL	2/3/17-UNE COMMONS- ZJ	2/3/17-UNE COMMONS- ZJ	6/18/19- SUMMIT- ZJ	9/13/17- BOSTON POST RD- ZJ		
PARKER, JOSH	YES	ALL	2/1/17- MDOC- ZJ	2/1/17- MDOC- ZJ	6/21/17- 62 INDIA STREET- ZJ	9/15/17- 16 MIDDLE STREET- ZJ		
PATTERSON, ANTHONY	YES	ALL	1/30/17- SETTLERS GREEN- ZJ	1/30/17- SETTLERS GREEN- ZJ	6/18/19- SUMMIT- ZJ	9/14/17- LINCOLN HEALTH- ZJ		
PERRO, COREY	YES	ALL			TERMINATED	TER		
PIZZO, JOSEPH	NO				NA	TER		
READ, JAMES	YES	ALL	2/17/17- PRIME MERCEDES- ZJ	2/17/17- PRIME MERCEDES- ZJ	6/18/19- SUMMIT- ZJ	9/16/17- YARD- ZJ		
SANDERS, STEVEN	YES	ALL	2/3/17-UNE COMMONS- ZJ	2/3/17-UNE COMMONS- ZJ	6/21/17- 62 INDIA STREET- ZJ	9/14/17- LINCOLN HEALTH- ZJ		

WELDER QUALIFICATIONS DATA AND DATES 2017

	CERTIFIED	POSITION	DATES, JOBS and WITNESSED	PROCESS	FCAW			
					QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4
BERRY, PAUL	NO	ALL	2/3/17-UNE COMMONS- ZJ	2/3/17-UNE COMMONS- ZJ	6/19/17- GEIGER- ZJ	9/12/17- CLEARVIEW FARMS- ZJ		
BRITTING, WILLIAM	YES	ALL	2/3/17- STOPAND SHOP- ZJ	2/3/17- STOPAND SHOP- ZJ	6/21/17- 62 INDIA STREET- ZJ	9/15/17- 16 MIDDLE STREET- ZJ		
BROAD, KYLE	NO		1/30/17- SETTLERS GREEN- ZJ	TERMINATED	TERMINATED	TER		
COLLINS, KEITH	NO	ALL	2/3/17-UNE COMMONS- ZJ	2/3/17-UNE COMMONS- ZJ	6/21/17- 62 INDIA STREET- ZJ	9/12/17- CLEARVIEW FARMS- ZJ		
JOHNDRO, ZACKERY	NO		N/A	N/A	N/A	N/A		
MOSHER, CHRIS	YES	ALL	n/a	n/a	6/19/17- GEIGER- ZJ	9/11/17- KENNEBUNK HIGH- ZJ		
NYE, CHRIS	YES	ALL	2/3/17-UNE COMMONS- ZJ	2/3/17-UNE COMMONS- ZJ	6/18/19- SUMMIT- ZJ	9/13/17- BOSTON POST RD- ZJ		
PERRO, COREY	YES	ALL	1/30/17- SETTLERS GREEN- ZJ	1/30/17- SETTLERS GREEN- ZJ	TERMINATED	TER		

WELDER QUALIFICATIONS DATA AND DATES 2017

	CERTIFIED	POSITION	DATES, JOBS and WITNESSED	PROCESS	AWS D13			
					QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4
BERRY, PAUL	YES	ALL	2/3/17-UNE COMMONS- ZJ	2/3/17-UNE COMMONS- ZJ	6/19/17- GEIGER- ZJ	9/12/17- CLEARVIEW FARMS- ZJ		
BRITTING, WILLIAM	YES	FLAT	2/3/17- STOPAND SHOP- ZJ	2/3/17- STOPAND SHOP- ZJ	6/21/17- 62 INDIA STREET- ZJ	9/15/17- 16 MIDDLE STREET- ZJ		
BROAD, KYLE	NO		1/30/17- SETTLERS GREEN- ZJ	TERMINATED	TERMINATED	TER		
COLLINS, KEITH	NO	FLAT	2/3/17-UNE COMMONS- ZJ	2/3/17-UNE COMMONS- ZJ	6/21/17- 62 INDIA STREET- ZJ	9/12/17- CLEARVIEW FARMS- ZJ		
COOPER, CARL	NO	FLAT	2/3/17- STOPAND SHOP- ZJ	2/3/17- STOPAND SHOP- ZJ	TERMINATED	TER		
JOHNDRO, ZACKERY	NO	FLAT	2/17/17- PRIME MERCEDES- JR	2/17/17- PRIME MERCEDES- JR	6/19/17- GEIGER- JR	9/12/17- CLEARVIEW FARMS- ZJ		
JONES, CARROL	NO	FLAT	2/3/17-UNE COMMONS- ZJ	2/3/17-UNE COMMONS- ZJ	6/18/19- SUMMIT- ZJ	9/15/17- 16 MIDDLE STREET- ZJ		
MORRISON, BARRY	YES	FLAT	2/3/17- STOPAND SHOP- ZJ	2/3/17- STOPAND SHOP- ZJ	6/21/17- 62 INDIA STREET- ZJ	9/11/17- KENNEBUNK HIGH- ZJ		
MOSHER, CHRIS	NO	FLAT	2/3/17-UNE COMMONS- ZJ	2/3/17-UNE COMMONS- ZJ	6/19/17- GEIGER- ZJ	9/13/17- BOSTON POST RD- ZJ		
NYE, CHRIS	NO	FLAT	n/a	n/a	N/A	9/14/17- LINCOLN HEALTH- ZJ		
PARKER, JOSH	NO	FLAT	2/3/17-UNE COMMONS- ZJ	2/3/17-UNE COMMONS- ZJ	6/18/19- SUMMIT- ZJ	9/15/17- 16 MIDDLE STREET- ZJ		
PATTERSON, ANTHONY	NO	FLAT	2/1/17- MDOC- ZJ	2/1/17- MDOC- ZJ	TERMINATED	TER		
PERRO, COREY	NO	FLAT	n/a	n/a	NA	N/A		
PIZZO, JOSEPH	NO	FLAT	2/17/17- PRIME MERCEDES- ZJ	2/17/17- PRIME MERCEDES- ZJ	6/18/19- SUMMIT- ZJ	9/16/17- YARD- ZJ		
READ, JAMES	NO	FLAT	2/17/17- PRIME MERCEDES- ZJ	2/17/17- PRIME MERCEDES- ZJ	6/21/17- 62 INDIA STREET- ZJ	9/14/17- LINCOLN HEALTH- ZJ		
SANDERS, STEVEN	NO	FLAT						

OBSERVATION REPORT
Structural Steel

Date:	11/15/17
Time:	1:30 PM
Temp:	39° F
Weather:	Cloudy

Project:	Waynflete Lower School
Location:	Portland, ME
Becker Job No:	3660.90

Observation Location:
Main floor steel from 8-11 line between H&J

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Bolt Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ref report by weld/bolt inspector
Weld Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ref report by weld/bolt inspector
Anchor Bolts, Nuts, & Washers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ref report by weld/bolt inspector
Grout/Leveling Plates	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fit Up/Plumbness	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Metal Deck Welds	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Pour Stops	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Bracing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(See below)
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Notes:

I met with Millard Nadeau (Wright-Ryan) on site to review construction progress and review structural steel for general conformance with the design intent.

While on site I observed that the foundation wall beam pockets had been mislocated by approximately (1'-0") along 11 line from N to J. Corrective action was taken by the GC without notifying BSE. New bearing plates were installed with post installed epoxy anchors. Field fix is acceptable, however in the future BSE should be notified of in field discrepancies prior to corrective actions.

Moment connections identified as misaligned in White Engineering LLC report dated 11/14/17 have been reviewed with design moments and found to be acceptable. Report indicates that bottom flanges were aligned and welded first resulting in only top flange misalignment. In areas where moment connections are not exposed recommend centering beams between flange plates to mitigate misalignment.

See RFI47 response for moment connections unable to be installed at the underside of beams at each side of CMU shaft.

While on site I also reviewed Founder's Hall progress.

Signed: Alexander Wheelock, E.I.

OBSERVATION REPORT
Structural Steel

Date:	11/28/17
Time:	10:00 AM
Temp:	36° F
Weather:	Partly Cloudy

Project:	Waynflete Lower School
Location:	Portland, ME
Becker Job No:	3660.90

Observation Location:
Main floor steel and Main entry stair steel.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Bolt Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ref report by weld/bolt inspector
Weld Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ref report by weld/bolt inspector
Anchor Bolts, Nuts, & Washers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ref report by weld/bolt inspector
Grout/Leveling Plates	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fit Up/Plumbness	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	At stair to foundation (See below)
Metal Deck Welds	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Pour Stops	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Bracing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(See below)
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Notes:

I met with Millard Nadeau (Wright-Ryan) on site to review construction progress and review structural steel for general conformance with the design intent.

Stair stringers do not bear completely on foundation piers (see attached photo). Additionally interior stair stringers appear to have a slight skew from mid stair to foundation piers. GC to review impacts to stair tread dimensions and elevations and send to BSE for review. BSE to issue field fix for as-built conditions.

Moment connections identified as misaligned in White Engineering LLC report dated 11/15/17, 11/17/17, and 11/21/17 (FR002-FR004) have been reviewed with design moments and found to be acceptable.

While on site I also reviewed Founder's Hall progress.

Signed: Alexander Wheelock, E.I.



OBSERVATION REPORT
Structural Steel

Date:	12/08/17
Time:	10:00 AM
Temp:	36° F
Weather:	Partly Cloudy

Project:	Waynflete Lower School
Location:	Portland, ME
Becker Job No:	3660.90

Observation Location:
Main floor steel and metal deck had been installed. Erectors were in the process of installing upper floor/low roof steel and moment connections.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Bolt Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ref report by weld/bolt inspector
Weld Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ref report by weld/bolt inspector
Anchor Bolts, Nuts, & Washers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ref report by weld/bolt inspector
Grout/Leveling Plates	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fit Up/Plumbness	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Misaligned moment connections per weld inspector reports.
Metal Deck Welds	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ref report by weld/bolt inspector
Pour Stops	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Bracing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(See below)
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Notes:

I met with Millard Nadeau (Wright-Ryan) on site to review construction progress and review structural steel for general conformance with the design intent.

While on site I reviewed conditions pertaining to misaligned moment connections at 3-E & 3-F at low roof and proposed field fixes issued by McBrady in email exchange on 12/7 & 12/8. Proposed fixes were found acceptable.

I was notified of additional misaligned moment connections at the upper level via email exchange on 12/12. These areas had not yet been inspected and were brought up by the welder prior to beginning work. McBrady submitted field fixes via email which were reviewed, marked-up and returned. A formal submittal documenting these field fixes will be issued.

Signed: Alexander Wheelock, P.E.

OBSERVATION REPORT
Open Web Steel Joists

Date:	12/08/17
Time:	10:00 AM
Temp:	36° F
Weather:	Partly Cloudy

Project:	Waynflete Elementary School
Location:	Portland, ME
Becker Job No:	3660.90

Observation Location: Main Floor Joists

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Seat Connection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Bridging	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	BSE to issue SKS for bridging termination at concrete foundation wall.
Bracing	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Tie joist Connection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Notes:

I met with Millard Nadeau (Wright-Ryan) on site to review construction progress and review steel joists for general conformance with the design intent.

Signed: Alexander Wheelock, P.E.

Section B: 06100



OBSERVATION REPORT
Rough Carpentry

Date:	2/5/18
Time:	8:40am
Temp:	40 degrees
Weather:	Overcast

Project:	Waynflete Founders Hall
Location:	Waynflete School, Portland ME
Becker Job No:	3660

Observation Location: First and second floor Founders Hall at existing/new intersection.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Member Sizes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Material Quality	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Bearing Condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Connections	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Holdowns – Not visible – Previously reviewed
Nailing Pattern	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Bridging/Bracing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Other: Blocking	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Notes:

Discussed progress of wood framed shearwalls with Millard Nadeau (Wright-Ryan) on site. Confirmed completion of lateral system at Founders Hall.

Gypsum board covered most conditions. Some wall blocking, plywood, and nailing visible at gable end abutting Lower School (see attached photos). Remaining conditions verbally confirmed by GC. Visible blocking, nailing, and plywood substantially conforms to structural drawings and details.

Note: Holdowns and blocking at other shearwalls reviewed on previous visit.

Signed: Dylan Ball, E.I.



Section C: 01000



SEISMIC RESISTANCE CHECK LIST [IBC 1705.3]

Seismic Design Category B

<input type="checkbox"/> FOR SEISMIC DESIGN CATEGORY C OR HIGHER:	
Structural:	
<input type="checkbox"/> The seismic-force-resisting systems	
<input type="checkbox"/> Steel Braced Frames and associated connections/anchorage (Not required for SDC C, R=3)	
<input type="checkbox"/> Steel Moment Frames and associated connections (Not required for SDC C, R=3)	
<input type="checkbox"/> Shear walls: <input type="checkbox"/> CMU <input type="checkbox"/> Wood <input type="checkbox"/> Concrete <input type="checkbox"/> Diaphragms: <input type="checkbox"/> Floor <input type="checkbox"/> Roof	
<input type="checkbox"/> Other:	

WIND RESISTANCE CHECK LIST [IBC 1705.4]

Wind Exposure Category C

REQUIRED	NOT REQUIRED	NOT APPLICABLE	WIND RESISTANCE REQUIREMENTS
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	In wind exposure Category B, where the 3-second-gust basic wind speed is 120 miles per hour (mph) (52.8 m/sec) or greater.
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	In wind exposure Categories C and D, where the 3-second-gust basic wind speed is 110 mph (49 m/sec) or greater.

Fabricator's Certificate of Compliance

Each approved fabricator that is exempt from Special Inspection of shop fabrication and implementation procedures per section 1704.2 of the International Building Code must submit a *Fabricator's Certificate of Compliance* at the completion of fabrication.

Project: *WAYNFLETE LOWER SCHOOL ADDITION & RENOVATION*

Fabricator's Name: James A. McBrady, Inc.

Address: PO Box 8239 Portland ME 04104

Certification or Approval Agency: American Institute of Steel Construction (AISC)

Certification Number: 207051031-06CCRF

Date of Last Audit or Approval: September 2017

Description of structural members and assemblies that have been fabricated:

Structural steel framing per contract documents.

I hereby certify that items described above were fabricated in strict accordance with the approved construction documents.


Signature

5/10/18

Date

President

Title

Attach copies of fabricator's certification or building code evaluation service report and fabricator's quality control manual

American Institute of Steel Construction

is proud to recognize that

James A. McBrady, Inc.

maintains operations located at

29 Parkway Dr., Scarborough, ME

that successfully meet the quality certification requirements for

Standard for Steel Building Structures

Standard for Bridge and Highway Metal Components

Sophisticated Paint Endorsement - Enclosed



Charles J. Carter



207051031-06CCRF

Certification Number

Certification valid through: **September 2018**



MILL CERTIFICATIONS

PROJECT **Waynflete Lower School**

STRUCTURAL STEEL RECEIVED DATE: 05-23-18 NOT RECEIVED

BOLTS RECEIVED DATE: 05-23-18 NOT RECEIVED

WELD FILLER RECEIVED DATE: 06-01-18 NOT RECEIVED

ITEMS ABOVE MARKED "RECEIVED" HAVE NOT BEEN INCLUDED IN THIS REPORT DUE TO THE LARGE VOLUME. HARD COPIES ARE AVAILABLE UPON REQUEST.

SPECIAL INSPECTOR: ARW

DATE: 06-01-18

Project: WAYNFLETE LOWER SCHOOL ADDITION & RENOVATIONS
Date Prepared: January 12, 2017

End of Structural Statement of Special Inspections