BECKER
STRUCTURAL ENGINEERS

Structural Special Inspections Report

Alumni Hall Renovation
University of New England

Portland, Maine
March 23, 2016

Report Prepared by:

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

Alumni Hall Renovation
University of New England

Portland, Maine
March 23, 2016

Structural Engineer of Record
Becker Structural Engineers
75 York Street
Portland, ME 04101
207.879.1838

Owner
University of New England
11 Hills Beach Road
Biddeford, ME 04005
207.283.0171

Architect of Record
Port City Architecture
65 Newbury Street
Portland, ME 04101
207.761.9000

Contractor
Consigli Construction
15 Franklin Street, Ste A1
Portland, ME 04101
207.773.3000

Alumni Hall Renovation
University of New England
Portland, Maine
March 23, 2016

Table of Contents

Structural Statement of Special Inspections

Project: *Alumni Hall Renovation*

Location: *Portland, Maine*

Owner: *University of New England*

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.

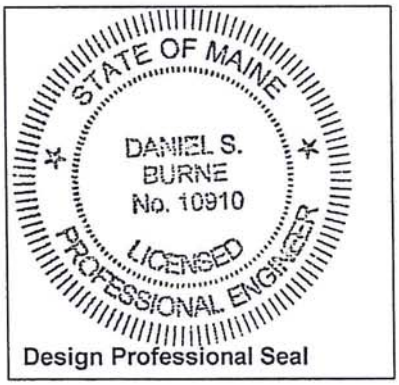
Interim Report Frequency: ☒ *Upon request of Building Official* _____ or ☐ per attached schedule.

Prepared by:

Daniel S. Burne, P.E.

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

Signature — Date: *5/1/15*



Design Professional Seal

Owner's Authorization:

Signature — Date

Building Code Official's Acceptance:

Signature — Date

Structural Statement of Special Inspections (Continued)

List of Agents

Project: *Alumni Hall Renovation*

Location: *Portland, Maine*

Owner: *University of New England*

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 (n/a SDC B)

☐ Special Cases

Special Inspection Agencies	Firm	Address, Telephone, e-mail
1. **STRUCTURAL Special Inspections Coordinator (SSIC)**	*Becker Structural Engineers*	*75 York St.* *Portland, ME 04101* *207-879-1838* *info@beckerstructural.com*
2. Special Inspector (SI 1)	*Becker Structural Engineers*	*75 York St* *Portland, ME 04101* *207-879-1838* *info@beckerstructural.com*
3. Special Inspector (SI 2)	*Summit Geoengineering Services*	*145 Lisbon St.* *Lewiston, ME 04240* *207-576-3313* *bpeterlein@summitgeoeng.com*
4. Testing Agency (TA 1)	*SW Cole Engineering, Inc*	*286 Portland Rd* *Gray, ME 04039* *207-657-2866* *inforgray@swcole.com*
5. Testing Agency (TA 2)		
6. Other (O1)		

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.

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: *Alumni Hall Renovation*
Location: *Portland, Maine*
Owner: *University of New England*
Owner's Address: *11 Hills Beach Rd*
Biddeford ME 04005

Architect of Record:	*Lita Semrau*	*Port City Architecture*
	(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.

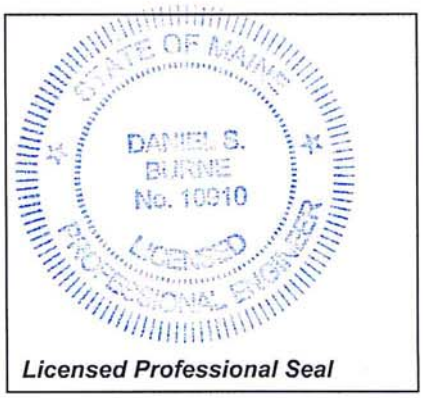
Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,
Structural Special Inspection Coordinator

DANIEL S. BURNE, P.E.
(Type or print name)

BECKER STRUCTURAL ENGINEERS
(Firm Name)

Signature — 5/28/16 Date



Licensed Professional Seal

Structural Statement of Special Inspections (Continued)

Special Inspector's/Agent's Final Report

Project: *Alumni Hall Renovation*

Special Inspector or Agent: William Peterlein *Summit Geoengineering Services*
(name) *(firm)*

Designation: 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.

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:

William Peterlein
(Type or print name)

William M Peterlein 3-16-2016
Signature Date

Licensed Professional Seal or
Certification Number

Structural Statement of Special Inspections (Continued)

Special Inspector's/Agent's Final Report

Project: *Alumni Hall Renovation*

Special Inspector or Agent: Roger E. Domingo *(name)* SW Cole Engineering *(firm)*

Designation: TA1

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)

Roger E Domingo 3/23/16
Signature Date

SEAL NOT REQUIRED FOR TESTING AGENCY

Licensed Professional Seal or
Certification Number

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

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.

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

01000.5 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.

Project: Alumni Hall Renovation - University of New England
Date Prepared: 5/1/15

Structural Schedule of Special Inspections

SOILS & FOUNDATION CONSTRUCTION

VERIFICATION AND INSPECTION IBC Section 1704.7, 1704.8, 1704.9	REQD Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
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	Y
b. Verify excavations are extended to proper depth and have reached proper material.	Y	P	IBC 1704.7	SI2	PE/GE, EIT or ETT	Y
c. Perform classification and testing of compacted fill materials.	Y	P	IBC 1704.7	TA1	PE/GE, EIT or ETT	Y
d. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	Y	C	IBC 1704.7	TA1	PE/GE, EIT or ETT	Y
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	Y
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		PE/GE, EIT or ETT	
b. Determine capacities of test elements and conduct additional load tests, as required.	N	C	IBC 1704.8		PE/GE, EIT or ETT	
c. Observe driving operations and maintain complete and accurate records for each element.	N	C	IBC 1704.8		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		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		PE/GE, EIT or ETT	
b. Verify placement locations and plumbness, confirm elelment 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		PE/GE, EIT or ETT	

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

SUMMIT
GEOENGINEERING SERVICES

DAILY FIELD REPORT

Date: 8/13/2015

Project: UNE Alumni Hall, Portland, Maine

Project #: 14232

Site Contacts: Lee Follett, Consigli

Purpose of Visit: Perform observations of building foundation subgrade conditions

Comments:

On site to observe the subgrade soil at the ground floor in the west portion of the new building, in the area shown on the attached sketch.

The soil consisted of native sand with a little gravel and trace of silt. The soil was proofrolled adequately. The excavation was dry. The subgrade conditions are suitable for placing the Structural Fill.

Signed: William M Patterson

cc:

P.O. Box 7216, Lewiston, Maine 04243, (207) 576-3313
P.O. Box 383, Camden, Maine 04843, (207) 318-7761

SUMMIT
GEOENGINEERING SERVICES

PHOTOGRAPHIC LOG

Project Name:	**Project No.**
UNE Alumni Hall Addition/Renovation, Portland, Maine	14232

Photo No. 1

Date: 8-13-15

Site Location:

Description:

Subgrade in west area looking south.

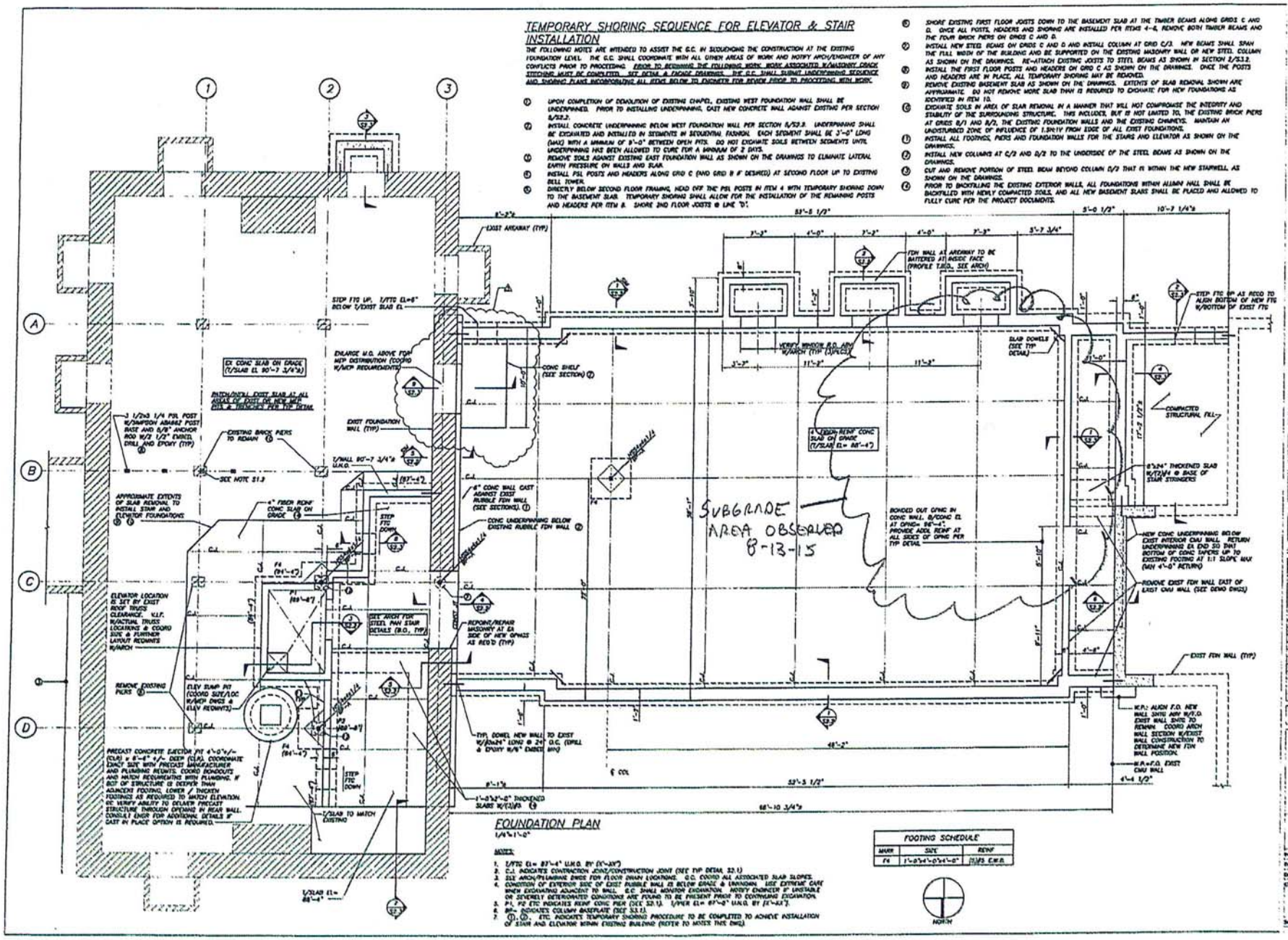
Photo No. 2

Date: 8-13-15

Site Location:

Description:

Subgrade in west area looking north.


TEMPORARY SHORING SEQUENCE FOR ELEVATOR & STAIR INSTALLATION
THE FOLLOWING NOTES ARE INTENDED TO ASSIST THE G.C. IN SEQUENCING THE CONSTRUCTION AT THE EXISTING FOUNDATION LEVEL. THE G.C. SHALL COORDINATE WITH ALL OTHER AREAS OF WORK AND NOTIFY ARCH/ENGINEER OF ANY CONFLICTS PRIOR TO PROCEEDING. PRIOR TO BEGINNING THE FOLLOWING WORK, MORE ASSOCIATED W/MASONRY GRADE STITCHING MUST BE COMPLETED. SEE DETAIL & FACADE DRAWINGS. THE G.C. SHALL SUBMIT UNDERPINNING SEQUENCE AND SHORING PLANS INCORPORATING ALL ITEMS BELOW TO ENGINEER FOR REVIEW PRIOR TO PROCEEDING WITH WORK.
1 UPON COMPLETION OF DEMOLITION OF EXISTING CHAPEL, EXISTING WEST FOUNDATION WALL SHALL BE UNDERPINNED. PRIOR TO INSTALLING UNDERPINNING, CAST NEW CONCRETE WALL AGAINST EXISTING PER SECTION 8/S2.2.
2 INSTALL CONCRETE UNDERPINNING BELOW WEST FOUNDATION WALL PER SECTION 8/S2.2. UNDERPINNING SHALL BE EXCAVATED AND INSTALLED IN SEGMENTS IN SEQUENTIAL FASHION. EACH SEGMENT SHALL BE 3'-0" LONG (MAX) WITH A MINIMUM OF 9'-0" BETWEEN OPEN PITS. DO NOT EXCAVATE SOILS BETWEEN SEGMENTS UNTIL UNDERPINNING HAS BEEN ALLOWED TO CURE FOR A MINIMUM OF 2 DAYS.
3 REMOVE SOILS AGAINST EXISTING EAST FOUNDATION WALL AS SHOWN ON THE DRAWINGS TO ELIMINATE LATERAL EARTH PRESSURE ON WALLS AND SLAB.
4 INSTALL PSL POSTS AND HEADERS ALONG GRID C (AND GRID B IF DESIRED) AT SECOND FLOOR UP TO EXISTING BELL TOWER.
5 DIRECTLY BELOW SECOND FLOOR FRAMING, HEAD OFF THE PSL POSTS IN ITEM 4 WITH TEMPORARY SHORING DOWN TO THE BASEMENT SLAB. TEMPORARY SHORING SHALL ALLOW FOR THE INSTALLATION OF THE REMAINING POSTS AND HEADERS PER ITEM 8. SHORE 2ND FLOOR JOISTS @ LINE 'D'.
6 SHORE EXISTING FIRST FLOOR JOISTS DOWN TO THE BASEMENT SLAB AT THE TIMBER BEAMS ALONG GRIDS C AND D. ONCE ALL POSTS, HEADERS AND SHORING ARE INSTALLED PER ITEMS 4-6, REMOVE BOTH TIMBER BEAMS AND THE FOUR BRICK PIERS ON GRIDS C AND D.
7 INSTALL NEW STEEL BEAMS ON GRIDS C AND D AND INSTALL COLUMN AT GRID C/3. NEW BEAMS SHALL SPAN THE FULL WIDTH OF THE BUILDING AND BE SUPPORTED ON THE EXISTING MASONRY WALL OR NEW STEEL COLUMN AS SHOWN ON THE DRAWINGS. RE-ATTACH EXISTING JOISTS TO STEEL BEAMS AS SHOWN IN SECTION 2/S3.2.
8 INSTALL THE FIRST FLOOR POSTS AND HEADERS ON GRID C AS SHOWN ON THE DRAWINGS. ONCE THE POSTS AND HEADERS ARE IN PLACE, ALL TEMPORARY SHORING MAY BE REMOVED.
9 REMOVE EXISTING BASEMENT SLAB AS SHOWN ON THE DRAWINGS. EXTENTS OF SLAB REMOVAL SHOWN ARE APPROXIMATE. DO NOT REMOVE MORE SLAB THAN IS REQUIRED TO EXCAVATE FOR NEW FOUNDATIONS AS IDENTIFIED IN ITEM 10.
10 EXCAVATE SOILS IN AREA OF SLAB REMOVAL IN A MANNER THAT WILL NOT COMPROMISE THE INTEGRITY AND STABILITY OF THE SURROUNDING STRUCTURE. THIS INCLUDES, BUT IS NOT LIMITED TO, THE EXISTING BRICK PIERS AT GRIDS B/1 AND B/2, THE EXISTING FOUNDATION WALLS AND THE EXISTING CHIMNEYS. MAINTAIN AN UNDISTURBED ZONE OF INFLUENCE OF 1.3H:1V FROM EDGE OF ALL EXIST FOUNDATIONS.
11 INSTALL ALL FOOTINGS, PIERS AND FOUNDATION WALLS FOR THE STAIRS AND ELEVATOR AS SHOWN ON THE DRAWINGS.
12 INSTALL NEW COLUMNS AT C/2 AND B/2 TO THE UNDERSIDE OF THE STEEL BEAMS AS SHOWN ON THE DRAWINGS.
13 CUT AND REMOVE PORTION OF STEEL BEAM BEYOND COLUMN D/2 THAT IS WITHIN THE NEW STAIRWELL AS SHOWN ON THE DRAWINGS.
14 PRIOR TO BACKFILLING THE EXISTING EXTERIOR WALLS, ALL FOUNDATIONS WITHIN ALUMNI HALL SHALL BE BACKFILLED WITH NEWLY COMPACTED SOILS, AND ALL NEW BASEMENT SLABS SHALL BE PLACED AND ALLOWED TO FULLY CURE PER THE PROJECT DOCUMENTS.
SUBGRADE AREA OBSERVED 8-13-15
FOUNDATION PLAN
1/4"=1'-0"
NOTES:
1. T/FTG EL= 87'-4" U.N.O. BY (C'-10")
2. C.J. INDICATES CONSTRUCTION JOINT/CONSTRUCTION JOINT (SEE TYP DETAIL S2.1)
3. SLS ARCH/PLUMBING SHOE FOR FLOOR DRAIN LOCATIONS. G.C. COORD ALL ASSOCIATED SLAB SLOPES.
4. CONDITION OF EXTERIOR SIDE OF EXIST RUBBLE WALL IS BELOW GRADE & UNKNOWN. USE EXTREME CARE WHEN EXCAVATING ADJACENT TO WALL. G.C. SHALL NOTIFY ENGINEER IF UNSTABLE OR SEVERELY DETERIORATED CONDITIONS ARE FOUND TO BE PRESENT PRIOR TO CONTINUING EXCAVATION.
5. P1, P2 ETC INDICATES REINF CONC PIER (SEE S2.1). (UNDER EL= 87'-4" U.N.O. BY (C'-10").
6. BP= INDICATES COLUMN BASEPLATE (SEE S3.1).
7. (1), (2), ETC. INDICATES TEMPORARY SHORING PROCEDURE TO BE COMPLETED TO ACHIEVE INSTALLATION OF STAIR AND ELEVATOR WITHIN EXISTING BUILDING (REFER TO NOTES THIS SHT.)
FOOTING SCHEDULE
MARK | SIZE | REINF
F4 | 1'-0"x1'-0"x1'-0" | (3)#5 E.W.B.
NORTH
65 NEWBURY STREET
PORTLAND, ME 04101
207.761.9000
info@portcityarch.com
WWW.PORTCITYARCH.COM
UNIVERSITY OF NEW ENGLAND
Allied Engineering
CONSIGLI
BECKER
CONSTRUCTION DOCUMENT SET
FOR CONSTRUCTION
REVISIONS
UNIVERSITY OF NEW ENGLAND
PORTLAND, MAINE
ALUMNI HALL RENOVATION
FOUNDATION PLAN
Project Number 1414
Date August 3, 2015
Drawn By MEK
Checked By CDW
S1.1
Scale AS NOTED

SUMMIT
GEOENGINEERING SERVICES

DAILY FIELD REPORT

Date: 9/15/2015

Project: UNE Alumni Hall, Portland, Maine

Project #: 14232

Site Contacts: Lee Follett, Consigli

Purpose of Visit: Perform observations of building foundation subgrade conditions

Comments:

On site to observe the subgrade soil at the ground floor in the east and center portions of the new building, in the area shown on the attached sketch.

The soil at the east side of the subject area consisted of native fine sand with a little silt. The soil at the center portion consisted of sand with a little gravel and trace of silt. All subgrade areas observed were proofrolled and in a dense condition. The subgrade conditions are suitable for placing the Structural Fill and constructing the isolated footing.

Signed: William M Ritchie

cc:

P.O. Box 7216, Lewiston, Maine 04243, (207) 576-3313
P.O. Box 383, Camden, Maine 04843, (207) 318-7761

SUMMIT
GEOENGINEERING SERVICES

PHOTOGRAPHIC LOG

Project Name:	**Project No.**
UNE Alumni Hall Addition/Renovation, Portland, Maine	14232

Photo No. 1

Date: 9-15-15

Site Location:

Description:

Footing Subgrade in Eastern and center portion of building, looking north.

Photo No. 2

Date: 9-15-15

Site Location:

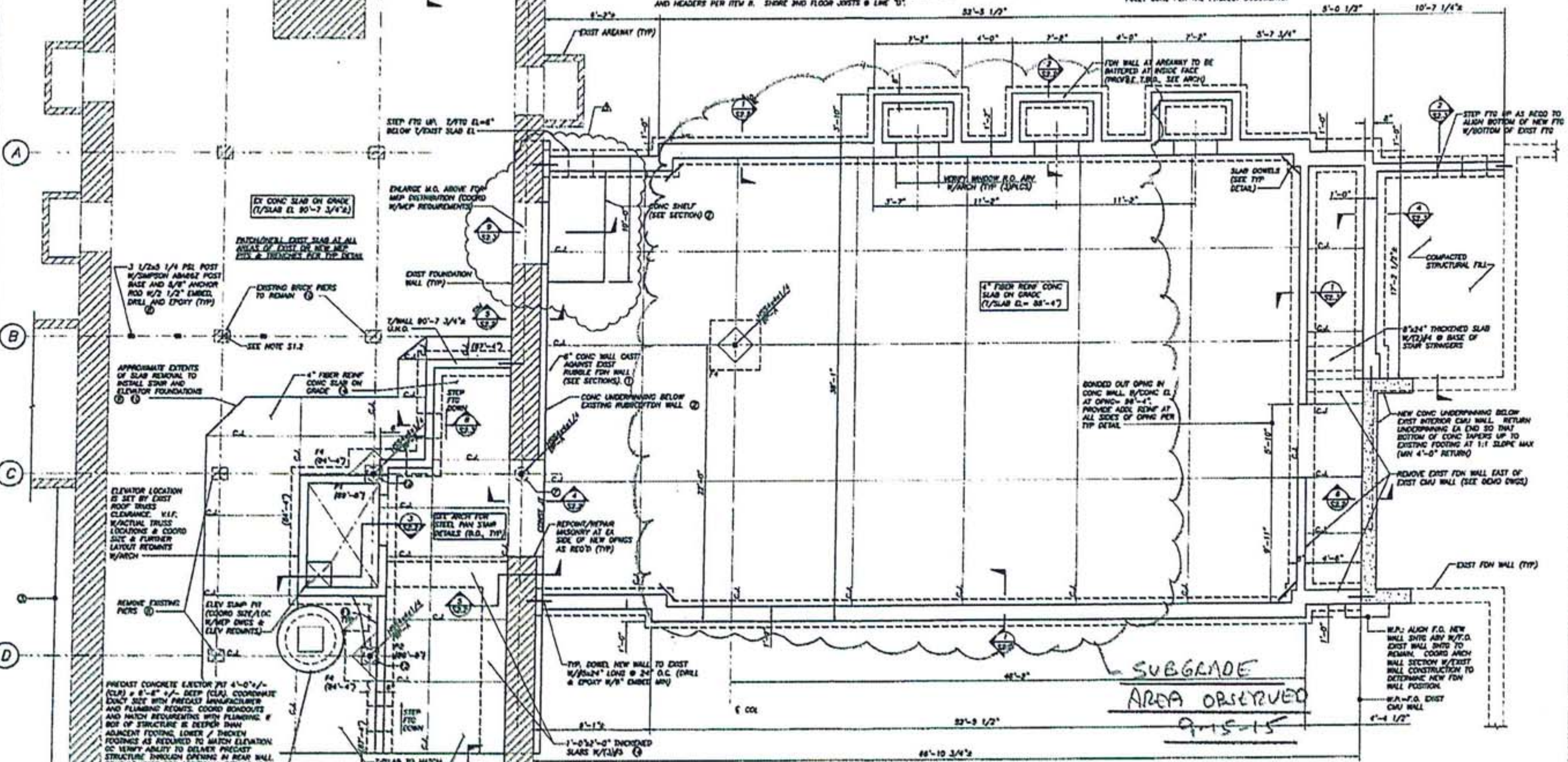
Description:

Footing Subgrade in Eastern and center portion of building, looking south.

TEMPORARY SHORING SEQUENCE FOR ELEVATOR & STAIR INSTALLATION

THE FOLLOWING NOTES ARE INTENDED TO ASSIST THE G.C. IN SEQUENCING THE CONSTRUCTION AT THE EXISTING FOUNDATION LEVEL. THE G.C. SHALL COORDINATE WITH ALL OTHER AREAS OF WORK AND NOTIFY ARCH/ENGINEER OF ANY CONFLICTS PRIOR TO PROCEEDING. PRIOR TO BEGINNING THE FOLLOWING WORK, WORK ASSOCIATED W/MASONRY CRACK STITCHING MUST BE COMPLETED. SEE DETAIL & FACADE DRAWINGS. THE G.C. SHALL SUBMIT UNDERPINNING SEQUENCE AND SHORING PLANS INCORPORATING ALL ITEMS BELOW TO ENGINEER FOR REVIEW PRIOR TO PROCEEDING WITH WORK.

1. UPON COMPLETION OF DEMOLITION OF EXISTING CHAPEL, EXISTING WEST FOUNDATION WALL SHALL BE UNDERPINNED. PRIOR TO INSTALLING UNDERPINNING, CAST NEW CONCRETE WALL AGAINST EXISTING PER SECTION 5/S2.2.
2. INSTALL CONCRETE UNDERPINNING BELOW WEST FOUNDATION WALL PER SECTION 8/S2.2. UNDERPINNING SHALL BE EXCAVATED AND INSTALLED IN SEGMENTS IN SEQUENTIAL FASHION. EACH SEGMENT SHALL BE 3'-0" LONG (MAX) WITH A MINIMUM OF 8'-0" BETWEEN OPEN PITS. DO NOT EXCAVATE SOILS BETWEEN SEGMENTS UNTIL UNDERPINNING HAS BEEN ALLOWED TO CURE FOR A MINIMUM OF 2 DAYS.
3. REMOVE SOILS AGAINST EXISTING EAST FOUNDATION WALL AS SHOWN ON THE DRAWINGS TO ELIMINATE LATERAL EARTH PRESSURE ON WALLS AND SLAB.
4. INSTALL PSL POSTS AND HEADERS ALONG GRID C (AND GRID B IF DESIRED) AT SECOND FLOOR UP TO EXISTING BELL TOWER.
5. DIRECTLY BELOW SECOND FLOOR FRAMING, HEAD OFF THE PSL POSTS IN ITEM 4 WITH TEMPORARY SHORING DOWN TO THE BASEMENT SLAB. TEMPORARY SHORING SHALL ALLOW FOR THE INSTALLATION OF THE REMAINING POSTS AND HEADERS PER ITEM 8. SHORE 2ND FLOOR JOISTS @ LINE "D".
6. SHORE EXISTING FIRST FLOOR JOISTS DOWN TO THE BASEMENT SLAB AT THE TIMBER BEAMS ALONG GRIDS C AND D. ONCE ALL POSTS, HEADERS AND SHORING ARE INSTALLED PER ITEMS 4–8, REMOVE BOTH TIMBER BEAMS AND THE FOUR BRICK PIERS ON GRIDS C AND D.
7. INSTALL NEW STEEL BEAMS ON GRIDS C AND D AND INSTALL COLUMN AT GRID C/3. NEW BEAMS SHALL SPAN THE FULL WIDTH OF THE BUILDING AND BE SUPPORTED ON THE EXISTING MASONRY WALL OR NEW STEEL COLUMN AS SHOWN ON THE DRAWINGS. RE-ATTACH EXISTING JOISTS TO STEEL BEAMS AS SHOWN IN SECTION 2/S3.2.
8. INSTALL THE FIRST FLOOR POSTS AND HEADERS ON GRID C AS SHOWN ON THE DRAWINGS. ONCE THE POSTS AND HEADERS ARE IN PLACE, ALL TEMPORARY SHORING MAY BE REMOVED.
9. REMOVE EXISTING BASEMENT SLAB AS SHOWN ON THE DRAWINGS. EXTENTS OF SLAB REMOVAL SHOWN ARE APPROXIMATE. DO NOT REMOVE MORE SLAB THAN IS REQUIRED TO EXCAVATE FOR NEW FOUNDATIONS AS IDENTIFIED IN ITEM 10.
10. EXCAVATE SOILS IN AREA OF SLAB REMOVAL IN A MANNER THAT WILL NOT COMPROMISE THE INTEGRITY AND STABILITY OF THE SURROUNDING STRUCTURE. THIS INCLUDES, BUT IS NOT LIMITED TO, THE EXISTING BRICK PIERS AT GRIDS B/1 AND B/2, THE EXISTING FOUNDATION WALLS AND THE EXISTING CHIMNEYS. MAINTAIN AN UNDISTURBED ZONE OF INFLUENCE OF 1.5H:1V FROM EDGE OF ALL EXIST FOUNDATIONS.
11. INSTALL ALL FOOTINGS, PIERS AND FOUNDATION WALLS FOR THE STAIRS AND ELEVATOR AS SHOWN ON THE DRAWINGS.
12. INSTALL NEW COLUMNS AT C/2 AND D/2 TO THE UNDERSIDE OF THE STEEL BEAMS AS SHOWN ON THE DRAWINGS.
13. CUT AND REMOVE PORTION OF STEEL BEAM BEYOND COLUMN D/2 THAT IS WITHIN THE NEW STAIRWELL, AS SHOWN ON THE DRAWINGS.
14. PRIOR TO BACKFILLING THE EXISTING EXTERIOR WALLS, ALL FOUNDATIONS WITHIN ALUMNI HALL SHALL BE BACKFILLED WITH NEWLY COMPACTED SOILS, AND ALL NEW BASEMENT SLABS SHALL BE PLACED AND ALLOWED TO FULLY CURE PER THE PROJECT DOCUMENTS.



FOUNDATION PLAN

1/4"=1'-0"

NOTES:

1. T/FTG EL= 87'-4" U.N.O. BY (X'-XX")
2. C.J. INDICATES CONTRACTION JOINT/CONSTRUCTION JOINT (SEE TYP DETAIL S2.1)
3. SEE ARCH/PLUMBING DWGS FOR FLOOR DRAIN LOCATIONS. G.C. COORD ALL ASSOCIATED SLAB SLOPES.
4. CONDITION OF EXTERIOR SIDE OF EXIST RUBBLE WALL IS BELOW GRADE & UNKNOWN. USE EXTREME CARE WHEN EXCAVATING ADJACENT TO WALL. G.C. SHALL MONITOR EXCAVATION. NOTIFY ENGINEER IF UNSTABLE OR SEVERELY DETERIORATED CONDITIONS ARE FOUND TO BE PRESENT PRIOR TO CONTINUING EXCAVATION.
5. F1, F2 ETC INDICATES REINF CONC PIER (SEE S2.1). T/PIER EL= 87'-8" U.N.O. BY (X'-XX").
6. BP– INDICATES COLUMN BASEPLATE (SEE S3.1)
7. ①, ②, ETC. INDICATES TEMPORARY SHORING PROCEDURE TO BE COMPLETED TO ACHIEVE INSTALLATION OF STAIR AND ELEVATOR WITHIN EXISTING BUILDING (REFER TO NOTES THIS DWG)

FOOTING SCHEDULE		
MARK	SIZE	REINF
F4	1'-0"x4'-0"x4'-0"	(5)#5 E.W.B.

NORTH

65 NEWBURY STREET
PORTLAND, ME 04101
207.761.9000
info@portcityarch.com
WWW.PORTCITYARCH.COM

UNE
UNIVERSITY OF NEW ENGLAND

Allied Engineering

CONSIGLI

BECKER

CONSTRUCTION DOCUMENT SET
-
FOR CONSTRUCTION

REVISIONS

UNIVERSITY OF NEW ENGLAND
PORTLAND, MAINE

ALUMNI HALL RENOVATION

FOUNDATION PLAN

S1.1

Scale: AS NOTED

S.W.COLE ENGINEERING, INC.

Report of Field Density

ASTM D6938

Project: **PORTLAND ME - UNE ALMUNI HALL - CONSTRUCTION MATERIALS TESTING SERVICES** Project Number: **15-0263**

Client: **UNIVERSITY OF NEW ENGLAND**

Field Density Test Results

Test #	Test Date	Tech	Test Location	Elev Feet	Test Depth	Lab ID	Dry Density	Moisture Content Percent	Compaction Percent	Required Compaction
1	11/3/2015	RED	ADDITION SOG, W END OF ANNEX	88	8"	19771G	125.0	4.9	95.2	95

Laboratory Compaction Test Reference

Lab ID	Date Received	Material Source	Material Type	Method	Max Dry Density PCF	Optimum Moisture Content (%)	Comments
19771G	8/14/2015	On Site Material	Structural Fill	ASTM D-1557 Modified C	131.3	7.6	

Elevation Notes:
ELEVATION IS +/-

Comments:

Reviewed By

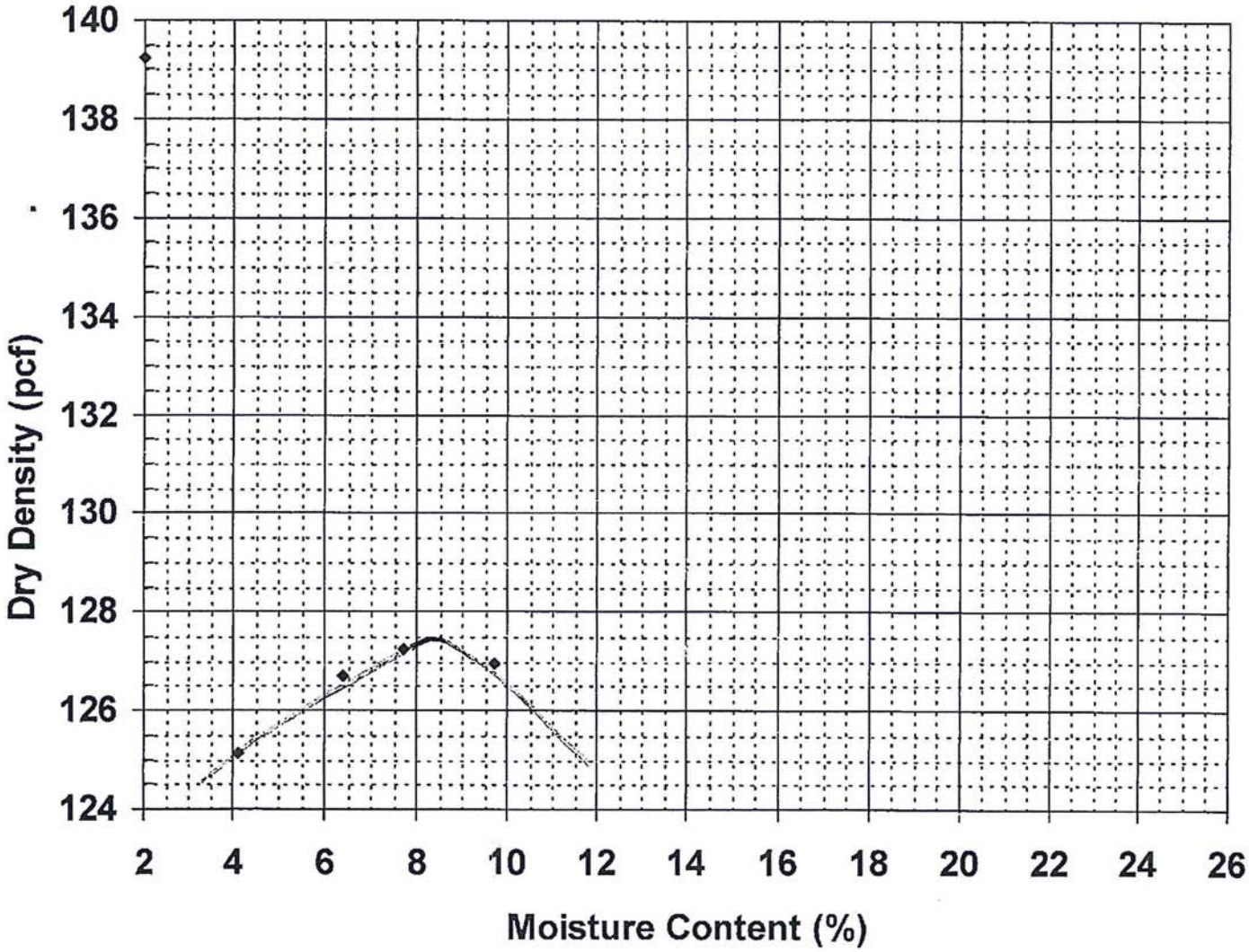
S.W.COLE ENGINEERING, INC.

Report of Moisture-Density

Method ASTM D-1557 MODIFIED Procedure C

Project Name	PORTLAND ME - UNE ALMUNI HALL - CONSTRUCTION MATERIALS TESTING SERVICES	Project Number	15-0263
Client	UNIVERSITY OF NEW ENGLAND	Lab ID	19771G
Material Type	STRUCTURAL FILL	Date Received	8/14/2015
Material Source	ON SITE MATERIAL	Date Completed	8/19/2015
		Tested By	JUSTIN BISSON

Moisture-Density Relationship Curve



Maximum Dry Density (pcf)	127.5
Optimum Moisture Content (%)	8.6
Percent Oversized	15.4%

Corrected Dry Density (pcf)	**131.3**
Corrected Moisture Content (%)	**7.6**

Comments

Roger E. Domingo

286 Portland Road, Gray, ME 04039-9586 • Tel (207) 657-2866 • Fax (207) 657-2840 • www.swcole.com

S.W.COLE ENGINEERING, INC.

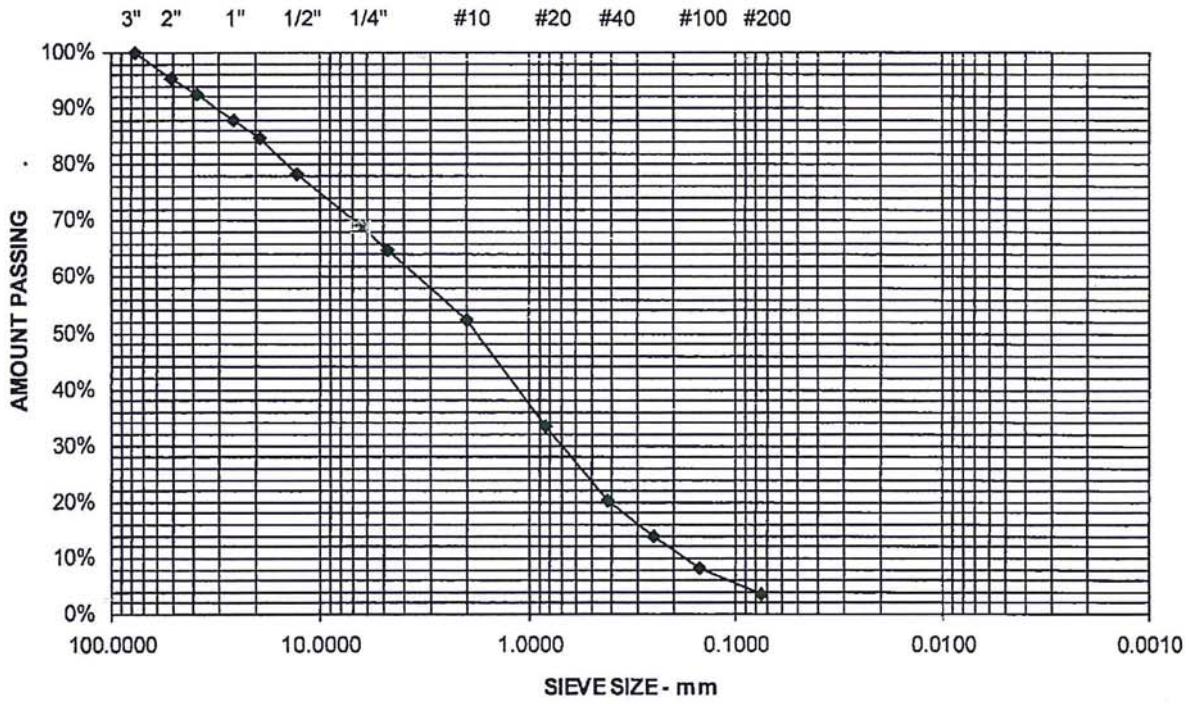
Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - UNE ALMUNI HALL - CONSTRUCTION MATERIALS TESTING SERVICES	Project Number	15-0263
Client	UNIVERSITY OF NEW ENGLAND	Lab ID	19771G
Material Type	STRUCTURAL FILL	Date Received	8/14/2015
Material Source	ON SITE MATERIAL	Date Completed	8/18/2015
		Tested By	JUSTIN BISSON

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	SWCE STRUCTURAL FILL SPECIFICATIONS (%)
150 mm	6"	100	
125 mm	5"	100	
100 mm	4"	100	100
75 mm	3"	100	90 - 100
50 mm	2"	96	
38.1 mm	1-1/2"	92	
25.0 mm	1"	88	
19.0 mm	3/4"	85	
12.5 mm	1/2"	78	
6.3 mm	1/4"	69	25 - 90
4.75 mm	No. 4	65	
2.00 mm	No. 10	52	
850 um	No. 20	33	
425 um	No. 40	20	0 - 30
250 um	No. 60	14	
150 um	No. 100	8	
75 um	No. 200	3.5	0.0 - 5.0

SAMPLE MEETS SPECIFICATION



Comments

Roger E. Domingo

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Project: Alumni Hall Renovation - University of New England
Date Prepared: 5/1/15

Structural Schedule of Special Inspections
CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION IBC Section 1704.4	REQD Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
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	Y
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	Y
5. Verifying use of required design mix	Y	P	ACI 318: Ch 4, 5.2-5.4	TA1	ACI-CFTT or ACI-STT	Y
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	Y
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	Y
8. Inspection for maintenance of specified curing temperature and techniques	Y	P	ACI 318: 5.11-5.13	SI1	PE/SE or EIT	Y
9. Inspection of Prestressed Concrete						
a. Application of prestressing force.	N	C	ACI 318: 18.20		PE/SE or EIT	
b. Grouting of bonded prestressing tendons in seismic force resisting system	N	C	ACI 318: 18.18.4		ACI-CFTT or ACI-STT	
10. Erection of precast concrete members.	N	P	ACI 318: Ch 16		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 beans and structural slabs.	N	P	ACI 318: 6.2		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		PE/SE or EIT	

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.

BECKER
STRUCTURAL ENGINEERS

03300

Project:	UNE Alumni Hall
Location:	Portland, Maine 04103
Becker Job No:	3450

OBSERVATION REPORT
Cast in Place Concrete

Date:	08-21-15
Time:	11:00 A.M.
Temp:	75
Weather:	Rain

Observation Location: The footings were inspected at the west end of chapel.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☐	☐	☐	☒	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☒	☐	☐	☐	Underpinning dowels accepted in lieu of key detailed.
Additional Items	☐	☐	☐	☒	

Notes:
The rebar was approximately 90% complete at the time of inspection, with the stepped footing left to be installed.

Signed: Patrick Horrigan, E.I.

BECKER
STRUCTURAL ENGINEERS

03300

Project:	UNE Alumni Hall
Location:	Portland, Maine 04103
Becker Job No:	3450

OBSERVATION REPORT
Cast in Place Concrete

Date:	09-01-15
Time:	9:00 A.M.
Temp:	75
Weather:	Sunny

Observation Location: In-progress inspection of foundation walls at the west end of chapel.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☒	☐	
Quantity	☒	☐	☒	☐	
Condition	☒	☐	☒	☐	
Placement	☒	☐	☒	☐	
Embed/Anchors	☐	☐	☒	☐	Embedment plates will be inspected at the next visit.
Lap Splices	☒	☐	☒	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☒	

Notes:
We visited the site to review the base of the walls prior to closing forms. The base rebar was approximately 70% complete at the time of inspection, with the walls along the stair left to be installed. No discrepancies were observed. An additional inspection for the top of the wall will be performed prior to placement.

While on site, the shoring at Alumni Hall was also observed. It looked to be in accordane with the documents and was approximately 95% complete, with a first floor post not yet installed and the front entry staging support not yet complete.

Signed: Patrick Horrigan, E.I.

BECKER
STRUCTURAL ENGINEERS

03300

Project:	UNE Alumni Hall
Location:	Portland, Maine 04103
Becker Job No:	3450

OBSERVATION REPORT
Cast in Place Concrete

Date:	09-15-15
Time:	3:00 P.M.
Temp:	75
Weather:	Sunny

Observation Location: Foundation walls at the west end of chapel were inspected.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☒	☐	☒	☐	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☒	

Notes:
The rebar was approximately 95% complete, with one embedment plate left to be installed, as well as the section of footing being poured along the south side of the chapel.

While on site, the following items were discussed in addition to the rebar inspection:

1. The rear foundation wall at Alumni Hall was reviewed. GC indicated concerns over anchoring forms into rubble wall and wanted to pour wall with a horizontal construction joint. Structurally, we would like to avoid a horizontal joint in the wall. It is recommended that other options of forming be explored as pouring the wall in multiple lifts is not recommended. However, no exception in taken to pouring a small footing prior to pouring the concrete wall.

2. A section of the rear foundation wall at Alumni Hall (approximately 4' wide) was observed to be CMU. It is recommended that Hilti HY-70 epoxy be used in place of Hilti Hy-200 epoxy when installing dowels shown in section 5/S2.2.
3. Discussed & reviewed existing soffit condition. GC indicated a preference to install blocking off of the exterior wall top plate tight to the underside of rafters for support. This would allow for the existing soffit beam to be removed and replaced with a single 2x8. No exception is taken to this detail, but any architectural conflicts should be reviewed.
4. Discussed penetrations of wood beam along B line at the first floor framing. The drawings currently show several pipes running through this beam. All parties should consider alternatives to this option as beam penetrations of this size are not recommended.
5. Discussed and visually inspected the rotted bell tower post. GC had opened ceiling and an additional beam was observed to be rotted. BSE will further review condition and provide sketch.

Signed: Patrick Horrigan, E.I.

BECKER
STRUCTURAL ENGINEERS

03300

Project:	UNE Alumni Hall
Location:	Portland, Maine 04103
Becker Job No:	3450

OBSERVATION REPORT
Cast in Place Concrete

Date:	09-21-15
Time:	2:30 P.M.
Temp:	75
Weather:	Sunny

Observation Location: Rear foundation wall at Alumni Hall was inspected as well as two sections of footing along the south and north side of the chapel.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☐	☒	☐	☐	In multiple areas, the rebar was tight against the existing stone foundation. N.S. Giles indicated they would adjust the bar to get proper cover prior to concrete pour.
Embed/Anchors	☐	☐	☐	☒	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☒	

Notes:
The rebar was approximately 80% complete, with the section of footing along the north side of the chapel remaining.

While on site, a framing issue was discussed in addition to the rebar inspection. At Alumni Hall, a section of the wall top plate as well as bottom of several belfry studs were observed to be rotted. As discussed on site, it is recommended that a 2x6 plate be added on top of the existing top plate, tight to the inside face of the belfry studs. The new 2x6 plate running parallel to the existing top plate should run a minimum of 2'-0" past the rotted section. Fasten the new top plate to existing with 5/16"x4" RSS Screws @ 8"O.C. (min). Install Simpson HGA10 clips connecting the 2x6 plate to the inside face of the belfry studs.

Signed: Patrick Horrigan, E.I.

BECKER
STRUCTURAL ENGINEERS

03300

Project:	UNE Alumni Hall
Location:	Portland, Maine 04103
Becker Job No:	3450

OBSERVATION REPORT
Cast in Place Concrete

Date:	10-14-15
Time:	11:30 A.M.
Temp:	65
Weather:	Sunny

Observation Location: The remaining foundation wall along the North side of the Chapel was inspected as well as a section of wall along the south side of the Chapel.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☒	☐	☐	☐	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☒	

Notes:

Signed: Patrick Horrigan, E.I.

BECKER
STRUCTURAL ENGINEERS

03300

Project:	UNE Alumni Hall
Location:	Portland, Maine 04103
Becker Job No:	3450

OBSERVATION REPORT
Cast in Place Concrete

Date:	11-19-15
Time:	12:00 P.M.
Temp:	50
Weather:	Cloudy

Observation Location: Final wall placement at chapel, south side adjacent to existing building.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☒	☐	☐	☐	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☒	

Notes:

Signed: Dan S. Burne, P.E.

BECKER
STRUCTURAL ENGINEERS

03300

Project:	UNE Alumni Hall
Location:	Portland, Maine 04103
Becker Job No:	3450

OBSERVATION REPORT
Cast in Place Concrete

Date:	12-04-15
Time:	12:00-12:45 P.M.
Temp:	45° F
Weather:	Partly Cloudy

Observation Location: Elevator wall reinforcement.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☐	☐	☒	☐	GC to confirm post installed drill and epoxy method for column base plate anchors.
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☒	

Notes:

Signed: Alexander Wheelock, E.I.

S.W.COLE ENGINEERING, INC.

Concrete Construction Observation Report

Project Name/Location:	UNE Alumni Hall Renovation	**Project No:**	15-0263
Client/Client's Rep.:	UNE	**Date:**	10/8//15
Concrete Contractor:	N. S. Giles	**Sheet:**	1 of 1
Placement Location:	Footing: Eastern section of underpinning	**S.W.COLE Rep.:**	VLT
Weather:	Clear 68 degrees	**On Site:**	11:45pm – 1:30pm

Pre Placement Observations	**In Compliance**		**N/O**	**Comments**
Bar size and location (diameter, length, bend and coverage)	Yes ☐	No ☐	☒	By others
Splicing (type, overlap)	Yes ☐	No ☐	☒	
Stability (wiring, chairs, and spacers)	Yes ☐	No ☐	☒	
Reinforcement conditions (cleanliness, temperature etc.)	Yes ☐	No ☐	☒	
Embedments and anchor bolts installed	Yes ☐	No ☐	☒	
Soil subgrade prepared in accordance with project specifications	Yes ☐	No ☐	☒	

Referenced Drawings	**Date**	**Page(s)**	**Rev.**	**ASTM**	**GRADE**
				A 615 ☐	**40** ☐ **50** ☐ **60** ☐
				A 616 ☐ **A 617** ☐	**75** ☐
				A 706 ☐	**A 775 Epoxy** ☐

Concrete Placement Observations	**In Compliance**		**N/O**	**Comments**
Required mix used	Yes ☒	No ☐	☐	3000psi, 3/4"
Concrete properly conveyed to all areas of placement	Yes ☒	No ☐	☐	Conveyor
Internal vibration / consolidation of concrete	Yes ☒	No ☐	☐	Mechanical
Even layering around openings and embedments	Yes ☐	No ☐	☒	
Post placement observations (finishing, curing, etc.)	Yes ☐	No ☐	☒	

Field Testing of Concrete Performed	Yes ☒	No ☐	Loads:	1	Yards:	8.5
***Cylinder Set Number:** 700-7	←**refer to associated concrete test report*					
Non-Conformance Items Observed (person notified)	Yes ☐	No ☒				

Notes:

S.W.COLE arrived to test concrete for sections of underpinning, as scheduled by Consigli. Initial air was tested on the first truck was 7.6%. Mid load air test result was 5.9%. Slump test result was 3". Auburn Concrete added 22oz of Glenium 7500 on site in order to increase slump and workability of concrete at mid load. S.W.COLE spoke to N.S. Giles and Consigli about concrete load being on site beyond 90 minute time frame. The concrete temperature was 68 degrees and load was emptied not long after the 90 minute time frame. Four cylinders were made at mid load.

Attachments: Photos

Reviewed By: RED

S.W.COLE ENGINEERING, INC.

Concrete Construction Observation Report

Project Name/Location:	UNE Alumni Hall Renovation	**Project No:**	15-0263
Client/Client's Rep.:	UNE	**Date:**	12-17-15
Concrete Contractor:	N. S. Giles	**Sheet:**	1 of 1
Placement Location:	Retaining wall Inside old building/ Concrete site wall first floor.	**S.W.COLE Rep.:**	AAB
Weather:	Rainy 50°F	**On Site:**	12:15pm – 1:30pm

Pre Placement Observations	**In Compliance**		**N/O**	**Comments**
Bar size and location (diameter, length, bend and coverage)	Yes ☐	No ☐	☒	
Splicing (type, overlap)	Yes ☐	No ☐	☒	
Stability (wiring, chairs, and spacers)	Yes ☐	No ☐	☒	
Reinforcement conditions (cleanliness, temperature etc.)	Yes ☐	No ☐	☒	
Embedments and anchor bolts installed	Yes ☐	No ☐	☒	
Soil subgrade prepared in accordance with project specifications	Yes ☐	No ☐	☒	

Referenced Drawings	**Date**	**Page(s)**	**Rev.**	**ASTM**	**GRADE**
				A 615 ☐ **A 616** ☐ **A 617** ☐ **A 706** ☐	**40** ☐ **50** ☐ **60** ☐ **75** ☐ **A 775 Epoxy** ☐

Concrete Placement Observations	**In Compliance**		**N/O**	**Comments**
Required mix used	Yes ☒	No ☐	☐	3000psi, 3/4"
Concrete properly conveyed to all areas of placement	Yes ☒	No ☐	☐	Pumped
Internal vibration / consolidation of concrete	Yes ☒	No ☐	☐	Internal Vibration Observed
Even layering around openings and embedments	Yes ☐	No ☐	☒	
Post placement observations (finishing, curing, etc.)	Yes ☐	No ☐	☒	

Field Testing of Concrete Performed	Yes ☒	No ☐	Loads:	2	Yards:	15
***Cylinder Set Number:** 700-15	←**refer to associated concrete test report*					
Non-Conformance Items Observed (person notified)	Yes ☐	No ☒				

Notes:

S.W.COLE requested on-site by Consigli to observe concrete placement. Tests results as follows.

- Mid-load test results: AE = 7.0%, Slump 6 ½", Concrete temperature 68°F.
  - A set of four cylinders were cast for compressive strength testing.

Attachments: None

Reviewed By: RED

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 8/13/2015 **Time Cast:** 1:35 **Date Received:** 8/14/2015

Placement Location: UNDERPINNING @ CORNERS OF LIBRARY

Placement Method: BUCKET

Cylinders Made By: ROGER DOMINGO

Placement Vol. (yd³): 3

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: MASTER AIR AE20
GLENIUM 7500

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 4.5

Air Content (%) (C-231) **Air WR:** 5.5

Air Temp (°F): 77

Conc. Temp (°F) (C-1064): 80

Load Number: 1 **Batch**

Mixer Number: 76

Ticket Number 262611 **Arrive** 1:20

Cubic Yards: 3 **Depart**

Design (psi): **3000**

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)**
700-1A	8.25	4.02	12.67	8/20/2015	Lab	**7**	4	47.8	**3770**
700-1B	8.25	4.03	12.72	9/10/2015	Lab	**28**	4	62.8	**4940**
700-1C	8.25	4.02	12.67	9/10/2015	Lab	**28**	4	57.2	**4510**
700-1D				Hold	Lab				

Fracture Types

1 Cone both ends; 2 Cone one end w/ split; 3 Columnar; 4 Diagonal; 5 Side at top or bottom; 6 Pointed End

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 8/21/2015 **Time Cast:** 2:46 **Date Received:** 8/22/2015

Placement Location: WESTERN THIRD (1/3) OF FOUNDATION FOOTING & SECOND SECTION UNDERPINNING (W SIDE)

Placement Method: BELT TRUCK

Placement Vol. (yd³): 12

Cylinders Made By: RYAN SWEETSER

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) 68.9 **Maximum (°F)** 88.3

DELIVERY INFORMATION

Admixtures: MASTER AIR AE20
MASTER SET R100
MASGLENIUM 7500

TEST RESULTS

Slump (in) (C-143):

Air Content (%) (C-231) **Air WR:** 7.0

Air Temp (°F): 70

Conc. Temp (°F) (C-1064): 81

Load Number: 2

Mixer Number: 83

Ticket Number 262516

Cubic Yards: 6

Design (psi): **3000**

Batch 2:02

Arrive 2:23

Depart 2:51

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)**
700-2A	8.25	4.01	12.65	8/28/2015	Lab	**7**	4	44.2	**3500**
700-2B	8.20	4.01	12.63	9/18/2015	Lab	**28**	4	48.8	**3870**
700-2C	8.20	4.01	12.62	9/18/2015	Lab	**28**	5	48.2	**3820**
700-2D	8.20			Hold	Lab				

Fracture Types

1 Cone both ends; 2 Cone one end w/ split; 3 Columnar; 4 Diagonal; 5 Side at top or bottom; 6 Pointed End

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 9/16/2015 **Time Cast:** 2:00 **Date Received:** 9/17/2015

Placement Location: WALLS WESTERN 1/3 OF FOUNDATION & SOUTH FOOTING

Placement Method: BELT

Cylinders Made By: CHARLES CROMWELL

Placement Vol. (yd³):

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) 64 **Maximum (°F)** 90

DELIVERY INFORMATION

Admixtures: MASTER AIR
MASTER SET
MASTER GLENIUM

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5

Air Content (%) (C-231) **Air WR:** 5.5

Air Temp (°F): 80

Conc. Temp (°F) (C-1064): 84

Load Number: 2

Mixer Number: 144

Ticket Number 266035

Cubic Yards: 10

Design (psi): **3000**

Batch 1:01

Arrive 1:22

Depart 2:00

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)
700-3A	5.30	4.01	12.66	9/23/2015	Lab	**7**	4	41.6	**3290**
700-3B	5.25	4.01	12.61	10/14/2015	Lab	**28**	5	52.4	**4160**
700-3C	5.30	4.00	12.57	10/14/2015	Lab	**28**	5	52.4	**4170**
700-3D	5.30			Hold	Lab				

Fracture Types

1 Cone both ends · 2 Cone one end w/ split · 3 Columnar · 4 Diagonal · 5 Side at top or bottom · 6 Pointed End

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 9/22/2015 **Time Cast:** 9:39

Date Received: 9/23/2015

Placement Location: WALL ON 3
FOOTING: C.8 MID SPAN A MIDSPAN

Placement Method: TELEBELT

Cylinders Made By: CHRISTOPHER HENES

Placement Vol. (yd^3): 18

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: MICRO AIR
R100
GLENIUM

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 3.5

Air Content (%) (C-231) **Air WR:** 3.5

Air Temp (°F): 68

Conc. Temp (°F) (C-1064): 74

Load Number: 1

Mixer Number: 156

Ticket Number 266234

Cubic Yards: 7

Design (psi): **3000**

Batch 8:33

Arrive 8:57

Depart 9:55

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)**
700-4A	8.45	4.00	12.55	9/29/2015	Lab	**7**	5	47.2	**3760**
700-4B	8.40	4.02	12.69	10/20/2015	Lab	**28**	5	59.6	**4700**
700-4C	8.45	4.02	12.67	10/20/2015	Lab	**28**	5	60.8	**4800**
700-4D	8.45			Hold	Lab				

Fracture Types

1 Cone both ends; 2 Cone one end w/ split; 3 Columnar; 4 Diagonal; 5 Side at top or bottom; 6 Pointed End

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 9/28/2015 **Time Cast:** 12:50

Date Received:

Placement Location: 3 SECTIONS OF UNDER PINNING

Placement Method:

Placement Vol. (yd^3):

Cylinders Made By: CHRISTOPHER HENES

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: MICRO AIR
GLENIUM
R100

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 4 3/4

Air Content (%) (C-231) **Air WR:** 4.8

Air Temp (°F): 72

Conc. Temp (°F) (C-1064): 81

Load Number: 1

Mixer Number: 157

Ticket Number 266493

Cubic Yards: 7

Design (psi): **5000**

Batch 12:17

Arrive 12:34

Depart

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)**
700-5A	8.45	3.99	12.49	9/29/2015	Field	**1**	4	47.8	**3830**
700-5B	8.40	3.99	12.51	10/5/2015	Lab	**7**	5	73.2	**5850**
700-5C	8.45	4.00	12.56	10/26/2015	Lab	**28**	5	85.8	**6830**
700-5D	8.40	4.00	12.54	10/26/2015	Lab	**28**	4	80.4	**6410**
700-5E	8.40			Hold	Lab				

Fracture Types

1 Cone both ends; 2 Cone one end w/ split; 3 Columnar; 4 Diagonal; 5 Side at top or bottom; 6 Pointed End

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 10/2/2015 **Time Cast:** 12:34

Date Received:

Placement Location: 2 SECTIONS UNDERPINNING
1 SECTION FOOTING

Placement Method: PUMP

Cylinders Made By: CHARLES CROMWELL

Placement Vol. (yd³):

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures:

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6 1/4

Air Content (%) (C-231) **Air WR:** 7.2

Air Temp (°F): 52

Conc. Temp (°F) (C-1064): 68

Load Number: 1

Mixer Number: 117

Ticket Number 265365

Cubic Yards: 10

Design (psi):

Batch 11:47

Arrive 12:22

Depart

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)
700-6A	8.15	3.99	12.48	10/9/2015	Lab	**7**	4	37.0	**2960**
700-6B	8.15	4.01	12.62	10/30/2015	Lab	**28**	5	49.6	**3930**
700-6C	8.20	4.00	12.58	10/30/2015	Lab	**28**	5	49.4	**3930**
700-6D	8.15	4.01	12.60	11/27/2015	Lab	**56**	5	53.2	**4220**

Fracture Types

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 10/8/2015 **Time Cast:** 1:00 **Date Received:** 10/9/2015

Placement Location: FOOTING: UNDERPINNING BETWEEN NEW ADD-ON & EXISTING BLDG

Placement Method: CONVEYOR

Cylinders Made By: VAN TERRELL, JR.

Placement Vol. (yd^3): 8.5

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: MASTER AIR
MASTER GLENIUM

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 3

Air Content (%) (C-231) **Air WR:** 5.9

Air Temp (°F): 63

Conc. Temp (°F) (C-1064): 68

Load Number: 1

Mixer Number: 144

Ticket Number 265549

Cubic Yards: 8.5

Design (psi): **3000**

Batch 11:24

Arrive 12:02

Depart

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)
700-7A	8.25	4.00	12.54	10/15/2015	Lab	**7**	5	44.2	**3520**
700-7B	8.30	4.01	12.62	11/5/2015	Lab	**28**	4	59.8	**4740**
700-7C	8.30	4.01	12.60	11/5/2015	Lab	**28**	4	57.2	**4540**
700-7D	8.30			Hold	Lab				

Fracture Types

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 10/14/2015 **Time Cast:** 2:05 **Date Received:** 10/15/2015

Placement Location: WALL: N WALL & S WALL PIER: W END OF BLDG
CURB: E SIDE

Placement Method: PUMP

Placement Vol. (yd³): 48

Cylinders Made By: VAN TERRELL, JR.

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: MASGLENIUM
MASTER AIR

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5.5

Air Content (%) (C-231) **Air WR:** 3.9

Air Temp (°F):

Conc. Temp (°F) (C-1064): 70

Load Number: 1

Mixer Number: 95

Ticket Number 265686

Cubic Yards: 10

Design (psi): **3000**

Batch 12:39

Arrive 1:33

Depart 1:50

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)**
700-8A	8.40	4.01	12.64	10/21/2015	Lab	**7**	4	61.0	**4830**
700-8B	8.35	4.02	12.70	11/11/2015	Lab	**28**	4	73.4	**5780**
700-8C	8.40	4.01	12.63	11/11/2015	Lab	**28**	4	74.8	**5920**
700-8D	8.40			Hold	Lab				

Fracture Types

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 11/12/2015 **Time Cast:** 7:30

Date Received: 11/13/2015

Placement Location: BASEMENT SLAB - INTERIOR SLAB

Placement Method: CONVEYOR

Placement Vol. (yd³): 21

Cylinders Made By: AIDAN BOYCE

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: MASTER SET MASGLENIUM

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 4 1/4

Air Content (%) (C-231) **Air WR:** 3.0

Air Temp (°F): 43

Conc. Temp (°F) (C-1064): 65

Load Number: 1

Mixer Number: 156

Ticket Number 289101

Cubic Yards: 10.5

Design (psi): **3000**

Batch 6:27

Arrive 6:55

Depart 7:42

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)
700-9A	8.45	4.01	12.63	11/19/2015	Lab	**7**	4	40.2	**3180**
700-9B	8.40	4.01	12.65	12/10/2015	Lab	**28**	4	53.6	**4240**
700-9C	8.40	4.01	12.63	12/10/2015	Lab	**28**	5	49.8	**3950**
700-9D	8.40			Hold	Lab				

Fracture Types

1 Cone both ends; 2 Cone one end w/ split; 3 Columnar; 4 Diagonal; 5 Side at top or bottom; 6 Pointed End

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 11/17/2015 **Time Cast:** 11:20 **Date Received:** 11/19/2015

Placement Location: FOOTING ALONG LINE A FROM 1 TO 3

Placement Method: CONVEYOR TRUCK

Cylinders Made By: JUSTIN ROUILLARD

Placement Vol. (yd³): 3

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) 31 **Maximum (°F)** 65

DELIVERY INFORMATION

Admixtures: MRWR

TEST RESULTS

Slump (in) (C-143):

Slump WR: 5

Air Content (%) (C-231)

Air WR: 7.4

Air Temp (°F): 42

Conc. Temp (°F) (C-1064): 64

Load Number: 1

Mixer Number: 196

Ticket Number 284945

Cubic Yards: 3

Design (psi): 3500

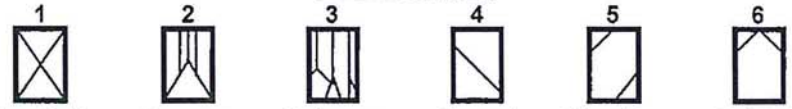
Batch 10:43

Arrive 11:15

Depart 11:30

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)
700-10A	8.15	4.01	12.64	11/24/2015	Lab	**7**	4	41.0	**3240**
700-10B	8.20	4.01	12.63	12/15/2015	Lab	**28**	3	55.2	**4370**
700-10C	8.15	4.01	12.63	12/15/2015	Lab	**28**	4	53.8	**4260**
700-10D	8.15			Hold	Lab				

Fracture Types



1 Cone both ends; 2 Cone one end w/ split; 3 Columnar; 4 Diagonal; 5 Side at top or bottom; 6 Pointed End

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 11/20/2015 **Time Cast:** 1:48

Date Received:

Placement Location: WALL: SE CNR INTERSECTING EXISTING BLDG

Placement Method: CONVEYOR

Placement Vol. (yd³): 10

Cylinders Made By: VAN TERRELL, JR.

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: GLENIUM
MICRO AIR

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 4

Air Content (%) (C-231) **Air WR:** 6.8

Air Temp (°F): 50

Conc. Temp (°F) (C-1064): 70

Load Number: 1

Mixer Number: 118

Ticket Number 285087

Cubic Yards: 6.25

Design (psi): **3000**

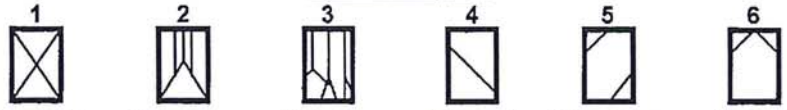
Batch 12:38

Arrive 1:13

Depart 1:47

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)**
700-11A	8.25	4.01	12.61	11/27/2015	Lab	**7**	4	43.6	**3460**
700-11B	8.25	4.02	12.68	12/18/2015	Lab	**28**	5	53.2	**4200**
700-11C	8.20	4.01	12.63	12/18/2015	Lab	**28**	4	56.2	**4450**
700-11D	8.20			Hold	Lab				

Fracture Types



1 Cone both ends
2 Cone one end w/ split
3 Columnar
4 Diagonal
5 Side at top or bottom
6 Pointed End

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 11/25/2015 **Time Cast:**

Date Received:

Placement Location: ELEVATOR PIT

Placement Method: PUMP

Placement Vol. (yd³): 9

Cylinders Made By: SCOTT BONNEAU

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: AE
MRWR

TEST RESULTS

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

Air Content (%) (C-231) 5.8

Air Temp (°F): 39

Conc. Temp (°F) (C-1064): 66

Load Number: 1

Mixer Number: 156

Ticket Number 284656

Cubic Yards: 9

Design (psi): **3000**

Batch 2:45

Arrive 3:05

Depart 4:00

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)**
700-12A	8.25	4.01	12.64	12/2/2015	Lab	**7**	4	36.6	**2900**
700-12B	8.30	4.01	12.65	12/23/2015	Lab	**28**	4	53.6	**4240**
700-12C	8.25	4.01	12.63	12/23/2015	Lab	**28**	5	56.2	**4450**
700-12D	8.25			Hold	Lab				

Fracture Types

1 Cone both ends; 2 Cone one end w/ split; 3 Columnar; 4 Diagonal; 5 Side at top or bottom; 6 Pointed End

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 12/4/2015 **Time Cast:** 1:08

Date Received: 12/7/2015

Placement Location: WALLS: ELEVATOR PAD

Placement Method: PUMP

Placement Vol. (yd³): 10.5

Cylinders Made By: VAN TERRELL, JR.

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) 43 **Maximum (°F)** 55

DELIVERY INFORMATION

Admixtures: MASTER AIR
MASGLENIUM

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5.5

Air Content (%) (C-231) **Air WR:** 6.1

Air Temp (°F): 42

Conc. Temp (°F) (C-1064): 70

Load Number: 1

Mixer Number: 94

Ticket Number 284509

Cubic Yards: 10.5

Design (psi): **3000**

Batch 11:37

Arrive 12:14

Depart 1:38

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)
700-13A	8.25	4.01	12.64	12/11/2015	Lab	**7**	4	35.6	**2820**
700-13B	8.20	4.01	12.65	1/1/2016	Lab	**28**	5	50.4	**3980**
700-13C	8.20	4.00	12.58	1/1/2016	Lab	**28**	4	47.6	**3790**
700-13D	8.20			Hold	Lab				

Fracture Types

1 Cone both ends; 2 Cone one end w/ split; 3 Columnar; 4 Diagonal; 5 Side at top or bottom; 6 Pointed End

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 12/14/2015 **Time Cast:** 1:30 **Date Received:** 12/15/2015

Placement Location: CONC SITE WALL FIRST FLOOR 2 RETAINING WALLS INSIDE OLD BLDG FOOTING IN NEW BLDG AGAINST RUBBLE WALL SE CNR

Placement Method: PUMP

Placement Vol. (yd^3): 13.5

Cylinders Made By: AIDAN BOYCE

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: MASTER AIR GLENIUM

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 3.5

Air Content (%) (C-231) **Air WR:** 5.1

Air Temp (°F): 43

Conc. Temp (°F) (C-1064): 73

Load Number: 1

Mixer Number: 155

Ticket Number 283064

Cubic Yards: 6.75

Design (psi): **3000**

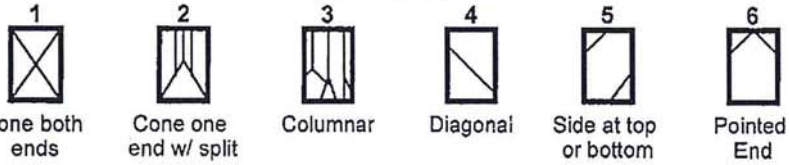
Batch 12:36

Arrive 1:03

Depart 1:35

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)
700-14A	8.30	4.01	12.65	12/21/2015	Lab	**7**	4	41.4	**3270**
700-14B	8.25	4.01	12.60	1/11/2016	Lab	**28**	6	54.8	**4350**
700-14C	8.25	4.01	12.61	1/11/2016	Lab	**28**	5	57.2	**4540**
700-14D	8.30			Hold	Lab				

Fracture Types



Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 12/17/2015 **Time Cast:** 1:10 **Date Received:** 12/18/2015

Placement Location: CONCRETE RETAIN WALL / UNDER BLDG WALLS

Placement Method: PUMP

Cylinders Made By: AIDAN BOYCE

Placement Vol. (yd³): 15

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) 40 **Maximum (°F)** 65

DELIVERY INFORMATION

Admixtures: MASTER AIR
MASTER GLENIUM

TEST RESULTS

Slump (in) (C-143):

Slump WR: 6.5

Air Content (%) (C-231)

Air WR: 7.0

Air Temp (°F): 48

Conc. Temp (°F) (C-1064): 68

Load Number: 1

Mixer Number: 160

Ticket Number 282600

Cubic Yards: 7.5

Design (psi): 3000

Batch 12:18

Arrive 12:45

Depart

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)**
700-15A	8.25	4.01	12.65	12/24/2015	Lab	**7**	5	38.8	**3070**
700-15B	8.30	4.02	12.72	1/14/2016	Lab	**28**	5	44.4	**3490**
700-15C	8.30	4.01	12.60	1/14/2016	Lab	**28**	6	46.8	**3710**
700-15D	8.30			Hold	Lab				

Fracture Types

1 Cone both ends; 2 Cone one end w/ split; 3 Columnar; 4 Diagonal; 5 Side at top or bottom; 6 Pointed End

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 12/23/2015 **Time Cast:** 7:20 **Date Received:**

Placement Location: BASEMENT LEVEL SLAB ON GRADE 1ST FLOOR SLAB ON DECK

Placement Method: PUMP

Placement Vol. (yd^3):

Cylinders Made By: JUSTIN ROUILLARD

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: MRWR
POZZ 1%

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6

Air Content (%) (C-231) **Air WR:** 2.7

Air Temp (°F): 29

Conc. Temp (°F) (C-1064): 64

Load Number: 1

Mixer Number: 94

Ticket Number 282510

Cubic Yards: 10.5

Design (psi): **3000**

Batch 6:41

Arrive 7:10

Depart 7:45

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)
700-16A	8.40	4.02	12.67	12/30/2015	Lab	**7**	4	39.8	**3140**
700-16B	8.35	4.01	12.63	1/20/2016	Lab	**28**	5	49.4	**3910**
700-16C	8.40	4.00	12.57	1/20/2016	Lab	**28**	5	48.6	**3870**
700-16D	8.35			Hold	Lab				

Fracture Types

1 Cone both ends; 2 Cone one end w/ split; 3 Columnar; 4 Diagonal; 5 Side at top or bottom; 6 Pointed End

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 1/8/2016 **Time Cast:** 2:10 **Date Received:** 1/11/2016

Placement Location: T WALL EL 100' 4" CONCRETE SITE WALL/STAIRS REV S1.2

Placement Method: CHUTE

Cylinders Made By: AIDAN BOYCE

Placement Vol. (yd^3): 7

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: MASTER AIR GLENIUM

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 4.5

Air Content (%) (C-231) **Air WR:** 7.0

Air Temp (°F): 36

Conc. Temp (°F) (C-1064): 64

Load Number: 1

Mixer Number: 156

Ticket Number 285324

Cubic Yards: 7

Design (psi): **3000**

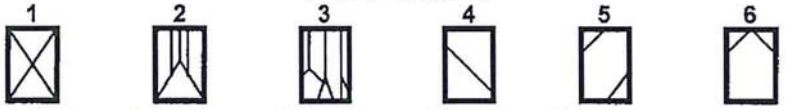
Batch 1:16

Arrive 1:45

Depart

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)**
700-19A	8.15	4.00	12.59	1/15/2016	Lab	**7**	4	38.8	**3080**
700-19B	8.20	4.03	12.75	2/5/2016	Lab	**28**	4	49.4	**3880**
700-19C	8.20	4.01	12.65	2/5/2016	Lab	**28**	4	48.8	**3860**
700-19D	8.20			Hold	Lab				

Fracture Types



1 Cone both ends; 2 Cone one end w/ split; 3 Columnar; 4 Diagonal; 5 Side at top or bottom; 6 Pointed End

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 1/19/2016 **Time Cast:** 12:18 **Date Received:** 1/20/2016

Placement Location: GRADE BEAM: INTERIOR CMU WALL

Placement Method: TAILGATE TO BUCKET

Cylinders Made By: VAN TERRELL, JR.

Placement Vol. (yd³): 3

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: MRWR
MASTER AIR

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6

Air Content (%) (C-231) **Air WR:** 6.8

Air Temp (°F): 18

Conc. Temp (°F) (C-1064): 47

Load Number: 1

Mixer Number: 101

Ticket Number 285468

Cubic Yards: 3

Design (psi): **3000**

Batch 10:56

Arrive 11:33

Depart 12:30

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)**
700-21A	8.00	4.00	12.58	1/26/2016	Lab	**7**	3	28.6	**2270**
700-21B	8.10	4.00	12.58	2/16/2016	Lab	**28**	5	40.0	**3180**
700-21C	8.10	4.01	12.61	2/16/2016	Lab	**28**	5	42.6	**3380**
700-21D	8.05			Hold	Lab				

Fracture Types

1 Cone both ends; 2 Cone one end w/ split; 3 Columnar; 4 Diagonal; 5 Side at top or bottom; 6 Pointed End

Remarks:

AUBURN CONCRETE

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

N.S. GILES FOUNDATIONS, INC.

ATTN: DALE DAGGETT
82 NADINE'S WAY
BANGOR, ME 04401
PH: (207) 942-9445
FX: (207) 945-3163
Email: dale.daggett@nsgiles.com

Mix Design Submittals for:

UNE ALUMNI HALL

716 STEVENS AVE - PORTLAND, MAINE

☐ Reviewed ☒ Furnish as Corrected

☐ Rejected ☐ Revise & 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: 08/04/15 By: PCH

As prepared by:
AUBURN CONCRETE
Remi Delcourt, Quality Control & Sales
P.O. Box 1747 - 82 Goldthwaite Road
Auburn, Maine 04210
Office: (207) 777-7100
Facsimile: (207) 777-7171
E-Mail: remi@auburnconcrete.com

Please confirm that slump is acceptable on the following mix designs.

AUBURN CONCRETE

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

NS GILES FOUNDATIONS

UNE - ALUMNI HALL
716 STEVENS AVENUE - PORTLAND, ME

3000PSI - Air Entrained, ¾" Crushed Stone

Mix Design Submittal (FOUNDATIONS)

7/22/2015

3034SA

		Weight-SSD (lbs)	Volume (Cu.Ft.)	Sources
CEMENT, T I/II	ASTM C-150	517	2.63	DRAGON PRODUCTS COMPANY
COARSE AGG	ASTM C-33: #57/#67	1700	10.28	K & K EXCAVATION
FINE AGGREGATE	ASTM C-33	1330	8.17	PORTLAND SAND & GRAVEL
WATER U.S. GAL/CY:	33.0	275	4.41	PORTLAND WATER DISTRICT
AIR CONTENT (%):		6.0 +/- 1.5%	1.63	
WATER/CEMENT RATIO:		~~0.53~~		
SLUMP (Inches):		5.00 ±1.00"	7.00" ± 1.00" (After Superplasticizer**)	
YIELD:		141.0 PCF	27.1 Cu.Ft.	

OKAY IF ACCOUNTING FOR MIDRANGE WATER REDUCER. LIMIT SLUMP TO 4" MAX OTHERWISE.

*MasterGlenium 7500	ASTM C494, TYPE A,F	3.00 oz/cwt	15.5	US oz/CY	BASF/MASTER BUILDERS
*MasterGlenium 7500 dose is for **MIDRANGE** applications.					
MasterAir AE 200	ASTM C-260	0.2 oz/cwt	1.0	US oz/CY	BASF/MASTER BUILDERS
OPTIONAL:					
MasterSet FP 20	ASTM C-494, Type C,E	10.00 oz/cwt	51.7	US oz/CY	BASF/MASTER BUILDERS
MasterSet R100	ASTM C-494, Type B,D	2.00 oz/cwt	10.3	US oz/CY	BASF/MASTER BUILDERS

*MasterGlenium 7500 meets the requirements of ASTM C494 for Type A (water-reducing) and Type F (high-range water -reducing).
Plant or site addition of 2 - 3 fl.oz./cwt (10.3 - 15.5 fl.oz./cy) will be required to achieve end slump indicated.

MIX IDENTIFICATION #: 3034SA

DESIGN STRENGTH: 3000 PSI @ 28 DAYS

AUBURN CONCRETE

PROJECT:
CONTRACTOR:

W/C: 0.53
MAX. C.A.: 3/4"

2012-06-04
9:05 AM

DATE	PROJECT	ID#	SLUMP	% AIR	TEMPERATURE CONC	TEMPERATURE AIR	7 DAY	28 DAY	MOVING AVG. OF 3
2014-01-13	WASHBURN & DOUGHTY	363-1	5.50	6.0	51	39	3200	3840	
2014-01-31	WASHBURN & DOUGHTY	363-2	5.50	6.4	58	36	2690	3505	
2014-01-31	WASHBURN & DOUGHTY	363-3	6.00	6.6	56	35	2760	3490	3612
2014-04-10	Town & Country Center	77894	5.50	6.0	63	55	3150	4160	3718
2014-0509	LINCOLN ACADEMY	370-1	4.25	6.8	67	60	3130	3970	3873
2014-06-02	MOLNLYCKE	B201-1	4.50	5.7	68	74	2930	3880	4003
2014-06-05	MOLNLYCKE	B201-3	4.50	4.5	65	63	3660	4720	4190
2014-06-10	MOLNLYCKE	B201-4	5.50	5.2	77	75	2990	3870	4157
2014-06-11	MOLNLYCKE	B201-5	4.50	5.5	77	75	3650	4925	4505
2014-06-12	LINCOLN ACADEMY	370-2	5.50	6.8	71	61	3290	3755	4183
2014-06-12	LINCOLN ACADEMY	370-3	5.00	6.6	71	60	3060	3640	4107
2014-06-12	MOLNLYCKE	B201-6	4.50	5.0	72	75	3270	4010	3802
2014-06-16	MOLNLYCKE	B201-7	4.50	5.2	77	76	3350	4040	3897
2014-06-17	MOLNLYCKE	B201-8	3.75	6.6	78	77	3290	4175	4075
2014-06-20	MOLNLYCKE	B201-9	5.50	5.3	75	70	2920	3585	3933
2014-06-24	MOLNLYCKE	B201-10	3.25	4.0	78	72	3590	4450	4070
2014-06-25	MOLNLYCKE	B201-11	4.00	6.1	74	70	3050	3520	3852
2014-06-27	MOLNLYCKE	B201-12	3.75	6.1	81	75	3210	4235	4068
2014-06-30	MOLNLYCKE	B201-13	4.00	5.7	81	88	2890	3440	3732
2014-07-01	MOLNLYCKE	B201-14		8.2	78	65	4500	5040	4238
2014-0-02	MOLNLYCKE	B201-15	4.50	5.8	86	88	4160	4270	4250
2014-07-03	LINCOLN ACADEMY	370-4	4.50	7.4	82	66	3050	3565	4292
2014-07-03	LINCOLN ACADEMY	370-5	6.00	5.8	83	70	3050	4385	4073
2014-07-03	MOLNLYCKE	B201-16	5.00	6.5	84	75	2820	3295	3748
2014-07-07	MOLNLYCKE	B201-17	7.00	2.6	83	81	3080	3690	3790
2014-07-25	CONY FLATIRON APARTMENTS	402-1	5.75	5.8	80	65	3050	3950	3645
2014-08-01	LINCOLN ACADEMY	370-9	3.50	5.2	76	62	3430	3675	3772
2014-08-01	LINCOLN ACADEMY	370-10	4.75	5.5	79	72	3540	4250	3958
2014-08-15	LINCOLN ACADEMY	370-11	5.00	6.4	76	68	2890	3565	3830
2014-08-15	LINCOLN ACADEMY	370-12	3.00	4.5	81	84	3580	4380	4065
2014-08-18	LINCOLN ACADEMY	370-13	4.25	5.2	83	70	2970	3730	3892
2014-09-12	Old Dominion Freight	253627	6.25	5.7	77	68	3300	4105	4072
2014-09-16	Old Dominion Freight	253814	5.00	7.0	64	55	3750	4450	4095
2014-10-27	WELLS HIGHSCHOOL ADDN	246457	3.50	6.1	67	60	3970	4995	4517
2014-11-03	WELLS HIGHSCHOOL ADDN	252899	4.50	5.9	55	50	3960	4625	4690
2014-11-08	WELLS HIGHSCHOOL ADDN	253131	6.00	7.0	55	40	4110	5030	4883
2014-11-10	WELLS HIGHSCHOOL ADDN	253174	4.00	6.2	62	50	3900	4835	4830
2014-12-01	WELLS HIGHSCHOOL ADDN	241953	6.50	5.9	64	50	3110	4005	4623
2014-12-03	WELLS HIGHSCHOOL ADDN	242009	5.50	6.4	56	40	2640	3425	4088
2015-01-07	WELLS HIGHSCHOOL ADDN	236998	4.50	5.0	55	18	3250	4285	3905
2015-01-15	WELLS HIGHSCHOOL ADDN	237079	6.00	4.9	53	30	2920	3605	3772
COUNT:		41	40	41	41	41	41	41	39
RANGE:		LOW	3.00	2.6	51	18	2640	3295	3612
		HIGH	7.00	8.2	86	88	4500	5040	4883
AVERAGE OF ALL:			4.86	5.83	71	63	3295	4058	4072
STANDARD DEVIATION:			0.9	1.0	10.1	16.1	428.7	484	312
COEFFICIENT OF VARIATION:			19.1	16.5	14.2	25.7	13.0	11.9	7.7

ACI 214 SUMMARY:

AVERAGE STRENGTH:	4058 PSI	
AVERAGE STRENGTH BASED ON:	41 TESTS	
STANDARD DEVIATION:	484 PSI	CONTROL IS VERY GOOD
OVERALL COEFFICIENT OF VARIATION:	11.9 %	
WITHIN-TEST STANDARD DEVIATION:	122 PSI	
WITHIN-TEST COEFFICIENT OF VARIATION:	3.0 %	CONTROL IS VERY GOOD
BATCH-TO-BATCH STANDARD DEVIATION:	468 PSI	
RECOMMENDED STRENGTH:	3649 PSI	

AUBURN CONCRETE

AUBURN - 82 Goldthwaite Road
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WEST BATH - 50 Arthur Reno Sr Road
AUGUSTA - 2 Hard Rock Road
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Main Office: P.O. Box 1747 • Auburn, Maine 04210 Phone: (207) 777-7100 • Fax: (207) 777-7171

NS GILES FOUNDATIONS

UNE - ALUMNI HALL
716 STEVENS AVENUE - PORTLAND, ME

3000PSI - Non-Air Entrained, ¾" Crushed Stone
Mix Design Submittal (INT FLOORS)

7/22/2015 **3034SNA**

			Weight-SSD (lbs)	Volume (Cu.Ft.)	Sources
CEMENT, T I/II	ASTM C-150		517	2.63	DRAGON PRODUCTS COMPANY
COARSE AGG	ASTM C-33: #57/#67		1750	10.58	K&K EXCAVATION
FINE AGGREGATE	ASTM C-33		1440	8.84	PORTLAND SAND & GRAVEL
WATER	U.S. GAL/CY:	33.6	280	4.49	PORTLAND WATER DISTRICT
	AIR CONTENT (%):		2.0 +/- 1.5%	0.54	
	WATER/CEMENT RATIO:		0.54		
	SLUMP (Inches):		5.00 ± 1.00"		7.00" ± 1.00" (After Superplasticizer**)
	YIELD:		147.2 PCF	27.1 Cu.Ft.	
MasterGlenium 7500*	ASTM C494, TYPE A,F		3.50 oz/cwt	18.1 US oz/CY	

OKAY IF ACCOUNTING FOR MIDRANGE WATER REDUCER. LIMIT SLUMP TO 4" MAX OTHERWISE.

* MasterGlenium 7500 dose is for **MIDRANGE** applications.

OPTIONAL:					
POLYMESH	ASTM C-1116 TYPE III	1.5 lbs/cy			O'DEA CONCRETE PRODUCTS
MasterSet FP 20	ASTM C-494, Type C,E	10.00 oz/cwt	51.7	fl oz/CY	BASF/MASTER BUILDERS
MasterSet R 100	ASTM C-494, Type B,D	2.00 oz/cwt	10.3	fl oz/CY	BASF/MASTER BUILDERS

**MasterGlenium 7500 meets the requirements of ASTM C494 for Type A (water-reducing) and Type F (high-range water -reducing).
Plant or site addition of 2 - 3 fl.oz./cwt (10.3 - 15.5 fl.oz./cy) will be required to achieve end slump indicated.

MIX IDENTIFICATION #: 3034SNA

DESIGN STRENGTH: 3000 PSI @ 28 DAYS

AUBURN CONCRETE

PROJECT:
CONTRACTOR:

W/C: 0.54
MAX. C.A.: 3/4"

DATE	PROJECT	ID#	SLUMP	% AIR	TEMPERATURE CONC	TEMPERATURE AIR	7 DAY	28 DAY	MOVING AVG. OF 3
1/15/13	MCMAHON SCHOOL	C19	6.00	1.8	74	17	2780	3525	
1/15/13	MCMAHON SCHOOL	C20	6.00	2.6	74	18	2770	3350	
1/15/13	MCMAHON SCHOOL	C21	6.00	1.8	74	18	2800	3500	3458
1/16/13	Berlin City Toyota Etc.	419-9	5.00	2.5	60	34	3800	4550	3800
1/16/13	Berlin City Toyota Etc.	419-10	4.75	2.3	66	36	3440	4320	4123
1/24/13	Berlin City Toyota Etc.	419-11	5.75		75	60	3180	3565	4145
1/25/13	Berlin City Toyota Etc.	419-12	5.75		58	6	3830	4150	4012
2/1/13	Berlin City Toyota Etc.	419-14	6.28	2.1	62	28	3740	4420	4045
2/8/13	Berlin City Toyota Etc.	419-16	4.00	2.0	63	27	3140	4345	4305
2/15/13	Berlin City Toyota Etc.	419-17	5.25	2.6	81	29	3380	4855	4540
3/14/13	MCMAHON SCHOOL	C23	3.00	3.8	59	40	2980	3145	4115
3/18/13	MCMAHON SCHOOL	C24	5.25	2.0	70	16	2790	3720	3907
3/20/13	Avita Stroudwater	416-34	7.00	2.3	61	28	2890	3865	3577
3/20/13	Avita Stroudwater	416-35	5.50	2.3	62	33	3110	4015	3867
3/20/13	Avita Stroudwater	416-36	6.00	2.1	63	34	3000	4070	3983
3/20/13	Avita Stroudwater	416-37	7.00	2.5	66	33	3110	4180	4088
3/25/13	Berlin City Toyota Etc.	419-20	5.00	2.6	67	38	3560	4520	4257
4/1/13	Wentworth School Scarborough	410-52	7.75	2.3	62	40	4710	4650	4450
4/1/13	Wentworth School Scarborough	410-53	5.50	2.0	61	40	3630	4550	4573
4/1/13	Wentworth School Scarborough	410-54	8.00	2.1	59	42	3630	4625	4608
4/1/13	Wentworth School Scarborough	410-55	6.00	1.9	62	50	4250	5135	4770
4/9/2013	Avita Stroudwater	416-38	6.25	2.3	68	43	3390	4335	4698
4/9/13	Avita Stroudwater	416-39	5.75	2.3	68	44	3510	4500	4657
4/9/13	Avita Stroudwater	416-40	5.25	3.0	65	45	3710	4695	4510
4/17/13	Avita Stroudwater	416-41	7.50	2.0	59	45	3190	4310	4502
4/17/13	Avita Stroudwater	416-42	7.75	2.1	62	51	3430	4360	4455
4/17/13	Avita Stroudwater	416-43	7.50	2.0	63	55	3340	4285	4318
4/18/2013	SCARBOROUGH WENTWORTH	410-68	7.00	2.0	58	45	3240	4275	4307
4/18/13	SCARBOROUGH WENTWORTH	410-69	7.25	2.1	63	45	3180	4045	4202
4/18/13	SCARBOROUGH WENTWORTH	410-70	7.50	2.3	64	45	2790	3780	4033
4/22/13	MCMAHON SCHOOL	C25	6.00	2.3	58	60	2540	3390	3738
4/22/13	MCMAHON SCHOOL	C26	5.25	2.3	60	60	2920	3540	3570
4/22/13	MCMAHON SCHOOL	C27	5.75	2.6	59	60	3090	3700	3543
4/30/13	SCARBOROUGH WENTWORTH	410-76	7.50	2.4	60	48	3220	4020	3753
4/30/13	SCARBOROUGH WENTWORTH	410-77	6.75	2.1	62	55	2810	3480	3733
4/30/13	SCARBOROUGH WENTWORTH	410-78	4.75	2.0	66	60	3260	3880	3793
5/30/2013	SCARBOROUGH WENTWORTH	410-89	6.5	3.2	66	65	2800	3420	3593
5/30/2013	SCARBOROUGH WENTWORTH	410-90	6	3.2	68	70	2450	4010	3770
5/30/2013	SCARBOROUGH WENTWORTH	410-91	7	3	69	75	2570	3365	3598
6/5/13	SCARBOROUGH WENTWORTH	410-92	7.00	2.5	63	57	3050	3825	3733
6/29/13	Auburn Cumberland Farms	C10	5.50	2.6	75	76	2760	3995	3728
7/18/13	SCARBOROUGH WENTWORTH	410-93	6.00	2.3	83	80	3060	3970	3930
7/19/13	SCARBOROUGH WENTWORTH	410-94	5.50	2.2	83	85	3060	3790	3918
7/23/13	SCARBOROUGH WENTWORTH	410-95	6.00	2.5	75	70	2790	3595	3785
7/24/13	SCARBOROUGH WENTWORTH	410-96	6.00	2.8	75	80	2760	3310	3565
7/24/13	SCARBOROUGH WENTWORTH	410-97	6.00	2.5	75	80	3140	3855	3587
7/24/13	SCARBOROUGH WENTWORTH	410-98	6.00	2.5	76	80	2460	3325	3497
8/26/13	HYATT PLACE HOTEL	447-60	5.00	3.3	75	70	2970	4230	3803
8/23/13	HYATT PLACE HOTEL	447-61	4.75	3.8	77	75	3110	3730	3762

8/29/13	HYATT PLACE HOTEL	447-62	6.50	3.3	74	63	3330	3840	3933
9/3/13	HYATT PLACE HOTEL	447-63	5.00	3.6	70	67	3110	3725	3765
10/9/13	Black Point Landing	492-18	8.00	1.7	59	45	2950	4020	3862
10/9/13	Black Point Landing	492-19	8.50	1.4	60	49	2830	4045	3930
10/9/13	Black Point Landing	492-20	5.50	1.6	62	56	3330	4255	4107
10/25/13	Black Point Landing	492-25	6.50	2.5	61	38	2960	4105	4135
10/25/13	Black Point Landing	492-26	6.20	2.8	63	43	2580	3650	4003
10/25/13	Black Point Landing	492-27	6.00	2.4	65	46	2780	3725	3827
2/13/14	Saco Fire Station Reuse	539-2	5.00	2.2	52	30	3400	3795	3723
7/14/2014	LINCOLN ACADEMY	370-6	5.75	3.0	76	70	2110	3070	3530
7/14/14	LINCOLN ACADEMY	370-7	6.50	3.5	77	72	2000	3195	3353
7/14/14	LINCOLN ACADEMY	370-8	3.25	3.7	77	74	2560	3810	3358

				61	61	61	61	59
COUNT:	61	61	59					
				52	6	2000	3070	3353
RANGE: LOW		3.00	1.4	83	85	4710	5135	4770
HIGH		8.50	3.8					
				67	50	3099	3956	3970
AVERAGE OF ALL:		6.04	2.5	7.2	18.8	460	448	358
STANDARD DEVIATION:		1.1	0.5	10.8	37.7	14.8	11.3	9.0
COEFFICIENT OF VARIATION:		17.9	22.1					

ACI 214 SUMMARY:

AVERAGE STRENGTH:	3956 PSI	
AVERAGE STRENGTH BASED ON:	61 TESTS	
STANDARD DEVIATION:	448 PSI	CONTROL IS VERY GOOD
OVERALL COEFFICIENT OF VARIATION:	11.3 %	
WITHIN-TEST STANDARD DEVIATION:	131 PSI	
WITHIN-TEST COEFFICIENT OF VARIATION:	3.3 %	CONTROL IS VERY GOOD
BATCH-TO-BATCH STANDARD DEVIATION:	428 PSI	
	3600 PSI	

AUBURN CONCRETE

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

NS GILES FOUNDATIONS

UNE - ALUMNI HALL
716 STEVENS AVENUE - PORTLAND, ME

4500PSI - Air Entrained, ¾" Crushed Stone

Mix Design Submittal (EXTERIOR CONCRETE)

7/22/2015 | **4534SA**

		Weight-SSD (lbs)	Volume (Cu.Ft.)	Sources
CEMENT, T I/II	ASTM C-150	658	3.35	DRAGON PRODUCTS COMPANY
COARSE AGG	ASTM C-33: #57/#67	1800	10.89	K & K EXCAVATION
FINE AGGREGATE	ASTM C-33	1100	6.75	PORTLAND SAND & GRAVEL
WATER U.S. GAL/CY:	33.0	275	4.41	PORTLAND WATER DISTRICT
AIR CONTENT (%):		6.0 +/- 1.5%	1.63	
WATER/CEMENT RATIO:		~~0.42~~		
SLUMP (Inches):		5.00 ± 1.00"		7.00" ± 1.00" (After Superplasticizer**)
YIELD:		141.9 PCF	27.0 Cu.Ft.	

OKAY IF ACCOUNTING FOR MIDRANGE WATER REDUCER. LIMIT SLUMP TO 4" MAX OTHERWISE.

*MASTERGLENIUM 7500	ASTM C494, TYPE A,F	3.00 oz/cwt	19.7	fl oz/CY	BASF/MASTER BUILDERS
*MASTERGLENUM 7500 dosage is for MIDRANGE applications					
MASTERAIR AE 200	ASTM C-260	0.2 oz/cwt	1.3	fl oz/CY	BASF/MASTER BUILDERS
OPTIONAL:					
MASTERSET R 100	ASTM C-494, Type B,D	2.00 oz/cwt	13.2	fl oz/CY	BASF/MASTER BUILDERS
MASTERSET FP 20	ASTM C-494, Type C,E	10.00 oz/cwt	65.8	fl oz/CY	BASF/MASTER BUILDERS

**MASTERGLENIUM 7500 meets the requirements of ASTM C494 for Type A(water-reducing) and Type F(high-range water -reducing).
Plant or site addition of 2 - 3 fl.oz./cwt (13.2 - 19.7 fl.oz./cy) will be required to achieve end slump indicated.

AUBURN CONCRETE

MIX IDENTIFICATION #: 4534SA
DESIGN STRENGTH: 4500 PSI @ 28 DAYS

PROJECT:
CONTRACTOR:

W/C: 0.43
MAX. C.A.: 3/4"

DATE	PROJECT	ID#	SLUMP	% AIR	TEMPERATURE CONC	TEMPERATURE AIR	7 DAY	28 DAY	MOVING AVG. OF 3
3/27/2014	TOWN & COUNTRY CENTER	77837	4.50	5.8	58	33	3240	4630	
3/28/2014	TOWN & COUNTRY CENTER	77853	7.00	6.0	66	50	3790	4845	
4/1/2014	TOWN & COUNTRY CENTER	77861	5.25	6.4	70	47	3930	5055	4843
4/3/2014	TOWN & COUNTRY CENTER	77867	4.50	3.9	70	54	4210	5250	5050
4/15/2014	TOWN & COUNTRY CENTER	77915	5.75	5.8	59	55	4170	6340	5548
4/18/2014	TOWN & COUNTRY CENTER	777937	5.50	5.6	58	45	3770	4790	5460
7/11/2014	BIW Boiler Building	581-1	7.00	6.0	76	76	3830	4640	5257
7/11/2014	BIW Boiler Building	581-2	6.00	5.0	78	79	4150	4940	4790
7/11/2014	BIW Boiler Building	581-3	6.50	6.0	78	79	3850	4525	4702
7/11/2014	BIW Boiler Building	581-4	6.50	5.2	80	80	4400	5070	4845
7/23/2014	BIW Boiler Building	581-5	4.75	4.9	46	87	4290	5105	4900
8/1/2014	BIW OUTFITTING HALL	580-11	7.25	4.7	82	84	3790	5010	5062
8/7/2014	BIW OUTFITTING HALL	580-14	5.75	5.3	81	83	4430	5435	5183
8/8/2014	BIW OUTFITTING HALL	580-15	4.25	5.0	82	83	4620	5390	5278
8/12/2014	BIW OUTFITTING HALL	580-17			84	78	4090	4925	5250
8/15/2014	BIW OUTFITTING HALL	580-19	3.75	3.8	87	77	4920	5830	5382
8/15/2014	BIW Boiler Building	581-6	5.00	4.0	80	75	3900	5080	5278
8/19/2014	BIW OUTFITTING HALL	580-22	5.25	5.9	74	87	3680	5200	5370
8/25/2014	BIW OUTFITTING HALL	580-23	5.00	4.5	68	79	4580	5785	5355
8/25/2014	BIW OUTFITTING HALL	580-24	6.75	4.8	72	70	4820	5755	5580
8/29/2014	BIW OUTFITTING HALL	580-26	5.50	5.9	74	79	4310	5060	5533
9/18/2014	BIW OUTFITTING HALL	580-40	6.50	6.5	75	65	3900	4555	5123
9/19/2014	BIW BLAST & PAINT	582-1	5.75	7.0	70	62	3920	4925	4847
9/26/2014	BIW BLAST & PAINT	582-2	4.75	5.4	77	74	4490	5285	4922
9/26/2014	BIW BLAST & PAINT	582-3	4.00	4.5	80	80	5010	5820	5343
10/4/2014	BIW BLAST & PAINT	582-4	5.00	5.4	73	58	4920	5085	5397
10/7/2014	BIW BLAST & PAINT	582-5	5.00	4.6	73	65	4460	5595	5500
10/8/2014	ME Veterans Home- Augusta	391-39	4.50	7.0	75	62	4170	4865	5182
10/10/2014	ME Veterans Home- Augusta	391-40	5.00	5.8	66	59	4380	5715	5392
10/10/2014	BIW BLAST & PAINT	582-6	6.00	6.0	74	62	4790	5760	5447
10/10/2014	BIW BLAST & PAINT	582-7	5.75	5.8	72	60	4420	5785	5753
10/11/2014	ME Veterans Home- Augusta	391-41	5.00	6.5	67	41	3400	4220	5255
10/14/2014	ME Veterans Home- Augusta	391-42	5.00	6.2	71	68	4540	4845	4950
10/17/2014	BIW BLAST & PAINT	582-10	4.50	5.2	77	65	4650	5525	4863
10/17/2014	BIW BLAST & PAINT	582-9	5.75	4.9	74	63	4870	5610	5327
10/20/2014	BIW BLAST & PAINT	582-11	5.00	5.4	69	54	4260	5600	5578
10/27/2014	BIW BLAST & PAINT	582-13	4.50	5.9	66	58	3810	4900	5370
10/28/2014	BIW BLAST & PAINT	582-14	6.00	6.5	66	54	4540	5070	5190
10/29/2014	BIW Boiler Building	580-76	6.00	6.0	65	54	3660	4775	4915
10/29/2014	BIW Boiler Building	580-77	6.00	6.2	66	52	4180	4700	4848

10/31/2014	BIW BLAST & PAINT	582-15	5.25	6.2	62	52	4300	5245	4907
11/5/2014	BIW BLAST & PAINT	582-16	6.00	7.5	69	63	3560	4615	4853
11/7/2014	BIW BLAST & PAINT	582-17	5.50	6.4	66	46	4200	5635	5165
11/14/2014	BIW BLAST & PAINT	582-21	6.00	6.0	62	45	4900	5685	5312
11/19/2014	BIW BLAST & PAINT	582-22	4.00	5.0	57	35	5790	6780	6033
12/4/2014	BIW OUTFITTING HALL	580-98	6.00	6.8	60	32	3800	4675	5713
12/4/2014	BIW BLAST & PAINT	582-26	6.00	7.0	61	40	3790	4835	5430
2/26/2015	LISBON HIGH GYM	646-4	4.00	5.3	64	17	4200	5100	4870
3/3/2015	LISBON HIGH GYM	646-5	4.50	5.0	60	33	4930	5810	5248
3/9/2015	LISBON HIGH GYM	646-7	5.25	6.5	67	47	4320	4240	5050
COUNT:		50	49	49	50	50	50	50	48
RANGE:		LOW	3.75	3.8	46	17	3240	4220	4702
		HIGH	7.25	7.5	87	87	5790	6780	6033
AVERAGE OF ALL:			5.39	5.7	70	61	4259	5198	5218
STANDARD DEVIATION:			0.8	0.8	8.2	16.6	480	514	290
COEFFICIENT OF VARIATION:			15.6	14.8	11.7	27.2	11.3	9.9	5.6

ACI 214 SUMMARY:

AVERAGE STRENGTH:	5198 PSI
AVERAGE STRENGTH BASED ON:	50 TESTS
STANDARD DEVIATION:	514 PSI
OVERALL COEFFICIENT OF VARIATION:	9.9 %
WITHIN-TEST STANDARD DEVIATION:	131 PSI
WITHIN-TEST COEFFICIENT OF VARIATION:	2.5 %
BATCH-TO-BATCH STANDARD DEVIATION:	497 PSI
RECOMMENDED STRENGTH:	5198 PSI

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

MILL TEST RESULTS
Laboratory at Thomaston, Maine

Date: June, 2015
Cement Type: I / II
Silo Numbers: 20, 24, 25, 27 & 30

CHEMICAL DATA	Percent
Silicon Dioxide	20.4
Aluminum Dioxide	3.3
Ferric Oxide	3.1
Calcium Oxide	62.1
Magnesium Oxide	3.4
Sulphur Trioxide	3.6
Loss on Ignition	1.8
Insoluble Residue	0.4
Tricalcium Silicate	60
Dicalcium Silicate	12
Tricalcium Aluminate	3
Sum of C3S + 4.75*C3A	74
Sum of C4AF + 2*C3A	15
Sodium Oxide	0.3
Potassium Oxide	1.0
Equivalent Alkalies	0.96
Limestone Addition	3.0
$CaCO_3$ in Limestone	93.8

(Chemical Analysis all per ASTM C 114)

Heat of Hydration (cal/g) .. 81
(7 day result Per ASTM C186)

PHYSICAL DATA	
Specific Surface	378
Blaine (sq m /kg) *(Per ASTM C 204)*	
Percent Passing 325 Mesh *(Per ASTM C 430)*	98.2
Compressive Strength (psi) *(Per ASTM C 109)*	
1 day	2260
3 day	4070
7 day	5110
28 day	
Vicat Setting Time *(Per ASTM C 191)*	
Initial (min.)	125
Final (min.)	205
Air Content (%) *(Per ASTM C 185)*	6.8
Autoclave Expansion (%) *(Per ASTM C 151)*	0.04
Expansion in water (%) *(Per ASTM C 1038)*	0.010
Sulfate Resistance (% exp) *(Per ASTM C 452)*	0.026

Certified by:
Jennifer K. Colburn
Jennifer K. Colburn

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 and/or Richard Erickson.
This mill test report is generated for silos produced in the calendar month prior to the date upon this report.

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

MILL TEST RESULTS
Laboratory at Thomaston, Maine

Date: June, 2015
Brand: Dragon Ground Granulated Blast Furnace Slag
Silo Numbers: 23 & 26

Reference Cement Data		Dragon GGBF Slag Data	
Specific Surface, Blaine (sq m /kg)	365	Specific Surface, Blaine (sq m /kg)	728
Alkali Equivalent	0.81	Percent Retained on 325 Mesh	0.5
Compressive Strength (psi of reference portland cement)		Air Content (%)	1.7
7 day	4020	Sulfide Sulfur (S)	0.70
28 day	5020	Sulfate Ion (as SO_3)	0.11
Potential Compound Composition			
C3S (%)	54	Compressive Strength (psi of 50:50 slag and reference portland cement)	
C2S (%)	14	7 day	4473
C3A (%)	6	28 day	6850
C4AF (%)	12	Activity Index	
		7 day	111%
		28 day	136%
		Specific Gravity (g/ml)	2.77
		Autoclave Expansion	0.021

Certified by:

Jennifer K. Colburn

Jennifer K. Colburn

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

AUBURN CONCRETE

LOCATIONS:
AUBURN - 82 Goldthwaite Road
WESTBROOK - 93 Scott Drive
WEST BATH - 50 Arthur Reno Sr Road
AUGUSTA - 2 Hard Rock Road

Main Office: P.O. Box 1747 • Auburn, Maine 04210 Phone: (207) 777-7100 • Fax: (207) 777-7171

NS GILES FOUNDATIONS

UNE - ALUMNI HALL
716 STEVENS AVENUE - PORTLAND, M

☒ Reviewed ☐ Furnish as Corrected
☐ Rejected ☐ Revise & 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: 08/20/15 By: PCH

5000PSI - Air Entrained, ¾" Crushed

Mix Design Submittal

8/12/2015

5034SA

		Weight-SSD (lbs)	Volume (Cu.Ft.)	Sources
CEMENT, T I/II	ASTM C-150	705	3.59	DRAGON PRODUCTS COMPANY
COARSE AGG	ASTM C-33: #57- #67	1780	10.76	K & K EXCAVATION
FINE AGGREGATE	ASTM C-33	1075	6.60	PORTLAND SAND & GRAVEL
WATER U.S. GAL/CY:	33.6	280	4.49	PORTLAND WATER DISTRICT
	AIR CONTENT (%):	6.0 +/- 1.5%	1.63	
	WATER/CEMENT RATIO:	0.40		
	SLUMP (Inches):	4.00 ± 1.00"		7.00" ± 1.00" (After Superplasticizer*)
	YIELD:	141.9 PCF	27.1 Cu.Ft.	

*MASTERGLENIUM 7500	ASTM C494, TYPE A,F	3.50 oz/cwt	24.7	fl oz/CY	BASF/MASTER BUILDERS
MASTERAIR AE 200	ASTM C-260	0.25 oz/cwt	1.8	fl oz/CY	BASF/MASTER BUILDERS
OPTIONAL:					
MASTERSET FP 20	ASTM C-494, Type C,E	10.00 oz/cwt	70.5	fl oz/CY	BASF/MASTER BUILDERS
MASTERSET R 100	ASTM C-494, Type B,D	2.00 oz/cwt	14.1	fl oz/CY	BASF/MASTER BUILDERS

*MASTERGLENIUM 7500 meets the requirements of ASTM C494 for Type A (water-reducing) and Type F (high-range water -reducing). Plant or site addition of 2 - 3 fl.oz./cwt (14.1 - 21.2 fl.oz./cy) will be required to achieve end slump indicated.

MIX IDENTIFICATION #: 5034SA
DESIGN STRENGTH: 5000 PSI @ 28 DAYS

PROJECT:
CONTRACTOR:

W/C: 0.40
MAX. C.A.: 3/4"

DATE	PROJECT	ID#	SLUMP	% AIR	TEMPERATURE CONC	TEMPERATURE AIR	7 DAY	28 DAY	MOVING AVG. OF 3
3/27/2013	HYATT PLACE HOTEL	447-1	6.00	4.6	73	46	6220	7735	
3/27/2013	HYATT PLACE HOTEL	447-2	6.00	4.4	72	45	6260	7670	
3/29/2013	HYATT PLACE HOTEL	447-3	7.00	4.8	65	47	5030	6170	7192
4/1/2013	HYATT PLACE HOTEL	447-4	5.50	5.2	61	44	5980	7700	7180
4/1/2013	HYATT PLACE HOTEL	447-5	6.00	4.0	60	46	5840	7165	7012
4/2/2013	HYATT PLACE HOTEL	447-6	7.00	4.5	55	45	6330	7905	7590
4/2/2013	HYATT PLACE HOTEL	447-7	4.75	4.2	56	42	6620	7905	7658
4/3/2013	HYATT PLACE HOTEL	447-8	3.50	4.0	61	39	6150	7565	7792
4/5/2013	HYATT PLACE HOTEL	447-9	6.25	4.5	68	42	6010	6865	7445
4/5/2013	HYATT PLACE HOTEL	447-10	6.75	4.8	68	56	4760	6500	6977
4/5/2013	HYATT PLACE HOTEL	447-11	5.00	4.3	69	63	5630	6600	6655
4/8/2013	HYATT PLACE HOTEL	447-12	4.25	4.0	56	56	6300	7880	6993
4/9/2013	HYATT PLACE HOTEL	447-13	4.00	3.6	64	54	6820	8140	7540
4/10/2013	HYATT PLACE HOTEL	447-15	6.50	3.3	68	52	6230	6890	7637
4/10/2013	HYATT PLACE HOTEL	447-16	0.75	2.8	70	45	6630	8085	7705
4/11/2013	HYATT PLACE HOTEL	447-17	4.50	5.0	55	49	6290	7935	7637
4/12/2013	HYATT PLACE HOTEL	447-18	4.00	4.8	67	39	5900	7045	7688
4/12/2013	HYATT PLACE HOTEL	447-19	5.00	4.3	65	37	5150	6045	7008
4/12/2013	HYATT PLACE HOTEL	447-20	4.50	4.3	57	35	6440	7160	6750
4/13/2013	HYATT PLACE HOTEL	447-21	0.75	3.8	53	40	6680	7980	7062
4/16/2013	HYATT PLACE HOTEL	447-22	5.25	4.9	60	52	5190	5810	6983
4/16/2013	HYATT PLACE HOTEL	447-23	5.75	4.9	60	52	5030	5950	6580
4/19/2013	HYATT PLACE HOTEL	447-24	5.00	4.3	67	65	4730	5540	5767
4/26/2013	HYATT PLACE HOTEL	447-27	4.75	5.7	66	46	5000	6095	5862
4/30/2013	HYATT PLACE HOTEL	447-28	4.75	3.9	67	67	5680	5945	5860
5/1/2013	HYATT PLACE HOTEL	447-31	4.50	5.3	73	68	4900	5920	5987
5/16/2013	HYATT PLACE HOTEL	447-33	8.00	4.8	67	69	5300	5935	5933
5/16/2013	HYATT PLACE HOTEL	447-34	7.50	5.2	68	69	5140	6000	5952
5/24/2013	HYATT PLACE HOTEL	447-40	5.00	5.6	71	61	5050		
6/10/2013	HYATT PLACE HOTEL	447-42	5.75	5.2	75	68	5320	5960	5965
8/30/2013	Camp Keyes Building 14	328-1	6.50	6.0	75	67	5840	6570	6177
8/30/2013	Camp Keyes Building 14	328-2	7.50	5.6	76	67	6330	6610	6380
8/30/2013	Camp Keyes Building 14	328-3	7.50	5.6	76	67	4800	5890	6357
9/17/2013	Camp Keyes Building 14	328-4	7.00	5.2	75	68	5390	6010	6170
COUNT:			34	34	34		34	33	31
RANGE:		LOW	0.75	2.8	53		4730	5540	5767
		HIGH	8.00	6	76		6820	8140	7792
AVERAGE OF ALL:			5.38	4.6	66		5734	6823	6822
STANDARD DEVIATION:			1.6	0.7	6.6		633	837	666
COEFFICIENT OF VARIATION:			30.3	15.4	10.1		11.0	12.3	9.8

ACI 214 SUMMARY:

AVERAGE STRENGTH:	6823 PSI
AVERAGE STRENGTH BASED ON:	33 TESTS
STANDARD DEVIATION:	837 PSI
OVERALL COEFFICIENT OF VARIATION:	12.3 %
WITHIN-TEST STANDARD DEVIATION:	217 PSI
WITHIN-TEST COEFFICIENT OF VARIATION:	3.2 %
BATCH-TO-BATCH STANDARD DEVIATION:	808 PSI
RECOMMENDED STRENGTH:	6450 PSI

BASF
The Chemical Company

3	03 30 00	Cast-in-Place Concrete
	03 40 00	Precast Concrete
	03 70 00	Mass Concrete
4	04 05 16	Masonry Grouting

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 d
- 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

☒ Reviewed ☐ Furnish as Correc
☐ Rejected ☐ Revise & Resubm
☐ Submit Specific Item

This review is only for general conformance witl 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 c 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 th 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 wit that of all other trades; and for performing all wc in a safe and satisfactory manner.
Becker Structural Engineers. Inc.

Date: 08/04/15 By: PCH

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.

MASTER® BUILDERS SOLUTIONS

BASF
The Chemical Company

3	03 30 00	Cast-in-Place Concrete
	03 40 00	Precast Concrete
	03 70 00	Mass Concrete

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.

MASTER® BUILDERS SOLUTIONS

BASF
The Chemical Company

3	03 30 00	Cast-in-Place Concrete
	03 40 00	Precast Concrete
	03 70 00	Mass Concrete

MasterSet® R 100

Set Retarding Admixture

Formerly Pozzolith 100 XR*

Description

MasterSet R 100 ready-to-use liquid admixture is used for producing more uniform and predictable quality concrete. Placing and finishing requirements are facilitated because this admixture retards setting time. MasterSet R 100 admixture meets ASTM C 494/C 494M requirements for Type B, retarding, and Type D, water-reducing and retarding, admixtures.

Applications

Recommended for use in:

- Prestressed concrete
- Precast concrete
- Reinforced concrete
- Shotcrete
- Lightweight concrete
- Pumped concrete
- 4x4™ Concrete
- Pervious concrete
- Self-consolidating concrete

Features

- Reduced water content required for a given workability
- Retarded setting characteristics
- Controlled retardation – depending on the addition rate
- Full-form deflection can take place (before concrete sets) in extended pours for bridge decks, cantilevers, nonshored structural elements, etc.

Benefits

- Improved workability
- Reduced segregation
- Superior finishing characteristics for flatwork and cast surfaces
- Flexibility in scheduling of placing and finishing operations
- Offsets effects of early stiffening during extended delays between mixing and placing
- Helps eliminate cold joints
- Peak temperature and/or rate of temperature rise in mass concrete lowered thereby reducing thermal cracking
- Increased compressive and flexural strengths

MASTER® BUILDERS SOLUTIONS

BASF
The Chemical Company

3 | 03 30 00 Cast-in-Place Concrete
03 40 00 Precast Concrete

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/yd³ (kg/m³)	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

MASTER® BUILDERS SOLUTIONS

POLYMESH™

POLYMESH SPEC DATA BULLETIN

DESCRIPTION

PolyMesh™ Synthetic (polypropylene) Fiber for Secondary Concrete Reinforcement is a material utilized in ready - mix concrete to control plastic shrinkage and settlement cracking inherent to unreinforced concrete. PolyMesh fibrillated fiber is manufactured from 100% virgin polypropylene containing no reprocessed olefin materials and is designed specifically for use as a secondary concrete reinforcement. Unless otherwise specified, application rate shall be 1.5lbs per cubic yard of concrete (0.1% by volume). PolyMesh fiber complies with National Building Codes and ASTM C-1116 Type 111, 4.1.3.

BENEFITS

- Alternate method of secondary reinforcement to non-structural wire mesh to control shrinkage and settlement cracking in concrete
- Provides multi-dimensional rather than single plane secondary reinforcement
- Always positioned in compliance with codes
- Inhibits plastic shrinkage cracking in concrete
- Increases impact, shatter and abrasion resistance
- Reduces permeability
- Improves durability and fatigue resistance of concrete
- Accepted by National Building Codes as an alternate method of secondary reinforcement

PHYSICAL PROPERTIES

Material:	100% Virgin Polypropylene	Specific Gravity: 0.91
Modulus:	9.58 (4.0kN/mm2)	Tensile Strength: 97 ksi avg
Ignition Point:	1100 F (590 C)	Melting Point: 330 F (165 C)
Chemical Resistance:	Excellent	Alkali Resistance: Excellent
Acid & Salt Resistance:	Excellent	Absorption: Nil
Fiber Length:	½", ¾", 1½", 2"	

APPROVALS

1.) ICC-ES Evaluation Service, Inc.....Report #ESR-1699
2.) Underwriters Laboratories, Inc.....File # R19202
3.) Conforms to the requirements of.....ASTM: C1116-03
4.) Average Residual Strength of 61 PSI in accordance with.....ASTM: C1399

Recommended Dosage Rate

PolyMesh fiber should be added at the dosage rate of 1.5lbs per cubic yard (.9 Kg per cubic meter) of ready-mixed concrete (0.1% by volume) unless otherwise specified. PolyMesh fiber is packaged in pre-measured water-soluble bags, which are added directly to the concrete mix.

Instructions For Use

PolyMesh fiber may be added to the concrete mix at any time before, during or after the batching process. Fiber must be mixed in accordance with ASTM C-94, "Standard Specification for Ready-Mixed Concrete."

Placement And Finishing

Placement and finishing techniques are no different for concrete containing PolyMesh fiber than for plain concrete. It is strongly recommended that no additional mix water be added. Although concrete with PolyMesh fiber may appear to be slightly stiffer than plain concrete, it will not have any negative effect on workability. If required, authorized personnel are available to assist in proper placement and finishing techniques.

Fibrous Concrete Specification

Synthetic fiber for secondary concrete reinforcement shall be 100% virgin polypropylene fibrillated fiber containing no reprocessed olefin materials. The specific gravity of the material shall be 0.91 plus or minus .05. The tensile strength of the material shall be 80 to 100 ksi. Fiber shall be ¾" of an inch in the length unless otherwise specified. Manufacturer must document evidence of compliance with any applicable building codes as well as ASTM C-1116 Type 111, 4.1.3. Unless otherwise specified, synthetic fiber shall be used at a dosage rate of 1.5 lbs per cubic yard (.9 Kg per cubic meter). Fiber shall be introduced into the concrete mix at the batch plant as per manufacturer instructions. A PolyMesh representative will be available for initial concrete placement upon request of the specifier. Synthetic fiber shall be supplied by O'Dea Concrete Products Inc., P.O. Box 658, Glens Falls, NY 12801.

O'DEA
CONCRETE PRODUCTS, INC.
Specialty Materials for Concrete
"Enhancing the World's Greatest Construction Material"

PO Box 658
Glens Falls, NY 12801
Phone (518) 668-9680 Fax (518) 668-9679

Project: Alumni Hall Renovation - University of New England
Date Prepared: 5/1/15

Structural Schedule of Special Inspections
MASONRY CONSTRUCTION – LEVEL 1

VERIFICATION AND INSPECTION IBC Section 1704.5	REQD Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
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	Y
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	Y
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	Y
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	Y
b. Construction of mortar joints.	Y	P	ACI530.1, 3.3B	TA1	ACI-CFTT or ACI-STT	Y
c. Location of reinforcement and connectors.	Y	P	ACI530.1, 3.4, 3.6A	TA1	PE/SE or EIT	Y
d. Prestressing technique.	N	P	ACI530.1, 3.6B		PE/SE or EIT	
e. Grade and size of prestressing tendons and anchorages.	N	P	ACI530.1, 2.4B, 2.4H		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	Y
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	Y
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	TA1	PE/SE or EIT	Y
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	TA1	PE/SE or EIT	Y
f. Application and measurement of prestressing force.	N	C	ACI530.1, 3.6B		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	Y
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	Y
c. Proportions of site-prepared grout and prestressing grout for bonded tendons.	Y	P	ACI530.1, 2.6B	TA1	ACI-CFTT or ACI-STT	Y
d. Construction of mortar joints.	Y	P	ACI530.1, 3.3B	TA1	ACI-CFTT or ACI-STT	Y
7. Grout placement shall be verified to ensure compliance.	Y	C	ACI530.1, 3.5	TA1	ACI-CFTT or ACI-STT	Y
a. Grouting of prestressing bonded tendons.	N	C	ACI530.1, 3.6C		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	Y

BECKER
STRUCTURAL ENGINEERS

04230

OBSERVATION REPORT
CMU

Date:	12-30-15
Time:	8:00 AM
Temp:	20F
Weather:	Snow

Project:	UNE Alumni Hall
Location:	Portland, ME
Becker Job No:	3450.90

Observation Location: Stair shaft approximately 4' above slab

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☐	☐	☐	☒	
Lap Splices	☐	☐	☐	☒	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
CMU Size	☒	☐	☐	☐	
Layout/Fit-up/Plumbness	☒	☐	☐	☐	
Mortar/Grouting Procedure	☒	☐	☐	☐	
Lift Height	☒	☐	☐	☐	
Clean Outs	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	Inspected prior to first bond beam
Additional Items	☐	☐	☐	☐	

Notes:

Signed: Dan S. Burne, P.E.

BECKER
STRUCTURAL ENGINEERS

04230

OBSERVATION REPORT
CMU

Date:	1-20-16
Time:	8:00 AM
Temp:	20F
Weather:	Sun

Project:	UNE Alumni Hall
Location:	Portland, ME
Becker Job No:	3450.90

Observation Location: Stair shaft completed, elevator shaft at 2nd floor.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☐	☐	☒	☐	See below
Embed/Anchors	☐	☐	☐	☒	
Lap Splices	☐	☐	☐	☒	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
CMU Size	☒	☐	☐	☐	
Layout/Fit-up/Plumbness	☒	☐	☐	☐	
Mortar/Grouting Procedure	☒	☐	☐	☐	
Lift Height	☒	☐	☐	☐	
Clean Outs	☐	☐	☐	☒	
Bond Beams	☒	☐	☐	☐	
Additional Items	☐	☐	☐	☐	

Notes:
Rebar placement in process at time of visit. Observed joint reinforcement was not being placed. GC confirmed the foreman had stepped off site and only a couple rows had been omitted. GC notified subcontractor to install joint reinforcement per design.

Signed: Dan S. Burne, P.E.

S.W.COLE ENGINEERING, INC.

Masonry Construction Observation Report

Project Name/Location:	UNE Alumni Hall	**Project No:**	15-0263
Client/Client's Rep.:	Consigli	**Date:**	12-31-15
Masonry Contractor:	MPA	**Sheet:**	1 of 1
Placement Location:	Elevator existing Building	**S.W.COLE Rep.:**	C. Cromwell
Weather:	Cloudy 35°f	**On Site:**	9:30-10:30

Referenced Drawings	Date	Page	Revision	Comments
General Notes	3-19-15	S1.0	Draft	

Masonry Construction	**Observed**		
Proportioning of site-mixed mortar	Yes ☒	No ☐	Type S
Placement of units and construction of mortar joints	Yes ☒	No ☐	Full joint construction
Joint reinforcing (type, spacing, laps)	Yes ☐	No ☐	Inspection by others
Vertical reinforcing (size, spacing, positioners, laps)	Yes ☐	No ☐	Inspection by others
Horizontal reinforcing (size, spacing, positioners, laps)	Yes ☐	No ☐	Inspection by others
Cold-weather / Hot-weather construction (temperature, practices)	Yes ☒	No ☐	Area was tarped in and 55°F
Embedments and anchor bolts	Yes ☐	No ☐	N/A
Installation of flashing and weeps – *material and placement*	Yes ☐	No ☐	N/A

Grout Placement	**Observed**		
Grout space (cleanliness, mortar fins, size/alignment, etc.)	Yes ☐	No ☐	Clean and unobstructed
Lift height (cleanouts if needed)	Yes ☒	No ☐	Low lift
Proportions of site-mixed grout or vendor mix used	Yes ☒	No ☐	See Comments
Placement of grout (*consolidation, reconsolidation)*	Yes ☐	No ☐	Not on site

Field Testing Performed *refer to associated specimen test report*	Mortar ☐	Grout ☒	Prism ☐
SET NO:		700-17	

Notes:

S.W.COLE made a site visit as scheduled by Consigli to form grout specimens for laboratory compressive strength testing. Masons on site informed S.W.COLE that they opted to use Type S mortar rather than grout for constructability purposes. While on site, we observed only a limited amount of masonry construction, but general construction observed appeared to be in accordance with the project requirements.

After reviewing the masonry construction requirements contained in the general notes section of the project documents, we contacted the E.O.R. to inform them that mortar mix was being utilized rather than 2,500-psi grout.

Attachments: Photos

Reviewed By: KBG


TYPE S
MORTAR MIX
TYPE S
MORTAR MIX
TYPE S
MORTAR MIX


TYPE S
MORTAR MIX

S.W.COLE ENGINEERING, INC.

Masonry Construction Observation Report

Project Name/Location:	UNE Alumni Hall	**Project No:**	15-0263
Client/Client's Rep.:	Consigli	**Date:**	1-7-16
Masonry Contractor:	MPA	**Sheet:**	1 of 1
Placement Location:	Elevator existing Building at 8'-0"	**S.W.COLE Rep.:**	C. Cromwell
Weather:	Cloudy 35°f	**On Site:**	8:30-10:00

Referenced Drawings	Date	Page	Revision	Comments
General Notes	3-19-15	S1.0	Draft	

Masonry Construction	**Observed**		
Proportioning of site-mixed mortar	Yes ☒	No ☐	Type S
Placement of units and construction of mortar joints	Yes ☒	No ☐	Full joint construction
Joint reinforcing (type, spacing, laps)	Yes ☐	No ☐	Inspection by others
Vertical reinforcing (size, spacing, positioners, laps)	Yes ☐	No ☐	Inspection by others
Horizontal reinforcing (size, spacing, positioners, laps)	Yes ☐	No ☐	Inspection by others
Cold-weather / Hot-weather construction (temperature, practices)	Yes ☒	No ☐	Area was tarped in and 50°F
Embedments and anchor bolts	Yes ☐	No ☐	N/A
Installation of flashing and weeps – *material and placement*	Yes ☐	No ☐	N/A

Grout Placement	**Observed**		
Grout space (cleanliness, mortar fins, size/alignment, etc.)	Yes ☐	No ☐	Clean and unobstructed
Lift height (cleanouts if needed)	Yes ☒	No ☐	Low lift
Proportions of site-mixed grout or vendor mix used	Yes ☒	No ☐	See Comments
Placement of grout (*consolidation, reconsolidation)*	Yes ☐	No ☐	Not on site

Field Testing Performed *refer to associated specimen test report*	Mortar ☐	Grout ☒	Prism ☐
SET NO:		700-18	

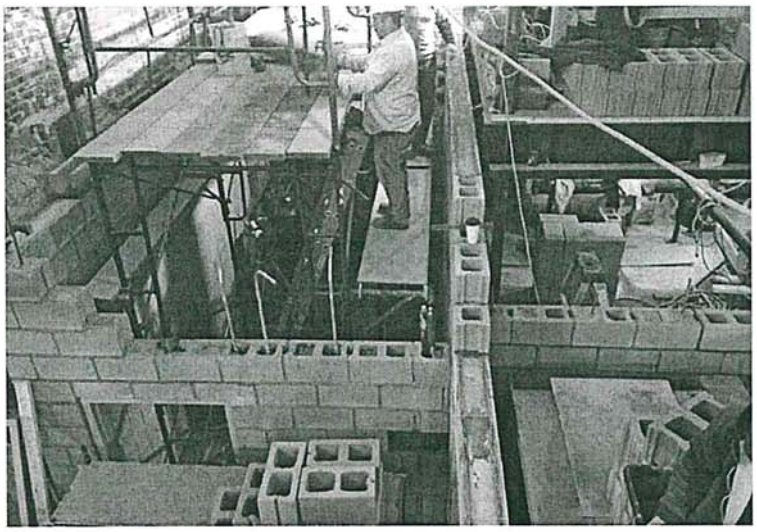
Notes:

S.W.COLE made a site visit as scheduled by Consigli to form grout specimens for laboratory compressive strength testing. Masons on site were using type I/II Portland cement 90 lbs bags mixed with half a bag of lime and sand. While on site, we observed only a limited amount of masonry construction, but general construction observed appeared to be in accordance with the project requirements.

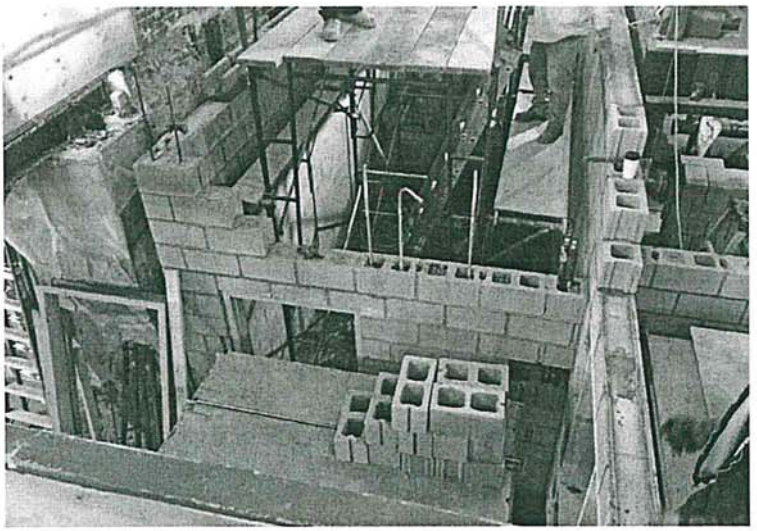
Attachments: Photos

Reviewed By: RED


PORTLAND CEMENT
TYPE I/II




TYPE S
MORTAR



S.W.COLE ENGINEERING, INC.

Masonry Construction Observation Report

Project Name/Location:	UNE Alumni Hall	**Project No:**	15-0263
Client/Client's Rep.:	Consigli	**Date:**	1-18-16
Masonry Contractor:	MPA	**Sheet:**	1 of 1
Placement Location:	Elevator existing Building 4' below 2nd Floor	**S.W.COLE Rep.:**	V.Terrell
Weather:	Cloudy/Snow 27°f	**On Site:**	12pm to 1pm

Referenced Drawings	Date	Page	Revision	Comments
General Notes	3-19-15	S1.0	Draft	

Masonry Construction	**Observed**		
Proportioning of site-mixed mortar	Yes ☒	No ☐	Type S
Placement of units and construction of mortar joints	Yes ☒	No ☐	Full joint construction
Joint reinforcing (type, spacing, laps)	Yes ☐	No ☐	Inspection by others
Vertical reinforcing (size, spacing, positioners, laps)	Yes ☐	No ☐	Inspection by others
Horizontal reinforcing (size, spacing, positioners, laps)	Yes ☐	No ☐	Inspection by others
Cold-weather / Hot-weather construction (temperature, practices)	Yes ☒	No ☐	Area was tarped in and 45°F
Embedments and anchor bolts	Yes ☐	No ☐	N/A
Installation of flashing and weeps – *material and placement*	Yes ☐	No ☐	N/A

Grout Placement	**Observed**		
Grout space (cleanliness, mortar fins, size/alignment, etc.)	Yes ☐	No ☐	Clean and unobstructed
Lift height (cleanouts if needed)	Yes ☒	No ☐	Low lift
Proportions of site-mixed grout or vendor mix used	Yes ☒	No ☐	See Comments
Placement of grout (*consolidation, reconsolidation)*	Yes ☐	No ☐	Not on site

Field Testing Performed *refer to associated specimen test report*	Mortar ☐	Grout ☒	Prism ☐
SET NO:		700-20	

Notes:

S.W.COLE made a site visit as scheduled by Consigli to form grout specimens for laboratory compressive strength testing. Masons on site were using type I/II Portland cement 90 lbs bags mixed with half a bag of lime and sand. While on site, we observed only a limited amount of masonry construction, but general construction observed appeared to be in accordance with the project requirements.

Attachments: None

Reviewed By: RED

S.W.COLE ENGINEERING, INC.

Report of Grout Specimen Compressive Strength

ASTM C1019

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Supplier: ON-SITE

PLACEMENT INFORMATION

Date Cast: 12/31/2015 **Time Cast:** 10:05

Date Received: 1/4/2016

Placement Location: ELEVATOR, EXISTING BLDG

Placement Method: HAND/BUCKET

Specimen Made By: CHARLES CROMWELL

Placement Vol. (yd³):

Aggregate Size (in): FINE

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures:

TEST RESULTS

Slump (in) (C-143):

Air Temp (°F): 34

Grout Temp (°F) (C-1064): 62

Batch Number: 1

Mixer Number:

Ticket Number:

Design (psi): 2500

Specimen Designation	Area(In)²	Date Of Test	Age (days)	Load (kips)	Strength (psi)
700-17A	10.88	1/7/2016	7	21.6	1980
700-17B	10.54	1/28/2016	28	34.4	3260
700-17C	11.22	1/28/2016	28	36.5	3250
700-17D					

Remarks: TYPE S MORTAR PLACED

S.W.COLE ENGINEERING, INC.

Report of Grout Specimen Compressive Strength

ASTM C1019

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client: University of New England

Client Contract Number:

General Contractor:

Supplier: ON-SITE

PLACEMENT INFORMATION

Date Cast: 1/7/2016 **Time Cast:** 8:30

Date Received: 1/8/2016

Placement Location: ELEVATOR AT 8' 0"

Placement Method: HAND

Specimen Made By: CHARLES CROMWELL

Placement Vol. (yd³):

Aggregate Size (in): FINE

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: LIME

TEST RESULTS

Slump (in) (C-143):

Air Temp (°F): 35

Grout Temp (°F) (C-1064): 55

Batch Number: 1

Mixer Number:

Ticket Number:

Design (psi): **2500**

Specimen Designation	Area(In)²	Date Of Test	Age (days)	Load (kips)	Strength (psi)
700-18A	11.37	1/14/2016	**7**	47.6	**4190**
700-18B	10.56	2/4/2016	**28**	57.8	**5470**
700-18C	10.56	2/4/2016	**28**	54.1	**5120**
700-18D					

Remarks:

S.W.COLE ENGINEERING, INC.

Report of Grout Specimen Compressive Strength

ASTM C1019

Project Name: Portland ME - UNE Almuni Hall - Construction Materials Testing Services

Project Number: 15-0263

Client Contract Number:

Client: University of New England

General Contractor:

Supplier: ON-SITE

PLACEMENT INFORMATION

Date Cast: 1/18/2016 **Time Cast:** 12:35

Date Received:

Placement Location: ELEVATOR: 4 BELOW 2ND FLOOR

Placement Method: HAND

Specimen Made By: VAN TERRELL, JR.

Placement Vol. (yd³):

Aggregate Size (in): SAND

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) **Maximum (°F)**

DELIVERY INFORMATION

Admixtures: LIME

TEST RESULTS

Slump (in) (C-143):

Air Temp (°F): 27

Grout Temp (°F) (C-1064): 45

Batch Number: 1

Mixer Number:

Ticket Number:

Design (psi): **2500**

Specimen Designation	Area(In)²	Date Of Test	Age (days)	Load (kips)	Strength (psi)
700-20A	11.12	1/25/2016	**7**	31.4	**2820**
700-20B	11.06	2/15/2016	**28**	38.8	**3510**
700-20C	11.13	2/15/2016	**28**	37.4	**3360**
700-20D					

Remarks:

Project: Alumni Hall Renovation - University of New England
Date Prepared: 5/1/15

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	Y
b. Manufacturer's certificate of compliance required.	Y	S		SI1	PE/SE or EIT	Y
2. Inspection of high-strength bolting						
a. Snug-tight joints.	Y	P		TA1	AWS/AISC-SSI	Y
b. Pretensioned and slip-critical joints using turn-of-nut with matchmaking, twist-off bolt or direct tension indicator methods of installation.	N	P	AISC LRFD Section M2.5 IBC Sect 1704.3.3		AWS/AISC-SSI	
c. Pretensioned and slip-critical joints using turn-of-nut without matchmaking or calibrated wrench methods of installation.	N	C			AWS/AISC-SSI	
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	Y
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	Y
c. Manufacturer's certified test reports.	Y	S		SI1	PE/SE or EIT	Y
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	Y
b. Manufacturer's certificate of compliance required.	Y	S		SI1	PE/SE or EIT	Y
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	Y
6. Inspection of welding (IBC 1704.3.1):						
a. Structural steel and cold-formed deck:						
1) Complete and partial joint penetration groove welds.	N	C	AWS D1.1		AWS-CWI	
2) Multipass fillet welds.	N	C			AWS-CWI	
3) Single-pass fillet welds> 5/16"	N	C			AWS-CWI	
4) Plug and slot welds	N	C			AWS-CWI	
5) Single-pass fillet welds≤ 5/16"	Y	P		TA1	AWS-CWI	Y
6) Floor and deck welds.	Y	P	AWS D1.3	TA1	AWS-CWI	Y
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		AWS-CWI	
3) Shear reinforcement.	N	C			AWS-CWI	
4) Other reinforcing steel.	N	P			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	Y
b. Member locations.	Y	P		SI1	PE/SE or EIT	Y
c. Application of joint details at each connection.	Y	P		SI1	PE/SE or EIT	Y

Project: Alumni Hall Renovation - University of New England
Date Prepared: 5/1/15

Structural Schedule of Special Inspection Services

FABRICATION AND IMPLEMENTATION PROCEDURES – STRUCTURAL STEEL

VERIFICATION AND INSPECTION IBC Section 1704.2	REQD Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
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	Y- AISC
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	Y

BECKER
STRUCTURAL ENGINEERS

05120

OBSERVATION REPORT

Structural Steel

Date:	12/8/15
Time:	9:00 AM
Temp:	36 F
Weather:	Cloudy

Project:	UNE Alumni Hall
Location:	Portland, ME
Becker Job No:	3450.90

Observation Location:
Steel installed at original building and chapel floor

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Bolt Condition	☒	☐	☐	☐	To be confirmed by steel inspector
Weld Condition	☒	☐	☐	☐	To be confirmed by weld inspector
Anchor Bolts, Nuts, & Washers	☒	☐	☐	☐	
Grout/Leveling Plates	☒	☐	☐	☐	
Fit Up/Plumbness	☒	☐	☐	☐	
Metal Deck Welds	☐	☐	☒	☐	Metal deck installation not yet complete
Pour Stops	☐	☐	☐	☒	
Bracing	☐	☐	☐	☒	
Additional Items	☐	☐	☒	☐	Shear studs not yet installed
Additional Items	☐	☐	☐	☐	

Notes:

Signed: Dan S. Burne, P.E.

WHITE ENGINEERING, LLC **P.O. Box 878 Glen, N.H. 03838**
nealjwhite@gmail.com **Tel. 603-383-9347 Fax. 603-383-8262**

Client: S.W. Cole Engineering, Inc. **Report:** 001
Project: UNE Alumni Hall
SWC Project #: 15-0263
Date: December 22, 2015
Subject: Structural Steel Site Inspection

As requested a site visit was made on this date to perform a structural steel inspection. Upon arrival we met with the superintendent. The erector was no longer on site. Inspection was performed at first floor framing using approved shop drawings as follows:

- Welder certifications were previously provided and found acceptable.
- Beam to embed welds were visually inspected.
- Bolted connections were inspected for correct installation and snug tight condition.
- Deck was inspected for proper installation, side lap fastening and welding.
- Shear studs were visually inspected, counted and "ring tested".
- Framing was inspected for overall conformance to drawings.

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

1. Four (4) shear studs were rejected for lack of fusion.
2. Clips were welded to embeds with full top returns where 5/8" was specified. Per the EOR this may be considered acceptable.
3. The new steel framing the opening in the concrete wall was approximately 18" too short at each end. Sections of angle had been spliced on to support the deck. The EOR should review.

The contractor and EOR were advised of our observations.

Additionally, we inspected the new first and second floor structural steel framing installed for support of existing wood framing. Due to the advanced stage of construction most of the connections could not be inspected. For those items which remained visible no discrepancies were apparent.

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

WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD

Welder or Welding Operator's Name: Paul Berry
Identification No.: 006-62-9462 Qualification Date: 10/29/08
Welder's Social Security No.: 006-62-9462

In Accordance with WPS No.: AA-SM-Spotweld-518-45 Pitch 6022 Revision:
Welding Process(es): SMAW Type: Manual (Automatic, manual, etc.)

Mode of Transfer for GMAW: N/A (Short circuiting, spray, globular)

VARIABLE	ACTUAL VARIABLE USED IN QUAL.	QUALIFICATION RANGE
JOINT		
Joint Type	Arc Spot Weld	Arc Spot Weld
Backing Material Type		
Groove Welded From: one side or both sides		
BASE METAL (4.7.1.1)		
Material Specification		
Sheet Steel	ASTM A606 to ASTM 653	ASTM A606 to ASTM 653
Supporting Steel	A36	ASTM A36
Sheet Thickness (4.7.2)		
Groove		
Fillet		
Arc Plug		
Arc Spot	18 gauge	18 gauge
Arc Seam		
COATING(S)		
Type	Galvanized	Galvanize or Bare metal
Thickness	Single coat ≤ .004 Thick	Single coat ≤ .004 Thick
POSITION (4.7.1.5 and 4.7.1.6)		
Groove		
Fillet		
Arc Plug		
Arc Spot	45 Degree Position	45 Degree Position
Arc Seam		
Progression		
GAS (4.7.1.4)		
ELECTRODE (4.7.1.3 and 4.7.1.4)		
Size	1/8"	1/8" to 5/32"
Group Designation	F1 (E6022)	F1

VISUAL EXAMINATION RESULTS (4.6)

Specimen 1: Acceptable Specimen 2: Acceptable
Appearance: Acceptable Cracks: None Undercut: None excessive
Reinforcement: 1/32" Diam of Arc Spot Nugget: #1: 5/8" #2: 5/8

Test Conducted By: James Read Per: AWS D1.3-98
Laboratory Test No.: Date of Test: 10/31/08

The undersigned certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of 4.6 of AWS D1.3 (98 (year)), *Structural Welding Code—Sheet Steel.*

Company: American Aerial Services Authorized By:

WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD

Welder or Welding Operator's Name: Paul Berry
Identification No.: 006-62-9462 Qualification Date: 10/29/08
Welder's Social Security No.: 006-62-9462

In Accordance with WPS No.: AWS D1.3-98 Revision:
Welding Process(es): SMAW Type: Manual (Automatic, manual, etc.)

Mode of Transfer for GMAW: N/A (Short circuiting, spray, globular)

VARIABLE	ACTUAL VARIABLE USED IN QUAL.	QUALIFICATION RANGE
JOINT		
Joint Type	Arc Spot Weld	Arc Spot Weld
Backing Material Type		
Groove Welded From: one side or both sides		
BASE METAL (4.7.1.1)		
Material Specification		
Sheet Steel	ASTM A606 to ASTM 653	ASTM A606 to ASTM A653
Supporting Steel	ASTM A36	ASTM A36
Sheet Thickness (4.7.2)		
Groove		
Fillet		
Arc Plug		
Arc Spot	18 gauge	18 gauge
Arc Seam		
COATING(S)		
Type	Galvanized	Galvanized or Bare Metal
Thickness	Single coat ≤ .004" Thick	Single coat ≤ .004" Thick
POSITION (4.7.1.5 and 4.7.1.6)		
Groove		
Fillet		
Arc Plug		
Arc Spot	F	F
Arc Seam		
Progression		
GAS (4.7.1.4)		
ELECTRODE (4.7.1.3 and 4.7.1.4)		
Size	1/8"	1/8" to 5/32"
Group Designation	F1 (E6022)	F1 (E6022)

VISUAL EXAMINATION RESULTS (4.6)

Specimen 1: Acceptable Specimen 2: Acceptable
Appearance: Uniform Cracks: None Undercut: None excessive
Reinforcement: 1/32" Diam of Arc Spot Nugget: 3/8"

Test Conducted By: James Reed Per: AWS D1.3-98
Laboratory Test No.: Date of Test: 10/31/08

The undersigned certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of 4.6 of AWS D1.3 (98 (year)), *Structural Welding Code—Sheet Steel.*

Company: American Aerial Services Authorized By:

WELDER PERFORMANCE QUALIFICATION (WPQ)

AWS D1.1 Structural Welding Code - Steel (Prequalified)

Welder's Name **Paul Berry** ID Number **9462**

Company **American Aerial**

TEST DESCRIPTION

WPS Number **AA - 001** Test Coupon **XXX** Production Weld _____

Material Specification, Type or Grade **A36** to Material Specification, Type or Grade **A36**

test coupon consisted of two pieces of 1"x 3"x 5" plate with both plates beveled 22.5 degrees along the 5" side

TESTING CONDITIONS AND QUALIFICATION LIMITS

Welding Variables	Actual Values	Range Qualified
Welding Process(es)	SMAW	SMAW
Type (Manual, Semi, Auto)	Manual	Manual
Backing	A36 1/4 x 1-1/2"	backing required
Plate XXX Pipe _____	1.0" thickness	1/8" - unlimited
	All fillet sizes qualified on all metal thicknesses	
AWS Electrode Classification	E7018 (F4 electrode qualifies for F1 - F4 electrodes)	
AWS Electrode Specification	A5.1	
Deposit Thickness for each process		
Process 1: SMAW 3 layers minimum Yes XXX No _____	1/8" - unlimited	
Process 2 _____ 3 layers minimum Yes _____ No _____		
Position	3G and 4G	All positions
Vertical Progression (up or down)		
Current / Polarity	DC Positive	

RESULTS

Visual Examination of Completed Weld **Passed 5/16/11**

Bend Tests **Passed 3G and 4G 5/16/11**

- 3G Bend 1 **Passed, no openings**
- 3G Bend 2 **Passed, no openings**
- 4G Bend 1 **Passed, no openings**
- 4G Bend 2 **Passed, one opening < 1/32"**

Welding and Testing Supervised by: **Warren G. Swan, Jr** Company **New England School of Metalwork**

We 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 the **2010** American Welding Society D1.1 Stuctural Welding Code.

Warren G. Swan, Jr.
Welding Director, NESM
AWS CWI Number: 04050361
Date **5/17/11**

Warren G Swan, Jr.
CWI 04050361
QC1 EXP. 5/1/2013

Manufacturer **American Aerial**

By: _____ Date: 5/18/11

American Aerial Services

RECORD OF WELDER QUALIFICATION TEST (WPQ)
Refer to AWS D1.3 Structural Welding Code-Sheet Steel

Welder Name: Britting, William G. Jr. Identification #: [redacted]-2997

WPS No.: AA-SM-Spotweld- S18- Flat Revision: 0 Date: 10/29/08

The above welder is qualified for the following ranges:

Variable	Used in Qualification	Qualification
PROCESS	SMAW	SMAW
PROCESS TYPE	Manual	Manual
JOINT		
Joint type	Single Thickness Arc Spot Weld	Single Thickness Arc Spot Weld
Backing Material Type	A36 plate	Pre-qualified per AWS D1.1
BASE METAL (4.7.1.1)		
Material Specification		
Sheet Steel	18 gage sheet steel	18 gage sheet steel
Supporting Steel	A36 plate	Pre-qualified per AWS D1.1
Sheet Thickness (4.7.2.1)		
Arc Spot	18 gage (.0478")	18 gage (.0478")
COATING(S)		
Type	Galvanized	Galvanized or Bare metal
Thickness	Single coat ≤ .004" thick	Single coat ≤ .004" thick
POSITION (4.7.1.5 and 4.7.1.6)		
Arc Spot	Flat	Flat
ELECTRODE (4.7.1.3 and 4.7.1.4)		
Size	1/8"	1/8"
Group Designation	F1 (E6022)	F1

VISUAL EXAMINATION RESULTS (4.6)

Specimen #1: Acceptable Specimen #2: Acceptable

Appearance: Acceptable Cracks: None Undercut: None

Reinforcement: 1/32" Diameter of Arc Spot Nugget: #1: 3/4", #2: 1/2"

Welding Tests Conducted By: American Aerial Services

Mechanical Tests conducted by: Thomas E. Giles, CWI #: 88070281, Welding Test Center / EMCC, Bangor, ME,

Test date: 10/30/08

The undersigned certifies that the statements in this record are correct and that the test welds were prepared, welded and tested in accordance with the requirements of 4.6 AWS D1.3, Structural Welding Code-Sheet Steel.

Organization: American Aerial Services

Signed: [signature] Date: 10/31/08

Deck-2

Welder Performance Qualification Record
AWS D1.1 Structural Welding Code - Steel

Welder's Name **Bill Britting** ID Number _____

Company **American Aerial**

TEST DESCRIPTION

WPS Number **AA - 001** Test Coupon **XXX** Production Weld _____

Material Specification, Type or Grade **A36 >3/4"** to Material Specification, Type or Grade **A36 > 3/4"**

Test Thickness **1" Groove**

Thickness Qualified Plate **Groove: 1/8" - Unlimited** **Fillets: Unlimited**

Thickness Qualified Pipe

Groove 1/8 - unlimited on pipe equal to or greater than 24" diameter

Fillets: Unlimited

TESTING CONDITIONS AND QUALIFICATION LIMITS

Welding Variables	Actual Values	Range Qualified
Welding Process(es)	SMAW	SMAW
Type (Manual, Semi, Auto)	Manual	Manual
Backing	A36 1/4" x 1-1/2"	Backing required
Material Group Number	Two	Group One and Group Two
Filler Metal AWS Specifications	A5.1	
Filler Metal Classification	E7018 MR	
Filler Metal F Numbers	F4	F1, F2, F3, F4
Position	3G and 4G	All Positions
Vertical Progression (up or down)	Up	Up Only
Inert Gas Backing		
Transfer Mode (GMAW)		
Current / Polarity	115 - 120 amps DC+	

RESULTS

Visual Examination of Completed Weld **Passed** Date **12/18/07**

Bend Test Results: Side Bend **Passed** Side Bend **Passed** Date **12/18/07**

Test conducted by:

Warren G. Swan, Jr. New England School of Metalwork

We certify that the statements in this record are correct and that the test welds were prepared and welded in conformance with the **2006 AWS D1.1** welding code and the above noted Welding Procedure Specification.

Name: **Warren G. Swan, Jr.**

Affiliation **New England School of Metalwork**

Address **7 Albiston Way Auburn, ME 04210**

WARREN SWAN
CWI 04050561
QC1 EXP. 5/01/10

Warren G Swan

WELDER PERFORMANCE QUALIFICATION (WPQ)

AWS D1.1 Structural Welding Code - Steel (Prequalified)

Welder's Name **William Britting** ID Number **2997**

Company **American Aerial**

TEST DESCRIPTION

WPS Number **AA - 002** Test Coupon **XXX** Production Weld _____

Material Specification, Type or Grade **A36** to Material Specification, Type or Grade **A36**

test coupon consisted of two pieces of 1"x 3"x 5" plate with both plates beveled 22.5 degrees along the 5" side

TESTING CONDITIONS AND QUALIFICATION LIMITS

Welding Variables	Actual Values	Range Qualified
Welding Process(es)	FCAW	FCAW
Type (Manual, Semi, Auto)	Semi	Semi
Backing	A36 1/4 x 1-1/2"	backing required
Plate XXX Pipe _____	1.0" thickness	1/8" - unlimited
	All fillet sizes qualified on all metal thicknesses	
AWS Electrode Classification	E71T - 8	
AWS Electrode Specification	A5.20	
Deposit Thickness for each process		
Process 1: FCAW 3 layers minimum Yes XXX No _____	1/8" - unlimited	
Process 2 _____ 3 layers minimum Yes _____ No _____		
Position 1G	Flat only	
Vertical Progression (up or down)	_____	_____
Current / Polarity	DC Negative	DC Negative

RESULTS

Visual Examination of Completed Weld **Passed 12/7/10**

Bend Tests **Passed 1G 12/7/10**

1G Bend 1 **Passed, no openings** 3G Bend 2 **Passed, one opening < 1/32"**

Welding and Testing Supervised by: **Warren G. Swan, Jr** Company **New England School of Metalwork**

We 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 the American Bureau of Shipping.

Warren G. Swan, Jr.
Welding Director, NESM
AWS CWI Number: 04050361
Date **12/7/10**

Warren G Swan, Jr.
CWI 04050361
QC1 EXP. 5/1/2013

Manufacturer **American Aerial**

By: _____ Date: _____

WELDER PERFORMANCE QUALIFICATION (WPQ)

AWS D1.1 Structural Welding Code - Steel (Prequalified)

Welder's Name William Belting ID Number 2997

Company American Aerial

TEST DESCRIPTION

WPS Number AA - 002 Test Coupon XXX Production Weld

Material Specification, Type or Grade A36 to Material Specification, Type or Grade A36

test coupon consisted of two pieces of 1"x 3"x 8" plate with both plates beveled 22.5 degrees along the 8" side

TESTING CONDITIONS AND QUALIFICATION LIMITS

Welding Variables	Actual Values	Range Qualified
Welding Process(es)	FCAW	FCAW
Type (Manual, Semi, Auto)	Semi	Semi
Backing	A36 1/4 x 1-1/2"	backing required
Plate XXX Pipe	1.0" thickness	1/8" - unlimited
	All fillet sizes qualified on all metal thicknesses	
AWS Electrode Classification	E71T-8	
AWS Electrode Specification	A5.20	
Deposit Thickness for each process		
Process 1: FCAW 3 layers minimum Yes XXX No	1/8" - unlimited	
Process 2 3 layers minimum Yes No		
Position 1G	Flat only	
Vertical Progression (up or down)		
Current / Polarity	DC Negative	DC Negative

RESULTS

Visual Examination of Completed Weld Passed 12/7/10

Bend Tests Passed 1G 12/7/10

1G Bend 1 Passed, no openings 3G Bend 2 Passed, one opening < 1/32"

Welding and Testing Supervised by: Warren G. Swan, Jr Company New England School of Metalwork

We 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 the American Bureau of Shipping.

Warren G. Swan, Jr.
Welding Director, NESM
AWS CWI Number: 04050361
Date 12/7/10

Warren G Swan, Jr.
CWI 04050361
QC1 EXP. 8/1/2013

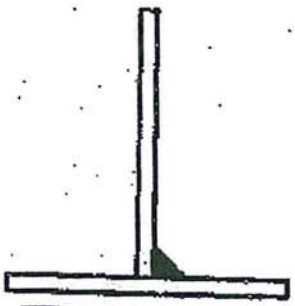
Manufacturer American Aerial

By: Date:

WELDING PROCEDURE SPECIFICATIONS (WPS)
AWS D1.3 Structural Welding Code - Sheet Steel

Company Name American Aerial Services Date 5/7/12
WPS Number AA - 003 Supporting PQR Number(s) AA - 03
Revision Number ____ Date of Revision ____
Welding Processes(es) FCAW Types (Manual, Auto, Semi-Auto) Semi-auto

JOINTS
Joint Design Fillet Weld in T Joint Sheet to Sheet
Backing Yes ___ No XX Backing Material ____
Back Gouging Yes ___ No XX Method ____



T Joint Sheet to Sheet
12 gauge material

BASE METALS
Material Group: One Thickness Fillet 12 gauge Groove ____
Material Specification, A653/A653M to Material Specification, Type or Grade A653/A653M
Other Coupons consisted of two 3" x 4"pieces of 12 gauge material set at 90 degrees to each other. Two complete setups were required per position.

FILLER METALS

Specification Number	AWS A 5.20	
AWS. Classification Number	E71T - GS	
F Number		
Size of Filler Metal	0.030" diameter	

POSITIONS
Position of Fillet 2F (horizontal), 3F (vertical), and 4F (overhead) Qualified: All positions

Welding Progression : Up Vertical Up Down ____

GAS	Gas(es)	%Mixture	Flow Rate
Shielding			
Trailing			
Backing			

WELDING PROCEDURE SPECIFICATIONS (WPS)
AWS D1.3 Structural Welding Code - Sheet Steel

WPS Number AA - 003

PREHEAT

Preheat Temperature Ambient Interpass Temperature

Other

POSTWELD HEAT TREATMENT

Temperature Range Time Range

ELECTRICAL CHARACTERISTICS

Current DC Polarity Negative Amps 100 - 105 Volts 19 - 19.5

Tungsten Size and Type

Metal transfer for GMAW

Electrode Wire Speed Range 180 ipm

TECHNIQUE

Stringer or Weave Stringer

Gas Nozzle Size

Initial Cleaning Interpass Cleaning

Method of Back Gouging

Oscillation

Contact Tip or Nozzle to Work distance 1/4"

Multiple or Single Pass per Side: Weld Side Single Pass Other Side

Multiple or Single Electrodes Single

Travel Speed 6 - 8" per minute

Peening

Other

Weld Layers	Process	Filler Metal Class	Filler Metal Diameter	Current and Polarity	Amp Range	Volt Range	Travel Speed Range	Other
1	FCAW	E71T - GS	0.030"	DC -	100 - 105	19 - 19.5	6 - 8" per min	

PREPARED BY

Name: Warren G. Swan, Jr.

Affiliation New England School of Metalwork

Address 7 Albiston Way Auburn, ME 04210

Warren G Swan, Jr.
CWI 04080381
QC1 EXP. 5/1/2013

Company Representative

Date

PROCEDURE QUALIFICATION RECORD (PQR)
AWS D1.3 Structural Welding Code - Sheet Steel

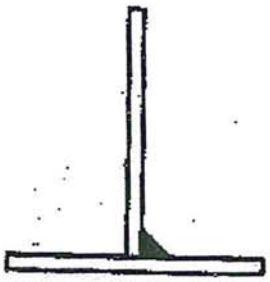
Company Name American Aerial Services Date 5/7/12

Procedure Qualification Record AA-03 Welding Procedure Specification AA - 003

Welding Process(es) FCAW

Types (Manual, Automatic, Semi-Auto) Semi - Auto

JOINT DESIGN



T Joint Sheet to Sheet
12 gauge material

BASE METALS

Material Specification A653/A653M to Material Specification A653/A653M

Thickness of Test Coupon 12 gauge

Other Coupons consisted of two 3" x 4" pieces of 12 gauge material set at 90 degrees to each other. Two complete setups were required per position.

FILLER METALS

AWS Specification A5.20 AWS Classification E71T - GS

Filler Metal Size 0.030" Weld Thickness

Other Required weld size equal to or greater than the sheet steel thickness

POSITION

Position of Fillet 2F, 3F, and 4F Progression (Uphill or Downhill) Vertical Uphill

Other All positions 1F (flat), 2F (horizontal), 3F (vertical), and 4F (overhead)

GAS	Gas(es)	Mixture	Flow Rate
Shielding			
Trailing			
Backing (Purge)			

ELECTRICAL CHARACTERISTICS

Current DC Polarity Negative Amps 100 - 105 Volts 19 - 19.5

Tungsten Electrode Size

Other

TECHNIQUE

Travel Speed 6 - 8" per minute Stringer or Weave Stringer Oscillation

Single or Multipass Single Single or Multiple Electrodes Single

Other

PROCEDURE QUALIFICATION RECORD (PQR)
AWS D1.3 Structural Welding Code - Sheet Steel

PQR Number AA - 03

VISIBLE INSPECTION	Pass	XXX	Fail		Date 5/7/12
BREAK TEST RESULTS	Pass	XXX	Fail		Date 5/7/12
1F Flat					
Specimen 1	Pass		Fail		
Specimen 2	Pass		Fail		
2F Horizontal					
Specimen 1	Pass	XXX	Fail		
Specimen 2	Pass	XXX	Fail		
3F Vertical (down)					
Specimen 1	Pass	XXX	Fail		
Specimen 2	Pass	XXX	Fail		
4F Overhead					
Specimen 1	Pass	XXX	Fail		
Specimen 2	Pass	XXX	Fail		

Welder's Name Bill Britting Stamp or Number 2997

Tests conducted by: Warren G. Swan, Jr. CWI Number 04050361

Test Location New England School of Metalwork

7 Albiston Way, Auburn, ME 04210; (207)-753-1360

We 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 the 2008 edition of the AWS D1.3 Structural Welding Code-Sheet Steel.

Warren G. Swan, Jr.
Welding Director, NESM
AWS CWI Number: 04050361
Signature: Warren G. Swan
Date 3/7/12

CWI Stamp

Warren G Swan, Jr.
CWI 04050361
QC1 EXP. 5/1/2013

Welder Performance Qualification Record
AWS D1.3 Structural Welding Code -Sheet Steel

Welder's Name Bill Britting ID Number 2997

Company American Aerial Services

TEST DESCRIPTION

WPS Number AA - 003 Test Coupon XXX Production Weld

Material Specification, Type or Grade A653/A653M to Material Specification, Type or Grade A653/A653M

Test Thickness 12 gauge

Thickness Qualified Sheet Steel 12 gauge and thicker as allowed by D1.3

Coupons consisted of two 3" x 4"pieces of 12 gauge material set at 90 degrees to each other. Two complete setups were required per position.

TESTING CONDITIONS AND QUALIFICATION LIMITS

Welding Variables	Actual Values	Range Qualified
Welding Process(es)	FCAW	FCAW
Type (Manual, Semi, Auto)	Semi	Semi
Backing		
Material Group Number	One	Group One steels permitted by D1.3
Filler Metal AWS Specifications	A5.20	
Filler Metal Classification	E 71T-GS	
Filler Metal F Numbers		
Position	3G and 4G	All Positions
Vertical Progression (up or down)	Up	Up only
Inert Gas Shielding or Backing		
Transfer Mode (GMAW)		
Current / Polarity	100 - 105 amps DC-	

RESULTS

Visual Examination of Completed Welds Passed Date 5/7/12

Vertical Break Test Results: Specimen 1 Passed Specimen 2. Passed

Overhead Break Test Results: Specimen 1 Passed Specimen 2 Passed

Date 5/7/12

Test conducted by:

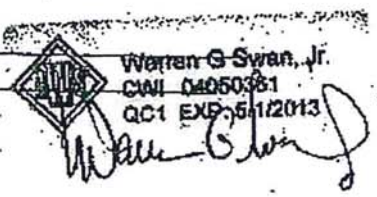
Warren G. Swan, Jr. New England School of Metalwork

We certify that the statements in this record are correct and that the test welds were prepared and welded in conformance with the 2008 AWS D1.3 welding code and the above noted Welding Procedure Specification.

Name: Warren G. Swan, Jr.

Affiliation New England School of Metalwork

Address 7 Albiston Way Auburn, ME 04210



Welder Performance Qualification
AWS D1.1 Structural Code - Steel

Welder's Name William Britting ID Number 2997

Company American Aerial

TEST DESCRIPTION

WPS Number AA-04 Test Coupon XXX Production Weld _____

Material Specification A36 Group 1 to Material Specification A36 Group 1

Test coupon: one piece of 3/8"x 6"x 12" welded perpendicular (T joint) to one piece of 1/2"x 6" x 12"

Test Thickness 3/8" x 1/2" T Joint Test Pipe Size _____

Welding Process(es) FCAW Type (Manual, Semi, Auto) Semi-Auto

Backing _____

Filler Metal Classification/Size E71T-11/ 0.045 Filler Metal AWS Specifications A5.20

Position 2F Horizontal, 3F Vertical, and 4F Overhead Current / Polarity DC-

Inert Gas Shielding or Backing _____ Transfer Mode (GMAW) _____

Vertical Progression (up or down) Up

TESTING RESULTS

Visual Examination of Completed Welds Passed Date 2/25/15

2F Horizontal Test Results: Passed, see Mechanical Test Report WC-14-2248

3F Vertical Test Results Passed, see Mechanical Test Report WC-14-2248

4F Overhead Test Results Passed, see Mechanical Test Report WC-14-2248

Testing Coordinated By: Warren G. Swan, Jr., New England School of Metalwork

Destructive Testing Completed By: Bangor Test Center 354 Hogan Rd Bangor ME 04401 (207) 974-4662

QUALIFICATION LIMITS

Process Qualified FCAW

Backing N.A.

Position Qualified All Positions fillets on plate, pipe, and box tubing

Thickness Qualified Plate 1/8" to 1/2" (AWS D1.1 Table 3.1)

Thickness Qualified Pipe 1/8" to 1/2" (AWS D1.1 Table 3.1)

Pipe Diameter Qualified All

Vertical Progression Qualified Up Only

Other: Certified on Fillet Welds Only

We certify that the statements in this record are correct and that the test welds were prepared and welded in conformance with the 2010 AWS D1.1 welding code and the above noted Welding Procedure Specification.

Name: Warren G. Swan, Jr.

Affiliation New England School of Metalwork

Address 7 Albiston Way Auburn, ME 04210

Date 3/10/15

Warren G Swan Jr
CWI 04050361
QC1 EXP. 5/1/2016

WELDING PROCEDURE SPECIFICATIONS (WPS)
AWS D1.1 Structural Welding Code - Steel

Company Name **American Aerial** Date **2/25/15**

WPS Number **AA - 04** Supporting PQR Number(s) **AA - 004**

Revision Number _____ Date of Revision _____

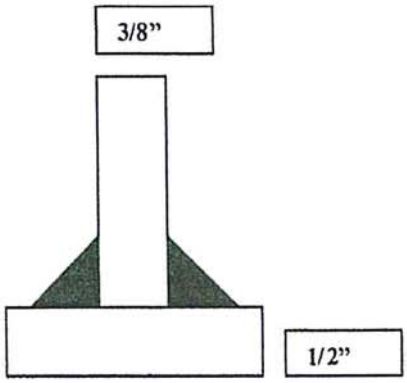
Welding Processes(es) **FCAW** Types (Manual, Auto, Semi-Auto) **Semi - Auto**

JOINTS

Joint Design **T Joint**

Backing Yes ___ No **XX** Backing Material _____

Back Gouging Yes ___ No ___ Method _____



BASE METALS

Material Group: **One** Thickness Groove _____ Fillet **1/2"** Pipe(Dia) _____

Material Specification, Type or Grade **A36** to Material Specification, Type or Grade **A36**

Other _____

FILLER METALS

Specification Number	**AWS A 5.20**	
AWS Classification Number	**E71T-11**	
F Number	**F6**	
Size of Filler Metal	**0.045" diameter**	

POSITIONS

Position of Groove **All Positions**

Vertical Welding Progression : Up **XXXX** Down _____

GAS	Gas(es)	%Mixture	Flow Rate
Shielding			
Trailing			
Backing			

WELDING PROCEDURE SPECIFICATIONS (WPS)
AWS D1.1 Structural Welding Code - Steel

WPS Number AA - 04

PREHEAT

Preheat Temperature **if below 32 dgrees must preheat to minimum of 70 degrees**

Interpass Temperature **Minimum 32 degrees F**

POSTWELD HEAT TREATMENT

Temperature Range **N.A.** Time Range **N.A.**

ELECTRICAL CHARACTERISTICS

Current **DC** Polarity **Negative** Amps **140 - 160 +/- 10%**

Volts **17.5-18 volts +/- 7%**

Tungsten Size and Type

Metal transfer for GMAW

Electrode Wire Speed Range **136 i.p.m. + 10%**

TECHNIQUE

Stringer or Weave **Stringer**

Gas Nozzle Size

Initial Cleaning **Grinding/Brushing** Interpass Cleaning **Chipping/Grinding/Brushing**

Method of Back Gouging

Oscillation

Contact Tip or Nozzle to Work distance (FCAW) **3/8" - 1/2"**

Multiple or Single Pass per Side: Weld Side **Single-Pass** Other Side **Multi-Pass**

Multiple or Single Electrodes **Single**

Travel Speed **5 - 6 " per minute +/- 25%**

Peening

Other

Weld Passes	Process	Filler Metal Class	Filler Metal Diameter	Current and Polarity	Amp Range	Volt Range	Travel Speed Range	Wire Speed
1 - 4	FCAW	E71T-11	0.045"	DC -	140-160 +/- 10%	17.5-18 +/- 7%	5- 6 ipm +/- 25%	136 ipm + 10%

PREPARED BY

Name: **Warren G. Swan, Jr.**

Affiliation **New England School of Metalwork**

Address **7 Albiston Way Auburn, ME 04210**

Warren G Swan Jr
CWI 04050361
QC1 EXP. 5/1/2016

Company Representative Date

PROCEDURE QUALIFICATION RECORD (PQR)
AWS D1.1 STRUCTURAL STEEL CODE

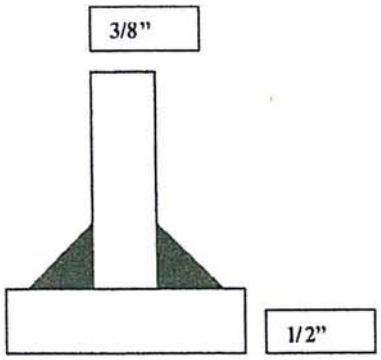
Company Name American Aerial Date 3/10/15

Procedure Qualification Record AA - 004 Welding Procedure Specification AA - 04

Welding Process(es) FCAW

Types (Manual, Automatic, Semi-Auto) Semi - Auto

JOINT DESIGN



T joint Fillet Weld

BASE METALS

Material Specification A36 to Material Specification A36

Thickness of Test Coupon 3/8" x 1/2" Diameter of Test Coupon

Other Test coupon: one piece of 3/8"x 6"x 12" welded perpendicular (T joint) to one piece of 1/2"x 6" x 12"

FILLER METALS

AWS Specification A5.20 AWS Classification E71T-11

Filler Metal Size 0.045 Weld Thickness 1/2"

Other

POSITION

Position of Weld 2G Horizontal, 3GVertical, and 4G Overhead Progression (Uphill or Downhill) 3G Uphill

Other

GAS	Gas(es)	Mixture	Flow Rate
Shielding			
Trailing			
Backing (Purge)			

ELECTRICAL CHARACTERISTICS

Current DC Polarity Negative Amps 140 - 160 Volts 17.5 - 18

Tungsten Electrode Size

Other

TECHNIQUE

Travel Speed 5"-6" per minute Stringer or Weave Stringer Oscillation

Single or Multipass Weld Side Single Other Side Multi - Pass

Single or Multiple Electrodes Single

PROCEDURE QUALIFICATION RECORD (PQR)
AWS D1.1 STRUCTURAL STEEL CODE

PQR Number AA - 004

TENSILE TESTS Pass _____ Fail _____

See attached Mechanical Test Report for tensile test information. Lab Test Number _____

GUIDED BEND TESTS Pass _____ Fail _____

See attached Mechanical Test Report for guided bend test information. Lab Test Number _____

TOUGHNESS TESTS (if required) Pass _____ Fail _____

See attached Mechanical Test Report for toughness test information. Lab Test Number _____

FILLET WELD TEST

Visual Result - Satisfactory: Yes XXX No _____ Date 2/25/15

Macro Results Acceptable see Lab Test # WC-14-2248 (Welding Test Center)

Welder's Name Willian Britting Stamp or Number 2997

Tests conducted by: Warren G. Swan, Jr. CWI Number 04050361

Test Location New England School of Metalwork

7 Albiston Way, Auburn, ME 04210 ; (207)-753-1360

Destructive Tests conducted by: Welding Test Center, Eastern Maine Community College

354 Hogan Rd Bangor, ME 04401; (207) -974-4662

We 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 the 2010 AWS D1.1 Stuctural Welding Code - Steel.

Warren G. Swan, Jr.
Welding Director, NESM
AWS CWI Number: 04050361
Signature: Warren G Swan
Date 3/10/15

CWI Stamp

Warren G Swan Jr
CWI 04050361
QC1 EXP. 5/1/2016

Manufacturer American Aerial Date _____

By _____

WELDING TEST CENTER / Eastern Maine Community College

354 Hogan Rd., Bangor, ME 04401
(207) 974-4662 FAX (207) 974-4608
tgiles@emcc.edu

Mechanical Test Report

Lab Number: WC-14-2248 Date: 03/05/2015

Customer: NESMW for American Aerial PQR#: AA – 004

Code or Standard: American Welding Society D1.1 Structural Welding Code – Steel: 2010

Other: Fillet weld procedure qualification per 4.9.4 (figure 4.19)

Welding Process: FCAW self-shielded: E71T-11, **Base Material:** A36 plate 3/8" x ½" T-joint

Welder: William Britting, ID# 2997

Macro Etch Tests

Etchant: Refer to AWS B2.1-Annex G3, Etching Solutions and Procedures
Nitric Acid / H^2O (3:1)

Fillet Size: Single Pass: ¼" x ¼" leg length Multiple Pass: ½" x ½" leg length

* Visual Inspection x 10 Magnification:

Specimen #:	Visual Inspection	Result:
1 – 2F	No Defects - meets all requirements of section 4.9.4.1 *	Acceptable
2 – 2F	No Defects - meets all requirements of section 4.9.4.1 *	Acceptable
3 – 2F	No Defects - meets all requirements of section 4.9.4.1 *	Acceptable

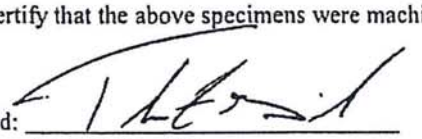
Specimen #:	Visual Inspection	Result:
1 – 3F	No Defects - meets all requirements of section 4.9.4.1 *	Acceptable
2 – 3F	No Defects - meets all requirements of section 4.9.4.1 *	Acceptable
3 – 3F	No Defects - meets all requirements of section 4.9.4.1 *	Acceptable

Specimen #:	Visual Inspection	Result:
1 – 4F	No Defects - meets all requirements of section 4.9.4.1 *	Acceptable
2 – 4F	No Defects - meets all requirements of section 4.9.4.1 *	Acceptable
3 – 4F	No Defects - meets all requirements of section 4.9.4.1 *	Acceptable

*** Acceptance Criteria for Macroetch Test**

- Fillet welds shall have fusion to the root of the joint, but not necessarily beyond.
- Minimum leg size shall meet the specified fillet weld size.
- No cracks
- Through fusion between adjacent layers of weld metal and between weld metal and base metal.
- Weld profiles conforming to specified detail, but none of the variations prohibited in 5.24
- No undercut exceeding 1/32"

We certify that the above specimens were machined and tested in accordance with the applicable code and/or standard.

Signed: 

Thomas E. Giles
Lab Director
AWS CWI No: 88070281
AWS Accredited Lab Certificate No.: 910201

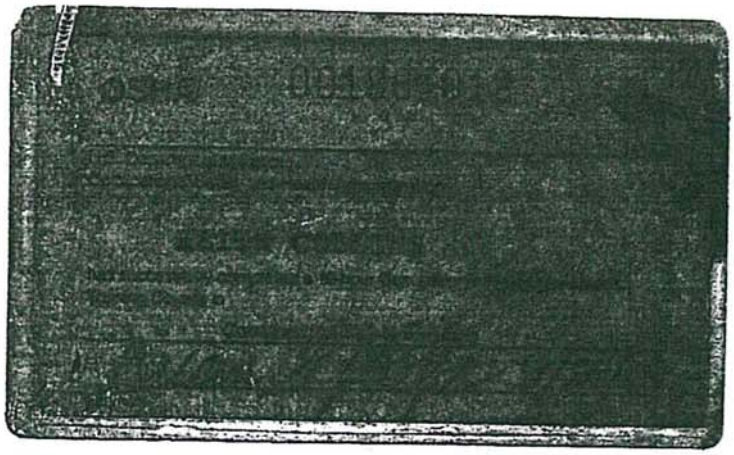
Keith E Collins

Cert # 0009037W SSN # XXX-XX-3951

AMERICAN WELDING SOC

VALID ONLY IF ACCOMPANIED BY PHOTO ID

This Card is the property of AWS and shall be returned on d



Welder Performance Qualification Record
AWS D1.1 Structural Welding Code - Steel

Welder's Name **Zach Johndro** ID Number **4984**

Company **American Aerial**

TEST DESCRIPTION

WPS Number **AA - 001** Test Coupon **XXX** Production Weld

Material Specification, Type or Grade **A36 >3/4"** to Material Specification, Type or Grade **A36 > 3/4"**

Test Thickness **1" Groove**

Thickness Qualified Plate **Groove: 1/8" - Unlimited** **Fillets: Unlimited**

Thickness Qualified Pipe

Groove 1/8 - unlimited on structural pipe equal to or greater than 24" diameter

Fillets: Unlimited

TESTING CONDITIONS AND QUALIFICATION LIMITS

Welding Variables	Actual Values	Range Qualified
Welding Process(es)	SMAW	SMAW
Type (Manual, Semi, Auto)	Manual	Manual
Backing	A36 1/4" x 1-1/2"	Backing required
Material Group Number	Two	Group One and Group Two
Filler Metal AWS Specifications	A5.1	
Filler Metal Classification	E7018 MR	
Filler Metal F Numbers	F4	F1, F2, F3, F4
Position	3G and 4G	All Positions
Vertical Progression (up or down)	Up	Up Only
Inert Gas Backing		
Transfer Mode (GMAW)		
Current / Polarity	115 - 120 amps DC+	

RESULTS

Visual Examination of Completed Weld **Passed** Date **2/7/08**

Bend Test Results: Side Bend **Passed** Side Bend **Passed** Date **2/7/08**

Test conducted by:

Warren G. Swan, Jr. New England School of Metalwork

We certify that the statements in this record are correct and that the test welds were prepared and welded in conformance with the **2006 AWS D1.1** welding code and the above noted Welding Procedure Specification.

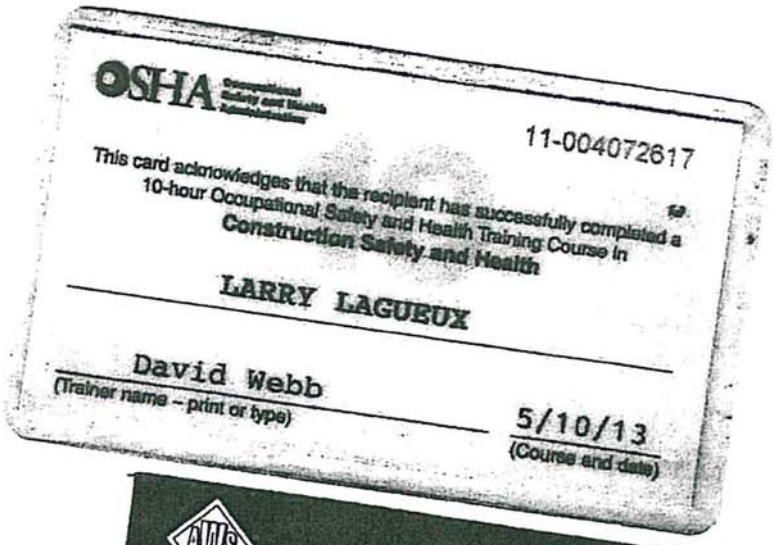
Name: **Warren G. Swan, Jr.**

Affiliation **New England School of Metalwork**

Address **7 Albiston Way Auburn, ME 04210**

WARREN SWAN
CWI 04050361
QC1 EXP. 5/01/10

Warren G Swan


OSHA

11-004072617

This card acknowledges that the recipient has successfully completed a 10-hour Occupational Safety and Health Training Course in Construction Safety and Health

LARRY LAGUEUX

David Webb
(Trainer name – print or type)

5/10/13
(Course and date)


Larry J Lagueux

Cert # 0005090W

SSN # XXX-XX-2255

Welder Performance Qualification Record
AWS D1.1 Structural Welding Code - Steel

Welder's Name **Barry Morrison** ID Number **7073**

Company **American Aerial**

TEST DESCRIPTION

WPS Number **AA - 001** Test Coupon **XXX** Production Weld

Material Specification, Type or Grade **A36 >3/4"** to Material Specification, Type or Grade **A36 > 3/4"**

Test Thickness **1" Groove**

Thickness Qualified Plate **Groove: 1/8" - Unlimited** **Fillets: Unlimited**

Thickness Qualified Pipe

Groove 1/8 - unlimited on pipe equal to or greater than 24" diameter

Fillets: Unlimited

TESTING CONDITIONS AND QUALIFICATION LIMITS

Welding Variables	Actual Values	Range Qualified
Welding Process(es)	SMAW	SMAW
Type (Manual, Semi, Auto)	Manual	Manual
Backing	A36 1/4" x 1-1/2"	Backing required
Material Group Number	Two	Group One and Group Two
Filler Metal AWS Specifications	A5.1	
Filler Metal Classification	E7018 MR	
Filler Metal F Numbers	F4	F1, F2, F3, F4
Position	3G and 4G	All Positions
Vertical Progression (up or down)	Up	Up Only
Inert Gas Backing		
Transfer Mode (GMAW)		
Current / Polarity	115 - 120 amps DC+	

RESULTS

Visual Examination of Completed Weld **Passed** Date **1/30/08**

Bend Test Results: Side Bend **Passed** Side Bend **Passed** Date **1/30/08**

Test conducted by:

Warren G. Swan, Jr. New England School of Metalwork

We certify that the statements in this record are correct and that the test welds were prepared and welded in conformance with the **2006 AWS D1.1** welding code and the above noted Welding Procedure Specification.

Name: **Warren G. Swan, Jr.**

Affiliation **New England School of Metalwork**

Address **7 Albiston Way Auburn, ME 04210**

WARREN SWAN
CWI 04050361
QC1 EXP. 5/01/10

WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD

Welder or Welding Operator's Name _____

Identification No. _____ Qualification Date _____

Welder's Social Security No. [redacted]

In Accordance with WPS No. _____ Revision _____

Welding Process(es) _____ Type _____ (Automatic, manual, etc.)

Mode of Transfer for GMAW _____ (Short circuiting, spray, globular)

VARIABLE	ACTUAL VARIABLE USED IN QUAL.	QUALIFICATION RANGE
JOINT		
Joint Type		
Backing Material Type		
Groove Welded From: one side or both sides		
BASE METAL (4.7.1.1)		
Material Specification		
Sheet Steel	to	to
Supporting Steel		
Sheet Thickness (4.7.2.1)		
Groove		
Fillet		
Arc Plug		
Arc Spot		
Arc Seam		
COATING(S)		
Type		
Thickness		
POSITION (4.7.1.5 and 4.7.1.6)		
Groove		
Fillet		
Arc Plug		
Arc Spot		
Arc Seam		
Progression		
GAS (4.7.1.4)		
ELECTRODE (4.7.1.3 and 4.7.1.4)		
Size		
Group Designation		

VISUAL EXAMINATION RESULTS (4.6)

Specimen 1 _____ Specimen 2 _____

Appearance _____ Cracks _____ Undercut _____

Reinforcement _____ Diam of Arc Spot Nugget _____

Test Conducted By _____ Per _____

Laboratory Test No. _____ Date of Test _____

The undersigned certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of 4.6 of ANSI/AWS D1.3 (19[redacted]), *Structural Welding Code—Sheet Steel*.
(year)

Company _____ Authorized By _____

Form A-3

Welder Performance Qualification
AWS D1.1 Structural Code - Steel

Failed Overhead Test Coupon

Welder's Name Anthony Patterson ID Number 4767

Company American Aerial

TEST DESCRIPTION

WPS Number AA - 001 Test Coupon XXX Production Weld

Material Specification, Type or Grade A36 to Material Specification, Type or Grade A36

Test Thickness 1.0" Groove

Thickness Qualified Plate Groove: 1/8" - unlimited Fillets: Unlimited

Thickness Qualified Pipe

Groove 1/8"- unlimited" on structural pipe equal to or greater than 24" in diameter with backing or gouging

Other: Fillets Unlimited

TESTING CONDITIONS AND QUALIFICATION LIMITS

Welding Variables	Actual Values	Range Qualified
Welding Process(es)	SMAW	SMAW
Type (Manual, Semi, Auto)	Manual	Manual
Backing	A36 1/4" x 1.5"	Backing required
Material Group Number	Two	Group One and Two steels
Filler Metal AWS Specifications	A5.1	
Filler Metal Classification	E7018	
Filler Metal F Numbers	F4	F1 - F4
Position	3G and 4G	All positions
Vertical Progression (up or down)	Up	Up only
Inert Gas Shielding or Backing		
Transfer Mode (GMAW)		
Current / Polarity	DC+	DC+

RESULTS

Visual Examination of Completed Welds Passed Date 12/7/10

Vertical Bends -Passed, Overhead Bends Failed
Qualified to weld Flat, Horizontal, and Vertical positions only

Vertical Test Results: Bend #1 Passed, three openings <1/32"
Bend #2 Passed, one opening <1/32"

Overhead Test Results: Bend #1 Failed, lack of penetration and slag entrapment in root pass
Bend #2 Failed, lack of penetration and slag entrapment in root pass

Date 12/7/10

Test conducted by:

Warren G. Swan, Jr. New England School of Metalwork

We certify that the statements in this record are correct and that the test welds were prepared and welded in conformance with the 2010 AWS D1.1 welding code and the above noted Welding Procedure Specification.

Name: Warren G. Swan, Jr.

Affiliation New England School of Metalwork

Address 7 Albiston Way Auburn, ME 04210

Warren G Swan, Jr.
CWI 04050361
QC1 EXP. 8/1/2013

Quality Assurance Labs Inc.
NON-DESTRUCTIVE TESTING AND INSPECTION SERVICES
80 PLEASANT AVENUE • SOUTH PORTLAND, MAINE 04106 • TEL: (207) 799-8911 • FAX: (207) 799-7251

INSPECTION REPORT

CUSTOMER'S NAME: American Aerial Services INC. P.O. NO.: 2794 PAGE 1 OF 3

RADIOGRAPHY REPORT NO.: QAL-04-296 PROCEDURE NO.: 0913 QUANTITY: 1

PART NO.: WELDER TEST PLATE JOB NO.: N/A

SOURCE: TYPE Iridium 192 SIZE: .107 X .118 CURIES: 23.3 KV: N/A MA: N/A SID: 20"

SINGLE ☑ FRONT ☑

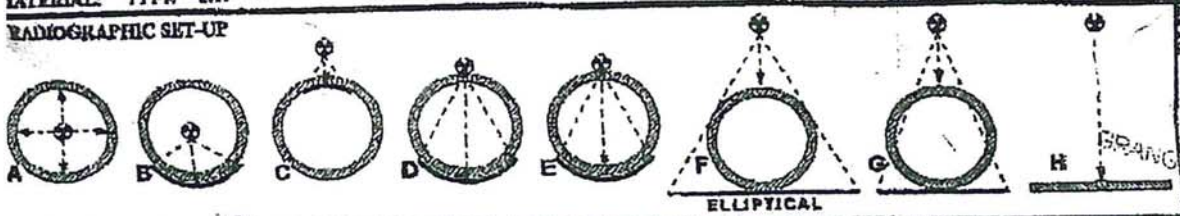
FILM: TYPE II SPEED: 100 DOUBLE ☐ SIZE: 4½ x 17 SCREENS: 0.005" BACK ☑

FILM SIDE ☐

PCI: SIZE " B WIRE" GROUP: I SENSITIVITY: .013 SHIM: N/A SOURCE SIDE ☑

MATERIAL: TYPE SS THICKNESS: 3/8" ACCEPTANCE STANDARD: AWS D1.6

RADIOGRAPHIC SET-UP



OTHER

RECEIVED

BRANGER NORTHERN

WELD NUMBER	VIEW NUMBER	CONDITION CODE (See Below)	ACCEPT	REJECT	WELD NUMBER	VIEW NUMBER	CONDITION CODE (See Below)	ACCEPT	REJECT
WID	0-1	2	✓						
TM									

REMARKS

METHOD(S), PROCESS(ES), PROCEDURE(S) MERCURY FREE

DEFINITIONS:
1. Crack
2. Porosity
3. Incomplete Fusion
4. Incomplete penetration
5. Slag
6. Inclusions
7. Cus Holes
8. Shrink
9. No Apparent Defects
10. Film Artifacts
11. HiLo
12. Surface
13. Undercut
14. Void
15. External concavity

SIGNATURE: R. Russell #2687716

DATE: m / d / y 05/12/2004

LEVEL: II

(FORM XXXX REV 0)

Quality Assurance Labs Inc.

NON-DESTRUCTIVE TESTING AND INSPECTION SERVICES

80 PLEASANT AVENUE • SOUTH PORTLAND, MAINE 04106 • TEL: (207) 799-8911 • FAX: (207) 799-7251

INSPECTION REPORT

CUSTOMER'S NAME: American Aerial Services | P.O. NO.: Verbal | PAGE 1 OF 1

RADIOGRAPHY REPORT NO.: QAL-02-265 | PROCEDURE NO.: 1003 | QUANTITY: 1

PART NO.: 3/8" Test Plate | JOB NO.:

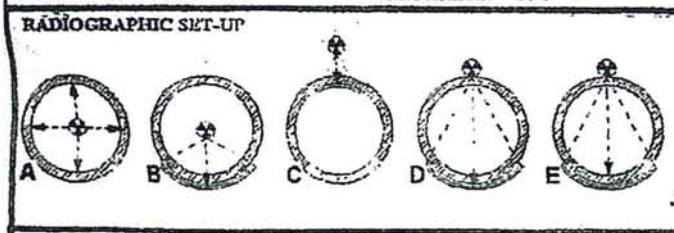
SOURCE: TYPE Iridium 192 | SIZE: .118 x .104 | CURIES: 53.6 | KV: | MA: | SFD: 21"

FILM: TYPE II | SPEED: 100 | SINGLE ☑ | DOUBLE ☐ | SIZE: 4½ x 10 | SCREENS: 0.005" | FRONT ☑ | BACK ☑ | FILM SIDE ☐ | SOURCE SIDE ☑

IQI: SIZE ASTM "B" Wire | GROUP: I | SENSITIVITY: .016 | SHIM:

MATERIAL: TYPE CS | THICKNESS: 3/8" + | ACCEPTANCE STANDARD: AWS D1.1

RADIOGRAPHIC SET-UP



OTHER

SERIAL NUMBER	VIEW NUMBER	CONDITION OF PART (See Definitions)	ACCEPT	REJECT	SERIAL NUMBER	VIEW NUMBER	CONDITION OF PART (See Definitions)	ACCEPT	REJECT
T. Morton									
Over Head	0 - 1	9	✓						

REMARKS

Gregory E Parechanian

DEFINITIONS:

1. Crack
2. Porosity
3. Incomplete Fusion
4. Incomplete penetration
5. Slag
6. Inclusions
7. Gas Holes
8. Shrink
9. No Apparent Defects
10. Film Artifacts
11. Hi/Lo
12. Surface
13. Undercut
14. Void
15. Internal concavity

SIGNATURE: G. Parechanian #2447369

DATE: 04/05/2002 (M / D / Y) LEVEL: II

FORM XXXX REV 01

WELDER, WELDING OPERATOR OR TACK WELDER QUALIFICATION TEST RECORD

Type of Welder Supplement G
Name Thomas Morton Identification No. 1
Welding Procedure Specification No. ______ Rev ______ Date 4-5-02

Variables	Record Actual Values Used in Qualification	Qualification Range
Process/Type [Table 4.10, Item (2)]	SMAW	SMAW
Electrode (single or multiple) [Table 4.9, Item (9)]	E7018	
Current/Polarity	DC +	
Position [Table 4.10, Item (5)]	4G	4G
Weld Progression [Table 4.10, Item (7)]	Overhead	
Backing (YES or NO) [Table 4.10, Item (8)]	yes	yes
Material/Spec. [Table 4.10, Item (1)]	1/8 to 3/4	
Base Metal		
Thickness: (Plate)		
Groove	3/8"	Limited 3/4"
Fillet		
Thickness: (Pipe/tube)		
Groove		
Fillet		
Diameter: (Pipe)		
Groove		
Fillet		
Filler Metal [Table 4.10, Item (3)]		
Spec. No.	E7018	
Class		
F-No.	F4	F4
Gas/Flux Type [Table 4.10, Item (4)]	N/A	
Other		N/A

VISUAL INSPECTION (4.8.1)

Acceptable YES or NO ____

Guided Bend Test Results (4.30.5)

Type	Result	Type	Result

Fillet Test Results (4.30.2.3 and 4.30.4.1)

Appearance ______ Fillet Size ______
Fracture Test Root Penetration ______ Macroetch ______
(Describe the location, nature, and size of any crack or tearing of the specimen.)

Inspected by ______ Test Number ______
Organization ______ Date ______

RADIOGRAPHIC TEST RESULTS (4.30.3.1)

Film Identification Number	Results	Remarks	Film Identification Number	Results	Remarks
	PASS				

Interpreted by Gary E. Parashuman (signature) Test Number QAL02-265
Organization Quality Assurance Labs Date 4/5/2002

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 ANSI/AWS D1.1, (2002 (year)) Structural Welding Code—Steel.

Manufacturer or Contractor American Aerial Services Authorized By Chris Sawyer (signature)
Date 4-5-02

Form E-4

nealjwhite@gmail.com Tel. 603-383-9347 Fax. 603-383-8262

WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD

Welder or Welding Operators Name: **Corey Perro** Identification No.: **CP**
Welding Process: **FCAW** Manual: Semiautomatic: **X** Machine:
Position: **Overhead (4F)**
In accordance with Procedure Specification No.: **Weng-1 FCAW**
Joint type: **Tee (ref. AWS D1.1-10 fig.4.37)**
Material Specification: **ASTM A36**
Thickness tested: **1/2"**
Qualified for: **Fillet welds (1F, 2F, 4F)**

FILLER METAL

Specification No **AWS A 5.29** Classification: **E71TG-G** F No.: **6**

Filler metal diameter and trade name: **5/64" Lincoln Innershield NR212** Gas: **NA**

VISUAL INSPECTION

Appearance: **Acceptable** Undercut: **None** Porosity: **None**

TEST RESULT

TYPE	RESULT	TYPE	RESULT
Macroetch	**Acceptable**	**Fillet break**	**Acceptable**

Test conducted by: **Neal J White**
Per: **AWS D1.1 2010 fig.4.37**

Laboratory Test No.: **CP**
Test Date: **April 10, 2011**

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: **April 17, 2011**
CWI No.: **86070201**

WHITE ENGINEERING, LLC P.O. BOX 670 Glen, NH 03838
nealjwhite@gmail.com Tel. 603-383-9347 Fax. 603-383-8262

WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD

Welder or Welding Operators Name: **Corey Perro** Identification No.: **CP**
Welding Process: **FCAW** Manual: Semiautomatic: **X** Machine:
Position: **Vertical up (3G)**
In accordance with Procedure Specification No.: **Weng-1 FCAW**
Joint type: **Groove Weld (ref. AWS D1.1-10 fig.4.30)**
Material Specification: **ASTM A36**
Thickness tested: **1"**
Qualified for: **Unlimited fillet and groove welds flat, horizontal and vertical positions**

FILLER METAL

Specification No. **AWS A 5.29** Classification: **E71TG-G** F No.: 6

Filler metal diameter and trade name: **5/64" Lincoln Innershield NR212** Gas: NA

VISUAL INSPECTION

Appearance: **Acceptable** Undercut: **None** Porosity: **None**

BEND TEST RESULT

TYPE	RESULT	TYPE	RESULT
Side #1	**Acceptable**	**Side #2**	**Acceptable**

Test conducted by: **Neal J White**
Per: **AWS D1.1 2010 fig.4.12 & 4.15**

Laboratory Test No.: **CP**
Test Date: **April 18, 2011**

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: **April 18, 2011**
CWI No.: **86070201**

WHITE ENGINEERING, LLC P.O. Box 670 Glen, N.H. 03838
nealjwhite@gmail.com Tel. 603-383-9347 Fax. 603-383-8262

WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD

Welder or Welding Operators Name: **Corey Perro** Identification No.: **CP**
Welding Process: **FCAW** Manual: Semiautomatic: **X** Machine:
Position: **Horizontal (2G)**
In accordance with Procedure Specification No.: **Weng-1 FCAW-1**
Joint type: **Groove weld (ref. AWS D1.1-10 fig.4.30)**
Material Specification: **ASTM A572 Gr50**
Thickness tested: **1"**
Qualified for: **Unlimited fillet and groove welds flat and horizontal positions**

FILLER METAL

Specification No **AWS A 5.29** Classification: **E70T7** F No.: **6**

Filler metal diameter and trade name: **5/64" Lincoln Innershield NR311** Gas: **NA**

VISUAL INSPECTION

Appearance: **Acceptable** Undercut: **None** Porosity: **None**

BEND TEST RESULT

TYPE	RESULT	TYPE	RESULT
Side #1	**Acceptable**	**Side #2**	**Acceptable**

Test conducted by: **Neal J White**
Per: **AWS D1.1 2010 fig.4.13 & 4.15**

Laboratory Test No.: **CP**
Test Date: **April 10, 2011**

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: **April 17, 2011**
CWI No.: **86070201**

nealjwhite@gmail.com Tel. 603-383-9347 Fax. 603-383-8262

WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD

Welder or Welding Operators Name: **Corey Perro** Identification No.: **CP**
Welding Process: **SMAW** Manual: **X** Semiautomatic: Machine:
Position: **Vertical up (3F), Overhead (4F)**
In accordance with Procedure Specification No.: **Weng-1 SMAW**
Joint type: **Fillet weld (ref. AWS D1.1-10 fig.4.37)**
Material Specification: **ASTM A36**
Thickness tested: **1/2"**
Qualified for: **Fillet welds all positions**

FILLER METAL

Specification No **AWS A 5.1** Classification: **E7018** F No.: **4**

Filler metal diameter and trade name: **1/8" Lincoln Excaliber** Gas: **NA**

VISUAL INSPECTION

Appearance: **Acceptable** Undercut: **None** Porosity: **None**

TEST RESULT

TYPE	RESULT	TYPE	RESULT
Macroetch (V)	**Acceptable**	**Fillet break (V)**	**Acceptable**
Macroetch (OH)	**Acceptable**	**Fillet break (OH)**	**Acceptable**

Test conducted by: **Neal J White**
Per: **AWS D1.1 2010 fig.4.37**

Laboratory Test No.: **CPV, CPOH**
Test Date: **April 10, 2011**

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: **April 17, 2011**
CWI No.: **86070201**

UTS Of Massachusetts Inc.
"The Construction Testing People"

WELDER QUALIFICATION TEST RECORD

Welder's or welding operator's name JAMES E READ Identification no. [redacted]-0534
Welding process SMAW Manual XXXX Semiautomatic Machine
Position 3G (vertical upwards) & 4G
(Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)
In accordance with procedure specification no.
Material specification ASTM A 36
Diameter and wall thickness (if pipe) — otherwise, joint thickness 3/8" PLATE
Thickness range this qualifies LIMITED THICKNESS

FILLER METAL

Specification no. AWS A5.1 Classification E7018 F-no. F4
Describe filler metal (if not covered by AWS specification)

Is backing strip used? YES
Filler metal diameter and trade name MUREX 1/8" DIA. Flux for submerged arc or gas for gas metal arc or flux cored arc welding

VISUAL INSPECTION

Appearance ACCEPTABLE Undercut NONE Piping porosity NONE

Guided Bend Test Results

Type	Result	Type	Result
3G RB	ACCEPTABLE	4G RB	ACCEPTABLE
3G FB	ACCEPTABLE	4G FB	ACCEPTABLE

Test conducted by MICHAEL A SCULLY Laboratory test no. 990513
per CWI # 88070121 Test date MAY 13,1999

Fillet Test Results

Appearance Fillet size
Fracture test root penetration Macroetch
(Describe the location, nature, and size of any crack or tearing of the specimen)
Test conducted by Laboratory test no.
per Test date

RADIOGRAPHIC TEST RESULTS

Film identification	Results	Remarks	Film identification	Results	Remarks

Test witnessed by Test no.

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 Structural Welding Code.

Contractor AMERICAN AERIAL
Authorized by JAMES E READ
Date MAY 13 1999

5 Richardson Lane, Stoneham, Massachusetts 02180 (781) 438-7755 Fax (781) 438-6216

HE-046904

STEVEN L SANDERS
27 WILLIAMS ROAD
SABATTUS ME 04280

01/13/2016

MAINE
Charles E. Summers Jr.
Secretary of State

CDL OPERATOR

SANDERS
STEVEN L
27 WILLIAMS ROAD
SABATTUS, ME 04280

9427057

EXPIRES	ISSUED	BIRTH DATE
01/13/2016	01/10/2011	01/13/1952

WEIGHT	SEX	HAIR	EYES	HEIGHT
160	M	BR	BR	60

CLASS B
REST. A
END. I

Restricted To:
HE-4A- Unlimited Specialty Series
HE-1A- Derricks/ Lattice Cranes

DIG SAFE CALL CENTER: (888) 344-7233 - In case of an accident call (508) 820-1444.

For DPS Licensing Information visit: www.Mass.Gov/DPS

Steven L Sanders

#	Test Date	Sup	Code	Process(es)	GAS	Filler Metal	Base Metal	Pos	Thickness,Backing Thickness,Pipe;OD & Backing	Expires
1	2/24/1994	1	D1	SMAW	N/A	F4	P	A	U	3/13/2014

AWS Certified Welder
Welders, Brazers and Operators

Steven L Sanders

Cert # 0710063W SSN # XXX-XX-3727

1-800-443-9353 x 273
Information relating to identification and certification of the bearer of this card may be verified by calling or writing:
CERTIFICATION DEPARTMENT OF THE AMERICAN WELDING SOCIETY
8669 Doral Blvd. #130, Doral, Florida 33166

AMERICAN WELDING SOCIETY

VALID ONLY IF ACCOMPANIED BY PHOTO ID

This Card is the property of AWS and shall be returned on demand.

American Institute of Steel Construction

is proud to recognize

James A. McBrady, Inc.

29 Parkway Dr., Scarborough, ME

for successfully meeting the quality certification requirements for

Standard for Steel Building Structures
Standard for Bridge and Highway Metal Components
Sophisticated Paint Endorsement - Enclosed

Roger E. Ferch

207051031-2016
Certification Number

Certification valid through: **September 2016**

Quality Management Company, LLC
One East Wacker Drive, Suite 700
Chicago, IL 60601
main: +1 312.670.7520

QMC
Quality assurance for the steel construction industry

AISC Certification – Site Audit Scope

Mr. Guw McBrady
James A. McBrady, Inc.
29 Parkway Drive
Scarborough, Maine 04074
p: 207.883.4176
f: 207.883.0276
e: gmcbrady@mcbradysteel.com

	Unique ID	207051031
	audit #	**20705103115AR2**
	auditor	Chuck Mlodzik
	site audit date(s)	**August 13, 2015**
	total employees	20
Audit Scope	**INITIAL**	
	RENEWAL	**CCR2**
	ADDITIONAL	

Certification Scope Audited			
Current	**Add**	**Remove**	**Certification Program**
BU			Building Fabricator (BU)
			Bridge Fabricator (SBR, IBR, ABR)
CPT			Bridge Component Fabricator (CPT)
SPE-P1			Sophisticated Painting Endorsement (SPE-P1,-P2,-P3)
			Fracture Critical Endorsement (FCE)
			Steel Erector (CSE, ACSE)
			Erector Endorsement (BRDG, SEIS, DECK)

Auditor Review	Auditor Initials
Actions for the last audit's Area of Concern(s) were reviewed	
Actions for the last audit's QMC CAR(s) remain effective	
Bolting demonstration observed (circle type(s)) PIV RCT (NP)	
Total number of CARs issued	1
AISC special instructions executed (Explain in space below)	

Explanation of Certification Scope Changes

Included in Site Audit Scope were: (check all that apply)

- ☒ AISC Code of Standard Practice for Steel Buildings and Bridges, Chapter N of the AISC Specification for Structural Steel Buildings and Bridges and applicable AISC Program Requirements.
- ☐ AASHTO/NSBA Steel Bridge Fabrication QC/QA Guide Specifications and AISC Standard for Steel Bridges including Supplemental Requirements: ☐ I ☐ A&I ☐ F ☐ None
- ☐ Erector Seismic Endorsement included AWS D1.8, ANSI/AISC 341
- ☐ Erector Metal Deck Endorsement included ANSI/SDI QA/QC Standard
- ☐ Erector Bridge Endorsement included AWS D1.5

Gus McBrady		20150813
Exec. Mgmt Team Representative	Role	Date
Chuck Mlodzik		20150813
QMC Onsite Auditor		Date

No conflicts of interest between the auditor and this audited company were encountered during this audit.

I have received a copy of the CARs issued during this site audit.

I have been informed of any changes requiring the submission of a Key Variables Change Form to AISC.

Participant Initials	Auditor Initials

QMC
Quality Management Company, LLC

AISC Certification – Site Audit Findings

James A. McBrady, Inc. **29 Parkway Drive** **Scarborough, Maine 04074**	Audit #	**20705103115AR2**
	Audit Date(s)	August 13, 2015
	Auditor	Chuck Mlodzik

Identified Strengths – *These are written to summarize a participant's abilities to meet or exceed conformance to the Site Audit Scope. They may include functions or processes that could represent a unique ability or potential competitive advantage.*

- **Management Team:** The management of James A. McBrady shows a strong commitment to continual quality improvement throughout the organization. One way this was observed was through the recent acquisition and installation of the Peddinghaus CNC Drill line.
- **Traceability:** MTR's and COC's were available for all sampled materials and consumables.
- **Quality:** The shop documents all in-process and final inspections. Inspection records sampled were well written, clear and concise., easy to follow.
- **Facility:** The shop is of ample size, has good lighting, appears to have good ventilation, and housekeeping is very good.

Opportunities for Improvement – *these are suggestions or opinions based on the auditor's experience that could add-value to the fabricator's quality management system or the erector's quality/safety management systems.*

- **AISC 201, AISC 204, Element 14**: Consider expanding upon the calibration of inspection, measuring and test equipment, ensuring that all equipment is being brought into the program and that records are being maintained as to the procedure and status of calibrations (e.g. weld gages).
- **AISC 201, Element 12; AWS D1.1, Clause 5.26.5**: Consider expanding upon the welding procedure specifications (WPSs) and develop a repair procedure for incorrectly located holes.

Areas of Concern – *the Participant **SHALL** engage the fabricator Quality Management System or the erector Quality/Safety Management Systems to review, evaluate and implement correction of the items listed below.*

- **AISC 420, Element 13.2**: Inspection records do not identify surface profile being achieved after blasting. No measurements are being taken.

Areas of Concern will be reviewed at the next audit for effective implementation. A repeated Concern at the next audit will be viewed as a breakdown of the Quality/Safety Management System and a Corrective Action Request will be issued.

QMC AISC Certification – Site Audit Findings

Quality Management Company, LLC

James A. McBrady, Inc. **29 Parkway Drive** **Scarborough, Maine 04074**	Audit #	**20705103115AR2**
	Audit Date(s)	August 13, 2015
	Auditor	Chuck Mlodzik

Description of Jobs Sampled *(AISC Certification need not be specified to be sampled during the audit)*

Sample 1

Was "Special Inspection" by 3rd party waived for projects reviewed? ☒ Y ☐ N ☐ N/A
Was a "Certificate of Conformance" per IBC Chapter 17 submitted? ☐ Y ☐ N ☒ N/A

#10-210, COSP 2.1, Columns, job not completed, No COC, AISC Specified. 41 tons.

Sample 2

Was "Special Inspection" by 3rd party waived for projects reviewed? ☒ Y ☐ N ☐ N/A
Was a "Certificate of Conformance" per IBC Chapter 17 submitted? ☐ Y ☐ N ☒ N/A

#10-204, COSP 2.1, Beams & Girders, job not completed, No COC, AISC Specified 25

Sample 3

Was "Special Inspection" by 3rd party waived for projects reviewed? ☒ Y ☐ N ☐ N/A
Was a "Certificate of Conformance" per IBC Chapter 17 submitted? ☐ Y ☒ N ☐ N/A

#10-206, COSP 2.1, Trusses, job, No COC, AISC Specified. 12 tons

Attachments:

- *Site Audit Scope*
- *Corrective Action Requests (AUCA)*

Acknowledgement of AISC Receipt and Program Review

[signature] [illegible] 11-2-15

AISC Representative *Date*

QMC
Quality Management Company, LLC

AISC Certification - Site Audit
Corrective Action Request (CAR)

Participant Facility & location	Phone	Email	Audit #	Letter Assignment
James A. McBrady, Inc. Scarborough, Maine	**207.883.4176**	**gmcbrady@mcbradysteel.com**	**20705103115AR2**	**A**

Part #1 (Completed by Quality Management Company onsite auditor)

Reference:
SSPC PA-2, Clause 5 Calibration, Verification of Accuracy and Adjustment
AISC 420, Element 14 Verification of Accuracy of Inspection, Measuring, and Test Equipment

Description of Audit Evidence:
Dry Film Thickness gages are not being calibrated by the equipment manufacturer, their authorized agent or an accredited calibration laboratory. No test certificate or other document showing traceability to a national metrology institution was available.

Auditor: **Chuck Mlodzik**	Date: **20150813**
Participant (Certification Contact/Management Representative): **Gus McBrady**	Date: **20150813**
Notes:	

Part #2 (Completed by Quality Management Company onsite auditor)

Evidence due by (no later than 30 days after closing meeting)	**The Fabricator/Erector must respond with evidence to the CAR(s) in the specified time frame; failure to do so will result in QMC making an unsatisfactory recommendation to AISC for certification and will put your certification status in jeopardy.**
September 14, 2015	

Part #3 (return evidence via email to cars@qmconline.org)

- **Probable root cause of condition and Action to prevent Recurrence shall be documented within an Internal Corrective Action.**
- **QMC Site Audit Corrective Action Request (CAR) requires that you initiate an Internal Corrective Action (C/A) using your own system. A copy of your internal C/A must be sent to QMC along with evidence you provide to close the QMC CAR.**
- **Note: Failure to complete QMC CAR(s) in a timely manner may trigger an Additional Audit at your expense.**

Evidence submitted by		**Date:**	

Part #4 Corrective Action Evaluation (Completed by Quality Management Company)

Comments: **C/R reviewed. Corr. action submitted with options they are considering but no evidence of correction to calibration submitted. Reviewing.**
C/R reviewed 10/25/15. Evidence submitted of DFT gauge purchase with certs. All accepted

QMC Staff: **LP**	Review Date: **9/25/15, 10/25/15**

Part #5 Corrective Action follow-up during Additional Audit, if applicable (Completed by QMC Auditor)

Comments:	
QMC Auditor:	Review Date:

BECKER
STRUCTURAL ENGINEERS

MILL CERTIFICATIONS

PROJECT UNE ALUMNI HALL RENO

STRUCTURAL STEEL	☒RECEIVED	DATE: 3-23-16	☐NOT RECEIVED
BOLTS	☒RECEIVED	DATE: 3-23-16	☐NOT RECEIVED
WELD FILLER	☒RECEIVED	DATE: 3-23-16	☐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: DSB DATE: 3-23-16

SEISMIC RESISTANCE CHECK LIST [IBC 1705.3]

Seismic Design Category B

☐ **FOR SEISMIC DESIGN CATEGORY C OR HIGHER:**

Structural:

☐ The seismic-force-resisting systems

☐ Steel Braced Frames and associated connections/anchorage (Not required for SDC C, R=3)

☐ Steel Moment Frames and associated connections (Not required for SDC C, R=3)

☐ Shear walls: ☐ CMU ☐ Wood ☐ Concrete ☐ Diaphragms: ☐ Floor ☐ Roof

☐ Other:

WIND RESISTANCE CHECK LIST [IBC 1705.4]

Wind Exposure Category B

REQUIRED	NOT REQUIRED	NOT APPLICABLE	WIND RESISTANCE REQUIREMENTS
☐	☒	☐	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.
☐	☐	☒	In wind exposure Categories C and D, where the 3-second-gust basic wind speed is 110 mph (49 *m/sec)* or greater.

Project: Alumni Hall Renovation - University of New England
Date Prepared: 5/1/15

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: Alumni Hall Renovation - UNE

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

Date of Last Audit or Approval: September 2015

Description of structural members and assemblies that have been fabricated:

Structural Steel per Construction Documents

I hereby certify that items described above were fabricated in strict accordance with the approved construction documents.

Signature

3/23/16
Date

President
Title

Attach copies of fabricator's certification or building code evaluation service report and fabricator's quality control manual

End of Structural Special Inspections Report