RHODE ISLAND COLLEGE

PROJECT MANUAL

Adams Library HVAC Upgrades

Providence, Rhode Island

Torrado Architects

Issue Date: October 19, 2018

00 01 01 – TITLE PAGE

Owner:

State of Rhode Island Board of Education, Rhode Island College, and State of Rhode Island

In care of:

Capital Projects Administration
Rhode Island College
Physical Plant
600 Mount Pleasant Avenue
Providence, RI 02908
Phone: (401) 456-9885

Design Agent and MEP:

Firm	Engineering Design Services Incorporated
Address	141 Industrial Drive, Slatersville, RI 02876
Contact	Arnold Kaija
Email	akaija@edesignservice.com
Phone	401-229-9372

Architect:

Firm	Torrado Architects
Address	35 Greenwich Street, Providence, RI 02907
Contact	Luis Torrado
Email	la.torrado@verizon.net
Phone	401-781-0633

Structural:

Firm	Odeh Engineers, Inc.
Address	1223 Mineral Spring Avenue, North Providence, RI 02904
Contact	Bruce Vallone
Email	valloneb@odehengineers.com
Phone	401-724-1771

00 01 10 – TABLE OF CONTENTS

DIVISION 00 00 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

00 00 00 – COVER
00 01 01 – TITLE PAGE
00 01 10 – TABLE OF CONTENTS
00 01 15 – LIST OF DRAWINGS
00 30 00 – BID BOND AIA A310-2010
00 31 00 – AVAILABLE INFORMATION
00 31 01 – GEOTECHNICAL ENGINEERING REPORT
00 31 02 – HAZARDOUS MATERIALS INSPECTION REPORT
00 31 03 – CONSTRUCTION SOILS MANAGEMENT PLAN
00 50 00 – CONTRACTING FORMS
00 52 00 – AGREEMENT FORM
00 65 19 – WAIVER OF LIEN FORM
WAIVER OF LIEN FORM MATERIAL OR LABOR
00 72 00 – GENERAL CONDITIONS
00 73 01 – HOT WORK PROCEDURE
00 73 02 – MANAGING FIRE PROTECTION SYSTEM IMPAIRMENT
FIRE SPRINKLER AND ALARM SYSTEM IMPAIRMENT NOTIFICATION FORM
00 73 36 – PREVAILING WAGE RATES
00 90 00 – ADDENDA AND MODIFICATIONS

DIVISION 01 00 00 – GENERAL REQUIREMENTS

01 10 00 – SUMMARY
01 20 00 – PRICE AND PAYMENT PROCEDURES
MBE COMPLIANCE FORM
01 22 00 – UNIT PRICES
01 23 00 – ALTERNATES
01 30 00 – ADMINISTRATIVE REQUIREMENTS
01 33 00 – SUBMITTAL PROCEDURES
01 40 00 – QUALITY REQUIREMENTS
01 50 00 – TEMPORARY FACILITIES AND CONTROLS
01 60 00 – PRODUCT REQUIREMENTS
01 70 00 – EXECUTION REQUIREMENTS
01 74 00 – WASTE MANAGEMENT
01 77 00 – CLOSEOUT REQUIREMENTS

DIVISION 23 00 00 – HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)
DIVISION 26 00 00 – ELECTRICAL

END OF SECTION

00 01 15 – LIST OF DRAWINGS

GENERAL

Dwg. No	Drawing Title	Date
	Cover/Title Sheet	10-19-2018

STRUCTURAL

Dwg. No	Drawing Title	Date
S1	Partial Roof Plan, Sections & General Notes	10-10-2018

MECHANICAL

Dwg. No	Drawing Title	Date
M1.0	Mechanical First Floor Plan	10-19-2018
M2.0	Mechanical Fourth Floor Plan	10-19-2018
M3.0	Mechanical Roof Plan – Demolition	10-19-2018
M4.0	Mechanical Roof Plan – New Work	10-19-2018
M5.0	Mechanical Details	10-19-2018
M6.0	Mechanical Schedules	10-19-2018

ELECTRICAL

Dwg. No	Drawing Title	Date
E0.0	Electrical Schedules, Notes and Details	10-19-2018
E1.0	Electrical Plan – Demolition	10-19-2018
E2.0	Electrical Plan – New Work	10-19-2018

END OF SECTION

00 11 53 – REQUEST FOR QUALIFICATIONS AIA A305-1986

Prepare and submit AIA A305 with the Bid.

END OF SECTION

00 30 00 – BID BOND AIA A310-2010

See AIA Document A310-2010, attached as the following page.

END OF SECTION

AIA® Document A310™ – 2010

Bid Bond

CONTRACTOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)

BOND AMOUNT: $

PROJECT:
(Name, location or address, and Project number, if any)

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Init.
/

AIA Document A310™ – 2010. Copyright © 1963, 1970 and 2010 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 17:24:41 on 10/18/2018 under Order No.0972882803 which expires on 07/12/2019, and is not for resale.
User Notes: (1449682511)

Signed and sealed this day of ,

	(Contractor as Principal)	*(Seal)*
(Witness)	*(Title)*	
	(Surety)	*(Seal)*
(Witness)	*(Title)*	

AIA Document A310™ – 2010. Copyright © 1963, 1970 and 2010 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 17:24:41 on 10/18/2018 under Order No.0972882803 which expires on 07/12/2019, and is not for resale.
User Notes: (1449682511)

00 31 00 – AVAILABLE INFORMATION

PART 1 - GENERAL

1.1 EXISTING CONDITIONS

A. Certain information relating to existing surface and subsurface conditions and structures is available to bidders but will not be part of the Contract Documents, as follows:

B. Limited Asbestos Building Survey, Rhode Island College – Adams Library dated January 8, 2015.

1. A copy of this document is found in Section 00 31 02
2. This survey identifies areas of observed and tested asbestos at the Adams Library. The report was limited to areas that were able to be observed without destructive investigation.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

00 31 02 – HAZARDOUS MATERIALS INSPECTION REPORT

END OF SECTION

Limited Asbestos Building Survey
Rhode Island College – Adams Library
600 Mount Pleasant Avenue
Providence, Rhode Island 02908

Prepared for:

Durkee, Brown, Viveiros & Werenfels Architects
111 Chestnut Street
Providence, RI 02903
On behalf of
Rhode Island College
RFP#7540367

Prepared by:

Common Sense Environmental, Inc.

38 Elm Street
New Bedford, MA 02740
508-858-5606

January 8, 2015

Table of Contents

Section 1.0 Introduction

Section 2.0 Bulk Sampling Information

Section 3.0 Description of Identified Areas and Suspect Materials

Section 4.0 Summary/Conclusions

Section 5.0 Signature(s) of Environmental Professional(s)

Appendices:

Appendix A Asbestos Bulk Sampling Results

Appendix B Photographs

1.0 Introduction

This asbestos survey report is being submitted on behalf of Durkee, Brown, Viveiros & Werenfels Architects for Rhode Island College to support the Feasibility Study for the Modernization and Renovation of the Adams Library at Rhode Island College. In order to determine the feasibility of completing future renovations throughout the building a limited non-destructive survey for asbestos containing materials (ACMs) was conducted at the Adams Library, which is located on the Rhode Island College campus at 600 Mount Pleasant Street in Providence, RI.

The Adams Library is the largest academic building on campus with 4 floors and approximately 103,178 cumulative square feet. The building was constructed in two halves, the first in 1966 and the second in 1974. In addition to serving as a library, the building currently also contains a television studio, a Gender & Women's Studies Program, Faculty Center for Teaching and Learning, the Department of Counseling, Ed Leadership and the School of Psychology.

Qualified personnel from Common Sense Environmental (Common Sense) and Bock and Clark (B&C) conducted the asbestos survey sampling following procedures generally accepted and recommended by the United States Environmental Protection Agency (US EPA), the United States Occupational Safety Health Administration (OSHA) and the Rhode Island Department of Health (RIDOH).

The suspect ACMs sampled during the survey of the subject property buildings included wall and ceiling plaster and gypsum board, joint compound, caulking, window caulking and glazing, various floor covering (mostly vinyl tile) and associated mastics, various cove base molding and associated mastics, ceramic tile grout, glue dobs, wall panel glue, drop ceiling materials, textured ceiling, exterior caulking and thermal system insulation in the form of hard packed elbows and fittings.

Upon sampling and analysis, several of the sampled materials were found to contain greater than 1% asbestos (see Section 4.0 for identified ACMs). The ACMs identified should be removed by a RIDOH licensed asbestos abatement contractor in accordance with an approved Asbestos Abatement Plan written by a RIDOH licensed Asbestos Project Designer, prior to disturbance during any planned renovations. ACMs should be managed in place under an operations and maintenance program until removal takes place.

2.0 Bulk Sampling Information

The suspect ACMs were characterized by the analysis of bulk samples collected by Cynthia Gilchrest (RI License No. AAC-0937) and Vincent L. Jacques (RI License No. AAC-0409) and on December 29, 2014.

Licensed and trained personnel have made an effort to characterize visible and readily accessible suspect ACMs within/along the interior/exterior areas of the subject property building, excluding roofing. The survey was not a destructive survey and was completed in occupied settings. Additionally, many rooms, closets and other areas were locked and inaccessible at the time of our survey and no survey can be all encompassing. As such, should

construction workers encounter and/or need to disturb any product(s) suspected as being ACM, that have not been previously identified or sampled, during any renovation activities in the future, all proper precautions should be taken to ensure these materials are appropriately characterized and handled accordingly. While heating system pipes appeared to be visible and located outside of wall cavities in many cases, it is possible that older pipes insulated with asbestos thermal system insulation exists in uninspected wall cavities. If these materials are encountered, they should be characterized and handled in accordance with applicable local, state and federal regulations.

Survey procedures included a visual assessment of suspect ACM and painted surfaces identified by licensed and trained personnel. Visual assessment included the touching of identified suspect ACM to determine its friability, (when dry, may be crushed, pulverized, or reduced to powder by hand pressure), identification of homogeneous areas of identified suspect ACM, approximate quantification of identified suspect ACM, collection of bulk samples for analysis, and assessment of the condition of suspect ACM. The USEPA's *Managing Asbestos in Place, A Building Owner's Guide to Operations and Maintenance Programs for Asbestos-Containing Materials*, was used as a guide for this survey.

Each homogenous area of suspect ACM was assessed to determine the asbestos hazard. A homogeneous area is defined as a material that is uniform in color or texture with a similar appearance and an application on similar components. Factors considered when assessing homogeneous area hazards include the friability of the material, the condition of the material including type, severity, and extent of damage, and accessibility of the material and potential for further damage and disturbance.

Sampling methods were designed to minimize damage to the ACM and subsequent fiber release. Samples were collected using disposable samplers, similar to a cork borer and utility knife. Samples were extracted to the substrate and ejected into a pre-labeled asbestos sample bag. The bag was then sealed, recorded in a sample logbook, and sent to the laboratory for analysis.

Samples were submitted to and analyzed by Asbestos Identification Laboratory (AIL) of Woburn, Massachusetts. AIL is accredited through the National Voluntary Laboratory Accreditation Program (NVLAP No. 2000919-0) and with the RIDOH (AAL-121). All samples were analyzed in accordance with USEPA recommended protocol ("Follow-up to the Interim Method for Determination of Asbestos in Bulk Insulation Samples" - EPA 600/R-93/116 method "Visual Estimate") using polarized light microscopy (PLM) supplemented by dispersion staining techniques.

One twenty-five (125) asbestos bulk samples were collected at the subject property building, with instructions to the laboratory to stop at the first positive results obtained for each homogeneous material sample set. Based on this instruction, 110 bulk samples were laboratory analyzed by AIL. **Appendix A** contains a chain-of-custody and a copy of the bulk sampling results, as provided by AIL.

As confirmed by laboratory analyses and as summarized in Section 4.0 of this report, several of the sampled materials were found to have asbestos content equal to or greater than 1% asbestos. As such, the ACMs identified should be removed by a RIDOH licensed asbestos abatement contractor in accordance with an approved Asbestos Abatement Plan written by a RIDOH licensed Asbestos Project Designer, prior to disturbance during any planned

renovations. ACMs should be managed in place under an operations and maintenance program until removal takes place.

3.0 Background Air Sampling

As the scope of this project consisted solely of an asbestos survey only, no background air sampling was conducted during this survey. However, now that asbestos has been detected and future abatements may be necessary, pre-abatement air samples may be required as a part of the development of a required Asbestos Abatement Plan, if abatement is to take place.

4.0 Description of Identified Areas and Suspect Materials

This asbestos survey has been completed at Adams Library at Rhode Island College as a part of a feasibility study for potential future renovations of the building.

The suspect ACMs sampled during the survey of the subject property buildings included wall and ceiling plaster and gypsum board, joint compound, caulking, window caulking and glazing, various floor covering (mostly vinyl tile) and associated mastics, various cove base molding and associated mastics, ceramic tile grout, glue dobs, wall panel glue, drop ceiling materials, textured ceiling, exterior caulking and thermal system insulation in the form of hard packed elbows and fittings.

Sampled materials and results are summarized in the following table. Materials which tested positive for asbestos through laboratory analysis are indicated by bold type on the attached Table and include the asbestos content identified through laboratory analysis.

Sample No.	Location	Description	Asbestos Content
1A-1C	3rd and 4th floor, interior side of exterior walls	Drywall plaster	None Detected
2A-2B	3rd and 4th floor	Joint Compound	None Detected
3A-3B	Various throughout	6” charcoal cove base molding	None Detected
3A-3BM	Various throughout	Mastic associated with 3A-3B	None Detected
4A-4C	Floors 1A, 1B, 3rd and 4th	2’x2’ drop ceiling	None Detected
5A-5B	Floors 1A, 3rd and 4th	Ceiling panel glue dobs	None Detected
6A-6B	Along wood windows on floors 1A and 3	Interior black caulking/glazing	2% Chrysotile
7A	3rd floor bathroom	Ceramic tile grout	None Detected
8A-8C	3rd and 4th floor elevator lobby	Multi-colored 12”x12” vinyl floor tile	None Detected

Sample No.	Location	Description	Asbestos Content
8AM-8CM	3rd and 4th floor elevator lobby	Mastic associated with 8A-8C	None Detected
9A-9C	3rd floor entrance and hallway, 4th floor at elevator	Vinyl floor panels	None Detected
10A-10B	Stairwells	Cranberry 4" cove base molding	None Detected
10AM-10BM	Stairwells	Mastic associated with 10A-10B	None Detected
11A-11C	Various throughout	Drywall sheetrock, interior walls	None Detected
12A-12C	TV Studio	12"x12" vinyl floor tile	None Detected
12AM-12CM	TV Studio	Mastic associated with 12A-12C	None Detected
13A-13B	TV Studio	Black cove base molding	None Detected
13AM-13BM	TV Studio	Mastic associated with 13A-13B	None Detected
14A-14C	TV studio control room, and stairwell 1A-1B	Textured ceiling	None Detected
15A-15C	Floors 1B and 4th	1'x1' ceiling tiles	None Detected
16A-16C	Floors 1B and 4th	Glue dobs associated with 15A-15C	None Detected
17A-17B	Floor 1B women and gender studies	Brown cove base molding	None Detected
17AM-17BM	Floor 1B women and gender studies	Mastic associated with 17A-17B	None Detected
18A-18C	4th floor mechanical room	Hard packed elbows	None Detected
19A-19C	**Floor 1A**	**Beige-yellow-orange 9"x9"vinyl floor tile**	**10% Chrysotile**
19AM-19CM	**Floor 1A**	**Mastic associated with 19A-19C**	**10% Chrysotile**
20A-20B	Floor 1A	2" black cove base molding	None Detected
20AM-20BM	**Floor 1A**	**Mastic associated with 20A**	**2% Chrysotile**
21A-21C	Outside 1st floor boiler room	12"x12" vinyl floor tile	None Detected
21AM-21CM	Outside 1st floor boiler room	Mastic associated with 21A-21B	5% Chrysotile
22A-22C	Floor 1A over transition ramp	Textured coating on concrete ceiling	None Detected

Sample No.	Location	Description	Asbestos Content
23A-23C	Floor 1A lower section	12"x12" off-white brown speckle	None Detected
23AM-23CM	Floor 1A lower section	Mastic associated with 23A-23C	None Detected
24A-24B	Floor 1A lower section	Light brown 4" cove base molding	None Detected
24AM-24BM	Floor 1A lower section	Mastic associated with 24A-24B	None Detected
25A-25B	**Floor 1A offices from exterior**	**12"x12" vinyl floor tile**	**5% Chrysotile**
25AM-25BM	**Floor 1A offices from exterior**	**Mastic associated with 25A-25B**	**10% Chrysotile**
26A-26C	Lower walls - floor 1A offices from exterior	Wall paneling glue	None Detected
27A-27B	Floor 1A offices from exterior	Brown cove base molding	None Detected
27AM-27BM	Floor 1A offices from exterior	Mastic associated w/ 27A-27B	None Detected
28A-28C	Exterior front entrance windows	Grey caulking	None Detected
29A-29C	Exterior front entrance windows	Dark caulking at glass and wood frame	None Detected
30A-30C	Exterior wall at TV studio	Orange caulking	None Detected
31A-31C	**Exterior wall near TV studio**	**Black caulking under and side of air intake**	**2% Chrysotile**
32A-32C	**Near air intake and granite panels**	**Exterior white caulking**	**2% Chrysotile**
33A-33C	Exterior wood windows	Exterior black window caulking	None Detected
34A-34C	Exterior wood windows	Red caulking	None Detected

5.0 Summary/Conclusions

Common Sense and B&C completed a limited asbestos survey at the Adams Library at Rhode Island College, located at 600 Mount Pleasant Street in Providence, Rhode Island.

One hundred and twenty-five (125) asbestos bulk samples were collected from the subject property building, with instructions to the laboratory to stop at the first positive results obtained for each homogeneous material sample set. Based on this instruction, 110 bulk samples were laboratory analyzed by AIL. Appendix A contains a chain-of-custody and a copy of the bulk sampling results, as provided by AIL.

As can be seen in the attached results and as summarized in Section 4.0 of this report, several of the sampled materials were found to have asbestos content equal to or greater than 1% asbestos. As such, the ACMs identified should be removed by a RIDOH licensed asbestos abatement contractor in accordance with an approved Asbestos Abatement Plan written by a RIDOH licensed Asbestos Project Designer, prior to disturbance during any planned renovations. ACMs should be managed in place under an operations and maintenance program until removal takes place.

The materials found to contain greater than 1% asbestos and are summarized in the following table:

Sample No.	Location	Description	Asbestos Content
19A-19C	Floor 1A	Beige-yellow-orange 9"x9"vinyl floor tile	10% Chrysotile
19AM-19CM	Floor 1A	Mastic associated with 19A-19C	10% Chrysotile
20AM-20BM	Floor 1A	Mastic associated with 20A	2% Chrysotile
25A-25B	Floor 1A offices from exterior	12"x12" vinyl floor tile	5% Chrysotile
25AM-25BM	Floor 1A offices from exterior	Mastic associated with 25A-25B	10% Chrysotile
31A-31C	Exterior wall near TV studio	Black caulking under and side of air intake	2% Chrysotile
32A-32C	Near air intake and granite panels	Exterior white caulking	2% Chrysotile

This report has been prepared for the sole benefit of Durkee, Brown, Viveiros & Werenfels Architects The report may not be used by any other person or entity without the express written consent of Common Sense Environmental, Inc.

Any use which a third party makes of this report, or any reliance on decisions made based on it, are the responsibility of such third parties. Common Sense and Bock and Clark accept no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted engineering and scientific practices current at the time the work was performed. Conclusions presented in this report should not be construed as legal or medical advice.

The conclusions presented in this report represent the best technical judgment of Common Sense and Bock and Clark based on the data obtained from the work. The conclusions are based on the site conditions encountered by licensed and trained personnel at the time work was performed at the specific inspection and/or sampling locations.

5.0 Signature(s) of Environmental Professional(s)

Cynthia S. Gilchrest
Senior Project Manager
RI License No. AAC-0937

Vincent L. Jacques, P.E.
RI License No. AAC-0409

January 8, 2014

APPENDIX A

Asbestos Bulk Sampling Results

Asbestos Identification Laboratory

165 New Boston St., Ste 271
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com
Email: mikemanning@asbestosidentificationlab.com

Batch: 3509

NVLAP®
Lab Code: 200919-0

January 06, 2015

Vincent Jacques
Bock and Clark Environmental, LLC
889 Boston Meck Rd
Narragansett, RI 02882

Project Number: 201400582
Project Name: RI College- Adams Library

Date Sampled: 2014-12-29
Work Received: 2014-12-31

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

Dear Vincent Jacques,

Asbestos Identification Laboratory has completed the analysys of the samples from your office for the above referenced project .

The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.

Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations Department of Health Certification: AAL-121

Thank you Vincent Jacques for your business.

Michael Manning
Owner/Director

January 06, 2015

Vincent Jacques
Bock and Clark Environmental, LLC
889 Boston Meck Rd
Narragansett, RI 02882

Project Number: 201400582
Project Name: RI College- Adams Library

Date Sampled: 2014-12-29
Work Received: 2014-12-31

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %		Asbestos %
1A / 37194	Drywall Plaster	3rd Floor	multi	Non-Fibrous	100	None Detected
1B / 37195	Drywall Plaster	3rd Floor	white	Non-Fibrous	100	None Detected
1C / 37196	Drywall Plaster	1st Floor	white	Non-Fibrous	100	None Detected
2A / 37197	Joint Compound	3rd Floor	white	Non-Fibrous	100	None Detected
2B / 37198	Joint Compound	4th Floor	white	Non-Fibrous	100	None Detected
2C / 37199	Joint Compound	1st Floor	white	Non-Fibrous	100	None Detected
3A / 37200	Charcoal Cove Base Molding	3rd Floor	black	Non-Fibrous	100	None Detected
3AM / 37201	Mastic w/ 3A	3rd Floor	yellow	Non-Fibrous	100	None Detected
3B / 37202	Charcoal Cove Base Molding	4th Floor	black	Non-Fibrous	100	None Detected
3BM / 37203	Mastic w/ 3B	4th Floor	yellow	Non-Fibrous	100	None Detected
4A / 37204	2x2 Drop Ceiling	3rd Floor	multi	Mineral Wool Cellulose Non-Fibrous	40 40 20	None Detected
4B / 37205	2x2 Drop Ceiling	Floor 1A	multi	Mineral Wool Cellulose Non-Fibrous	40 40 20	None Detected
4C / 37206	2x2 Drop Ceiling	Floor 1B	gray	Mineral Wool Cellulose Non-Fibrous	40 40 20	None Detected
5A / 37207	Ceiling Panel Glue Dobs	3rd Floor	brown	Other Non-Fibrous	2 98	None Detected

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
5B / 37208	Ceiling Panel Glue Dobs	3rd Floor	brown	Other 2 Non-Fibrous 98	None Detected
5C / 37209	Ceiling Panel Glue Dobs	4th Floor	brown	Other 2 Non-Fibrous 98	None Detected
6A / 37210	Black Caulk- Wood Windows	3rd Floor	brown	Non-Fibrous 98	Detected Chrysotile 2
6B / 37211	Black Caulk- Wood Windows	3rd Floor	null		Not Analyzed
6C / 37212	Black Caulk- Wood Windows	Floor 1A	null		Not Analyzed
7A / 37213	Ceramic Tile Grout	3rd FL Bath	white	Non-Fibrous 100	None Detected
8A / 37214	12x12 VAT- Multi	3rd FL Elevator Lobby	tan	Non-Fibrous 100	None Detected
8AM / 37215	Mastic w/ 8A	3rd FL Elevator Lobby	yellow	Non-Fibrous 100	None Detected
8B / 37216	12x12 VAT- Multi	3rd FL Elevator Lobby	tan	Non-Fibrous 100	None Detected
8BM / 37217	Mastic w/ 8B	3rd FL Elevator Lobby	yellow	Non-Fibrous 100	None Detected
8C / 37218	12x12 VAT- Multi	3rd FL Elevator Lobby	tan	Non-Fibrous 100	None Detected
8CM / 37219	Mastic w/ 8C	3rd FL Elevator Lobby	multi	Non-Fibrous 100	None Detected
9A / 37220	Floor Panels	3rd FL Entrance/Hall	multi	Non-Fibrous 100	None Detected
9B / 37221	Floor Panels	3rd FL Entrance/Hall	multi	Non-Fibrous 100	None Detected
9C / 37222	Floor Panels	3rd FL Entrance/Hall	multi	Non-Fibrous 100	None Detected
10A / 37223	Cranberry Cove Base Molding	Stairwell	red	Non-Fibrous 100	None Detected
10AM / 37224	Mastic w/ 10A	Stairwell	yellow	Non-Fibrous 100	None Detected
10B / 37225	Cranberry Cove Base Molding	Stairwell	red	Non-Fibrous 100	None Detected

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
10BM / 37226	Mastic w/ 10B	Stairwell	yellow	Non-Fibrous 100	None Detected
11A / 37227	Drywall- Sheetrock	Int. Walls	multi	Cellulose 40 Non-Fibrous 60	None Detected
11B / 37228	Drywall- Sheetrock	Int. Walls	white	Cellulose 5 Non-Fibrous 95	None Detected
11C / 37229	Drywall- Sheetrock	Int. Walls	white	Non-Fibrous 100	None Detected
12A / 37230	12x12 Black VAT	1A- Studio	black	Non-Fibrous 100	None Detected
12AM / 37231	Mastic w/ 12A	1A- Studio	yellow	Non-Fibrous 100	None Detected
12B / 37232	12x12 Black VAT	1A- Studio	black	Non-Fibrous 100	None Detected
12BM / 37233	Mastic w/ 12B	1A- Studio	yellow	Non-Fibrous 100	None Detected
12C / 37234	12x12 Black VAT	1A- Studio	black	Non-Fibrous 100	None Detected
12CM / 37235	Mastic w/ 12C	1A- Studio	yellow	Non-Fibrous 100	None Detected
13A / 37236	Black Cove Base Molding	1A- Studio	black	Non-Fibrous 100	None Detected
13AM / 37237	Mastic w/ 13A	1A- Studio	yellow	Non-Fibrous 100	None Detected
13B / 37238	Black Cove Base Molding	1A- Studio	black	Non-Fibrous 100	None Detected
13BM / 37239	Mastic w/ 13B	1A- Studio	yellow	Non-Fibrous 100	None Detected
14A / 37240	Textured Ceiling	1A- Studio Control Room	white	Non-Fibrous 100	None Detected
14B / 37241	Textured Ceiling	1A- Studio Control Room	white	Non-Fibrous 100	None Detected
14C / 37242	Textured Ceiling	Stairwell 1A-1B	white	Non-Fibrous 100	None Detected
15A / 37243	1x1 Ceiling Tiles	4th FL	brown	Cellulose 75 Non-Fibrous 25	None Detected

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
15B / 37244	1x1 Ceiling Tiles	1A- Studio Control Hall	multi	Cellulose 70 Non-Fibrous 30	None Detected
15C / 37245	1x1 Ceiling Tiles	1A- Studio Control Hall	brown	Cellulose 75 Non-Fibrous 25	None Detected
16A / 37246	Glue Dobs w/ 15A	4th FL Above Drop	brown	Non-Fibrous 100	None Detected
16B / 37247	Glue Dobs w/ 15B	1A- Studio Control Hall	brown	Non-Fibrous 100	None Detected
16C / 37248	Glue Dobs w/ 15C	1B- Women + Gender Studies	brown	Non-Fibrous 100	None Detected
17A / 37249	Brown Cove Base Molding	1B- Women + Gender Studies	brown	Non-Fibrous 100	None Detected
17AM / 37250	Mastic w/ 17A	1B- Women + Gender Studies	yellow	Non-Fibrous 100	None Detected
17B / 37251	Brown Cove Base Molding	1B- Women + Gender Studies	brown	Non-Fibrous 100	None Detected
17BM / 37252	Mastic w/ 17B	1B- Women + Gender Studies	white	Non-Fibrous 100	None Detected
18A / 37253	Hard Packed Elbows	Mechanical Rooms	gray	Mineral Wool 40 Non-Fibrous 60	None Detected
18B / 37254	Hard Packed Elbows	Mechanical Rooms	gray	Mineral Wool 40 Non-Fibrous 60	None Detected
18C / 37255	Hard Packed Elbows	Mechanical Rooms	gray	Mineral Wool 40 Non-Fibrous 60	None Detected
19A / 37256	9x9 VAT	Floor 1A	tan	Non-Fibrous 90	**Detected** **Chrysotile 10**
19AM / 37257	Mastic w/ 19A	Floor 1A	black	Non-Fibrous 90	**Detected** **Chrysotile 10**
19B / 37258	9x9 VAT	Floor 1A	null		Not Analyzed
19BM / 37259	Mastic w/ 19B	Floor 1A	null		Not Analyzed
19C / 37260	9x9 VAT	Floor 1A	null		Not Analyzed
19CM / 37261	Mastic w/ 19C	Floor 1A	null		Not Analyzed

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
20A / 37262	2" Black Cove Base Molding	Floor 1A	black	Non-Fibrous 100	None Detected
20AM / 37263	Mastic w/ 20A	Floor 1A	brown	Non-Fibrous 98	Detected Chrysotile 2
20B / 37264	2" Black Cove Base Molding	Floor 1A	black	Non-Fibrous 100	None Detected
20BM / 37265	Mastic w/ 20B	Floor 1A	null		Not Analyzed
21A / 37266	Off White 12x12 VAT	Outside Boiler Room 1A	white	Non-Fibrous 100	None Detected
21AM / 37267	Mastic w/ 21A	Outside Boiler Room 1A	multi	Non-Fibrous 95	Detected Chrysotile 5
21B / 37268	Off White 12x12 VAT	Outside Boiler Room 1A	white	Non-Fibrous 100	None Detected
21BM / 37269	Mastic w/ 21B	Outside Boiler Room 1A	null		Not Analyzed
21C / 37270	Off White 12x12 VAT	Outside Boiler Room 1A	white	Non-Fibrous 100	None Detected
21CM / 37271	Mastic w/ 21C	Outside Boiler Room 1A	white		Not Analyzed
22A / 37272	Textured Concrete Coating	Floor 1A- Over Ramp	white	Non-Fibrous 100	None Detected
22B / 37273	Textured Concrete Coating	Floor 1A- Over Ramp	white	Non-Fibrous 100	None Detected
22C / 37274	Textured Concrete Coating	Floor 1A- Over Ramp	white	Non-Fibrous 100	None Detected
23A / 37275	12x12 Off White Brown Speckled VAT	Floor 1A- Lower	white	Non-Fibrous 100	None Detected
23AM / 37276	Mastic w/ 23A	Floor 1A- Lower	black	Non-Fibrous 100	None Detected
23B / 37277	12x12 Off White Brown Speckled VAT	Floor 1A- Lower	white	Non-Fibrous 100	None Detected
23BM / 37278	Mastic w/ 23B	Floor 1A- Lower	black	Non-Fibrous 100	None Detected
23C / 37279	12x12 Off White Brown Speckled VAT	Floor 1A- Lower	white	Non-Fibrous 100	None Detected

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
23CM / 37280	Mastic w/ 23C	Floor 1A- Lower	black	Non-Fibrous 100	None Detected
24A / 37281	Light Brown Cove Base Molding	Floor 1A- Lower	gray	Non-Fibrous 100	None Detected
24AM / 37282	Mastic w/ 24A	Floor 1A- Lower	yellow	Non-Fibrous 100	None Detected
24B / 37283	Light Brown Cove Base Molding	Floor 1A- Lower	gray	Non-Fibrous 100	None Detected
24BM / 37284	Mastic w/ 24B	Floor 1A- Lower	yellow	Non-Fibrous 100	None Detected
25A / 37285	12x12 VAT	1A- Separate Offices	tan	Non-Fibrous 95	Detected Chrysotile 5
25AM / 37286	Mastic w/ 25A	1A- Separate Offices	black	Non-Fibrous 90	Detected Chrysotile 10
25B / 37287	12x12 VAT	1A- Separate Offices	null		Not Analyzed
25BM / 37288	Mastic w/ 25B	1A- Separate Offices	null		Not Analyzed
25C / 37289	12x12 VAT	1A- Separate Offices	null		Not Analyzed
25CM / 37290	Mastic w/ 25C	1A- Separate Offices	null		Not Analyzed
26A / 37291	Lower Wall Panel Glue	1A- Separate Offices	yellow	Non-Fibrous 100	None Detected
26B / 37292	Lower Wall Panel Glue	1A- Separate Offices	yellow	Non-Fibrous 100	None Detected
26C / 37293	Lower Wall Panel Glue	1A- Separate Offices	yellow	Non-Fibrous 100	None Detected
27A / 37294	Brown Cove Base Molding	1A- Separate Offices	brown	Non-Fibrous 100	None Detected
27AM / 37295	Mastic w/ 27A	1A- Separate Offices	gray	Non-Fibrous 100	None Detected
27B / 37296	Brown Cove Base Molding	1A- Separate Offices	brown	Non-Fibrous 100	None Detected
27BM / 37297	Mastic w/ 27B	1A- Separate Offices	gray	Non-Fibrous 100	None Detected

FieldID	LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
28A	37298	Grey Caulking	Front Entrance Windows	gray	Non-Fibrous 100	None Detected
28B	37299	Grey Caulking	Front Entrance Windows	gray	Non-Fibrous 100	None Detected
28C	37300	Grey Caulking	Front Entrance Windows	gray	Non-Fibrous 100	None Detected
29A	37301	Dark Caulking	Front Entrance Windows	brown	Non-Fibrous 100	None Detected
29B	37302	Dark Caulking	Front Entrance Windows	brown	Non-Fibrous 100	None Detected
29C	37303	Dark Caulking	Front Entrance Windows	brown	Non-Fibrous 100	None Detected
30A	37304	Orange Caulking	TV Studio Ext.	gray	Non-Fibrous 100	None Detected
30B	37305	Orange Caulking	TV Studio Ext.	gray	Non-Fibrous 100	None Detected
30C	37306	Orange Caulking	TV Studio Ext.	gray	Non-Fibrous 100	None Detected
31A	37307	Black Caulking	Along Air Intakes	white	Non-Fibrous 98	Detected Chrysotile 2
31B	37308	Black Caulking	Along Air Intakes	null		Not Analyzed
31C	37309	Black Caulking	Along Air Intakes	null		Not Analyzed
32A	37310	White Caulking	Intake Doors + Granite Panels	white	Non-Fibrous 100	None Detected
32B	37311	White Caulking	Intake Doors + Granite Panels	white	Non-Fibrous 100	Detected Chrysotile < 1
32C	37312	White Caulking	Intake Doors + Granite Panels	white	Non-Fibrous 98	Detected Chrysotile 2
33A	37313	Black Caulking	Wood Windows	brown	Non-Fibrous 100	None Detected
33B	37314	Black Caulking	Wood Windows	brown	Non-Fibrous 100	None Detected
33C	37315	Black Caulking	Wood Windows	brown	Non-Fibrous 100	None Detected

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
34A / 37316	Red Caulking	Wood Windows	brown	Fiberglass < 1 Non-Fibrous 100	None Detected
34B / 37317	Red Caulking	Wood Windows	brown	Fiberglass < 1 Non-Fibrous 100	None Detected
34C / 37318	Red Caulking	Wood Windows	brown	Fiberglass < 1 Non-Fibrous 100	None Detected

Tuesday 06 January
Analyzed by: Michael Manning

End of Report
Batch: 3509

Batch #3509

Client: BOCK AND CLARK ENV., LLC

Address: 889 BOSTON NECK RD., NARRAGANSETT, RI 02882

Project Site & #: RI COLLEGE- ADAMS LIBRARY - 20140058 2

Phone / FAX#: (401) 465-2801 / (866) 486-2378

Contact: VINCENT L. JACQUES

Relinquish by/date: Vincent L Jacques 12/30/14

Received by/date: [illegible] 12/31/14

# of Samples Received: 125

CHAIN OF CUSTODY

EPA/600/R-93/116

Asbestos Identification Lab

165-U New Boston St.
Suite 271
Woburn, MA 01801
(781)932-9600
www.asbestosidentificationlab.com

Date Sampled: 12/29/14

Method for the determination of asbestos in bulk building materials.

Turnaround Time		Sample Method	
	Rush	X	Bulk
	Same Day		Soil
	Next Day		Wipe
X	Two Day		Point Count

Stop on 1st Positive? Yes/No

Notify Method: Mail/E-Mail/Verbal

Anayzed By: [illegible]

Date: 1/6/15

Temp in Celcius = 23

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
3194	1A	Material: DRYWALL PLASTER Location: 3RD FLOOR	O	MC	N	GN	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
95	1B	Material: DRYWALL PLASTER Location: 3RD FLOOR	O	WH	Y	GN	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
96	1C	Material: DRYWALL PLASTER Location: 1ST FLOOR	O	WH	Y	GN	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite															100

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp In Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
97	2A	Material: JOINT COMPOUND Location: 3RD FLOOR	0	WH	Y	GN	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
98	2B	Material: JOINT COMPOUND Location: 4TH FLOOR	0	WH	Y	GN	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
99	2C	Material: JOINT COMPOUND Location: 1ST FLOOR	0	WH	Y	GN	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
200	3A	Material: CHARCOAL COVE BASE MOLDING Location: 3RD FLOOR	0	BK	N	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
01	3AM	Material: MASTIC w/ 3A Location: 3RD FLOOR	0	Y	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ‖	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
02	3B	Material: CHARCOAL COVE BASE MOLDWG Location: 4TH FLOOR	0	BK	N	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
03	3BM	Material: MASTIC W/3B Location: 4TH FLOOR	0	Y	N	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
	~~3C~~	Material: ~~CHARCOAL COVE BASE~~ MOLDWG. Location: ~~FLOOR 1B~~						Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															
	~~3CM~~	Material: ~~MASTIC W/3C~~ Location: ~~FLOOR 1B~~						Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															
04	4A	Material: 2'x2' DROP CEILING Location: 3RD FLOOR	0	MC	N	F	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite										IW 40	40				20

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellulose	Hair	Synthetic	Other	Non-Fibrous
05	4B	Material: 2'x2' DROP CEILING Location: FLOOR 1A	0	MC	N	F	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite										IW 40	40				20
06	4C	Material: 2'x2' DROP CEILING Location: FLOOR 1B	0	GY	Y	F	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite										IW 40	40				20
07	5A	Material: CEILING PANEL GLUE DOBS Location: 3RD FLOOR	0	BR	Y	H	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite														5 2	98
08	5B	Material: CEILING PANEL GLUE DOBS Location: 3RD FLOOR	0	BR	Y	H	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite														5 2	98
09	5C	Material: CEILING PANEL GLUE DOBS Location: 4TH FLOOR	0	BR	Y	H	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite														5 2	98

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
10	6A	Material: BLACK CAULK - WOOD WINDOWS Location: 3RD FLOOR	O	BR	Y	H	N	Chrysotile	2	W	U	+	L	N	1.53	1.570								98
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
11	6B	Material: BLACK CAULK - WOOD WINDOWS Location: 3RD FLOOR						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
12	6C	Material: BLACK CAULK - WOOD WINDOWS Location: FLOOR 1A						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
13	7A	Material: CERAMIC TILE GROUT Location: 3RD FI BATH	O	WH	Y	GN	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
14	8A	Material: 12X12 VAT - MULTI Location: 3RD FI ELEVATOR LOBBY	O	T	Y	GN	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

DNA

DNA

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
15	8AM	Material: MASTIC w/ 8A Location: 3RD FI ELEVATOR LOBBY	O	Y	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
19	8B	Material: 12X12 VAT-MULTI Location: 3RD FI ELEVATOR LOBBY	O	T	Y	GN	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
5	8BM	Material: MASTIC w/ 8B Location: 3RD FI ELEVATOR LOBBY	O	Y	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
18	8C	Material: 12X12 VAT-MULTI Location: 4TH FI ELEVATOR LOBBY	O	T	Y	GN	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
51	8CM	Material: MASTIC w/ 8C Location: 4TH FI ELEVATOR LOBBY	O	MC	N	T/R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
20	9A	Material: FLOOR PANELS Location: 3RD FL ENTRANCE/HALL	0	MC	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
21	9B	Material: FLOOR PANELS Location: 3RD FL ENTRANCE/HALL	0	MC	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
22	9C	Material: FLOOR PANELS Location: 3RD FL ENTRANCE/HALL	0	MC	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
23	10A	Material: CRANBERRY COVE BASE MOLDING Location: STAIRWELL	0	R	N	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
24	10AM	Material: MASTIC w/ 10A Location: STAIRWELL	0	Y	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellulose	Hair	Synthetic	Other	Non-Fibrous
25	10B	Material: CRANBERRY COVE BASE MOLDING Location: STAIRWELL	O	R	N	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
26	10BM	Material: MASTIC w/ 10B Location: STAIRWELL	O	Y	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
	~~10C~~	Material: ~~CRANBERRY COVE BASE MOLDING~~ Location: ~~STAIRWELL~~						Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															
	~~10CM~~	Material: ~~MASTIC w/ 10C~~ Location: ~~STAIRWELL~~						Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															
27	11A	Material: DRYWALL - SHEETROCK Location: INT. WALLS	O	MC	N	F 6N	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite											W 40				60

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
28	11B	Material: DRYWALL- SHEETROCK Location: INT. WALLS	0	WH	Y	F GN	Y	Chrysotile															
								Amosite															
								Crocidolite											W				
								Tremolite															
								Anthophylite															
								Actinolite											5				95
29	11C	Material: DRYWALL - SHEETROCK Location: INT. WALLS	0	WH	Y	GN	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
30	12A	Material: 12X12 BLACK VAT Location: 1A - STUDIO	0	BK	Y	GN	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
31	12AM	Material: MASTIC W/12A Location: 1A - STUDIO	0	Y	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
32	12B	Material: 12X12 BLACK VAT Location: 1A - STUDIO	0	BK	Y	GN	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ‖	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
33	12BM	Material: MASTIC w/ 12B Location: 1A - STUDIO	0	Y	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
34	12C	Material: 12X12 BLACK VAT Location: 1A - STUDIO	0	BK	Y	GN	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
35	12CM	Material: MASTIC w/ 12C Location: 1A - STUDIO	0	Y	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
36	13A	Material: BLACK COVE BASEMOLDING Location: 1A - STUDIO	0	BK	N	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
37	13AM	Material: MASTIC w/ 13A Location: 1A - STUDIO	0	Y	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
38	13B	Material: BLACK COVE BASE MOLDING Location: 1A STUDIO	0	BK	N	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
39	13BM	Material: MASTIC w/ 13B Location: 1A STUDIO	0	Y	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
	~~13C~~	Material: ~~BLACK COVE BASE~~ MOLDING Location: ~~1A STUDIO~~						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
	~~13CM~~	Material: ~~MASTIC w/ 13C~~ Location: ~~1A STUDIO~~						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
40	14A	Material: TEXTURED CEILING Location: 1A STUDIO CONTROL ROOM	0	WH	N	GN	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
41	14B	Material: TEXTURED CEILING Location: 1A STUDIO CONTROL ROOM	0	WH	N	GN	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
42	14C	Material: TEXTURED CEILING. Location: STAIRWELL 1A-1B	0	WH	N	GN	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
43	15A	Material: 1X1 CEILING TILES Location: 4TH FL.	0	BR	Y	F	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite											W 75				25
44	15B	Material: 1X1 CEILING TILES Location: 1A - STUDIO CONTROL HALL	0	MC	N	F	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite											W 70				30
45	15C	Material: 1X1 CEILING TILES Location: 1A - STUDIO CONTROL HALL	0	BR	Y	F	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite											W 75				25

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
46	16A	Material: GLUE DOBS w/ 15A Location: 4TH FL ABOVE DROP	0	BR	Y	H	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
47	16B	Material: GLUE DOBS w/ 15B Location: 1A - STUDIO CONTROL HALL	0	BR	Y	H	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
48	16C	Material: GLUE DOBS w/ 15C Location: 1A - STUDIO CONTROL HALL	0	BR	Y	H	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
49	17A	Material: BROWN COVE BASE MOLDING Location: 1B WOMEN + GENDER STUDIES	0	BR	N	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
50	17AM	Material: MASTIC w/ 17A Location: 1B - WOMEN + GENDER STUDIES	0	Y	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
51	17B	Material: BROWN COVE BASE MOLDING Location: 1B WOMEN + GENDER STUDIES	0	BRN		R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
52	17BM	Material: MASTIC w/ 17B Location: 1B - WOMEN + GENDER STUDIES	0	WH	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
	~~17C~~	Material: ~~BROWN COVE BASE MOLDING~~ Location: ~~1B - WOMEN + GENDER STUDIES~~						Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															
	~~17CM~~	Material: ~~MASTIC w/ 17C~~ Location: ~~1B WOMEN + GENDER STUDIES~~						Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															
53	18A	Material: HARD PACKED ELBOWS Location: MECHANICAL ROOMS	0	GY	Y	F/P	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite										I 40					60

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
54	18B	Material: HARD PACKED ELBOWS Location: MECHANICAL ROOMS	0	GY	Y	F/P	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite										I 40					60
55	18C	Material: HARD PACKED ELBOWS Location: MECHANICAL ROOMS	0	GY	Y	F/P	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite										I 40					60
56	19A	Material: 9X9 VAT Location: FLOOR 1A	0	T	Y	GN	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite	10	W	LL	+	L	N	1.03	1.00								80
57	19AM	Material: MSTIC w/ 19A Location: FLOOR 1A	0	BK	Y	+	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite	10	W	LL	+	L	N	1.03	1.00								90
58	19B	Material: 9X9 VAT Location: FLOOR 1A						Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															

DNA

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ‖	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous	
59	19BM	Material: MASTIC w/ 19B						Chrysotile																
								Amosite																
								Crocidolite																
		Location: FLOOR 1A						Tremolite																
								Anthophylite																DNA
								Actinolite																
60	19C	Material: 9X9 VAT						Chrysotile																
								Amosite																
								Crocidolite																
		Location: FLOOR 1A						Tremolite																
								Anthophylite																DNA
								Actinolite																
61	19CM	Material: MASTIC w/ 19C						Chrysotile																
								Amosite																
								Crocidolite																
		Location: FLOOR 1A						Tremolite																
								Anthophylite																DNA
								Actinolite																
62	20A	Material: 2" BLACK COVE BASE MOLDING						Chrysotile																
								Amosite																
								Crocidolite																
		Location: FLOOR 1A	O	BK	Y	R	N	Tremolite																
								Anthophylite																
								Actinolite																100
63	20AM	Material: MASTIC w/ 20A						Chrysotile	2	W	IL	+	L	N	1.053	1.070								
								Amosite																
								Crocidolite																
		Location: FLOOR 1A	O	BR	Y	R	N	Tremolite																
								Anthophylite																
								Actinolite																98

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
64	20B	Material: 2" BLACK COVE BASE MOLDING Location: FLOOR 1A	0	BK	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
65	20BM	Material: MASTIC w/ 20A Location: FLOOR 1A						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															DNA
	~~20C~~	Material: ~~2" BLACK COVE BASE MOLDING~~ Location: ~~FLOOR 1A~~						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
	~~20CM~~	Material: ~~MASTIC w/ 20C~~ Location: ~~FLOOR 1A~~						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
66	21A	Material: OFF WHITE 12X12 VAT Location: OUTSIDE BOILER ROOM 1A	O	WH	Y	GN	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
67	21AM	Material: MASTIC w/ 21A Location: OUTSIDE BOILER ROOM 1A	O	MC	N	T	N	Chrysotile	5	W	U	+	L	N	1.03	1.00							
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															95
68	21B	Material: OFF WHITE 12X12 VAT Location: OUTSIDE BOILER ROOM 1A	O	WH	Y	GN	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100.
69	21BM	Material: MASTIC w/ 21A Location: OUTSIDE BOILER ROOM 1A						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															DNA
70	21C	Material: OFF WHITE 12X12 VAT Location: OUTSIDE BOILER ROOM 1A	O	WH	Y	GN	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
71	21CM	Material: MASTIC w/ 21C Location: OUTSIDE BOILER ROOM 1A						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															DNA

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
72	22A	Material: TEXTURED CONCRETE COATING Location: FLOOR 1A - OVER RAMP	0	WH	N	GN	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
73	22B	Material: TEXTURED CONCRETE COATING Location: FLOOR 1A - OVER RAMP	0	WH	N	GN	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
74	22C	Material: TEXTURED CONCRETE COATING Location: FLOOR 1A - OVER RAMP	0	WH	N	GN	Y	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
75	23A	Material: 12X12 OFFWHITE BROWN SPECKLE VAT Location: FLOOR 1A - LOWER	0	WH	Y	GN	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															102
76	23AM	Material: MASTIC W/ 23A Location: FLOOR 1A - LOWER	0	BK	Y	T	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
77	23B	Material: 12X12 OFF WHITE VAT BROWN SPECKLE Location: FLOOR 1A - LOWER	O	WH	Y	GN	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
78	23BM	Material: MASTIC w/ 23 B Location: FLOOR 1A - LOWER	O	BK	Y	T	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
79	23C	Material: 12X12 OFF WHITE BROWN SPECKLE VAT Location: FLOOR 1A - LOWER	O	WH	Y	GN	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
80	23CM	Material: MASTIC w/ 23 C Location: FLOOR 1A - LOWER	O	BK	Y	T	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
81	24A	Material: LIGHT BROWN COVE BASE MOLDING Location: FLOOR 1A - LOWER	O	GY	N	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100

Temp in Celcius = ____

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
82	24AM	Material: MASTIC w/ 24A Location: FLOOR 1A LOWER	0	Y	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
83	24B	Material: LIGHT BROWN COVE BASE MOLDING Location: FLOOR 1A LOWER	0	GY	N	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
84	24BM	Material: MASTIC w/ 24B Location: FLOOR 1A LOWER	0	Y	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
	~~24C~~	Material: ~~LIGHT BROWN COVE BASE MOLDING~~ Location: ~~FLOOR 1A LOWER~~						Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															
	~~24CM~~	Material: ~~MASTIC w/ 24C~~ Location: ~~FLOOR 1A LOWER~~						Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous	
85	25A	Material: 12X12 VAT Location: 1A - SEPERATE OFFICES	O	T	Y	GN	N	Chrysotile	5	W	IL	+	L	N	1.073	1.070							95	
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																
86	25AM	Material: MASTIC w/ 25A Location: 1A - SEPERATE OFFICES	O	BK	Y	+	N	Chrysotile	10	W	IL	+	L	N	1.073	1.070							90	
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																
87	25B	Material: 12X12 VAT Location: 1A - SEPERATE OFFICES						Chrysotile																DNA
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																
88	25BM	Material: MASTIC w/ 25B Location: 1A - SEPERATE OFFICES						Chrysotile																DNA
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																
89	25C	Material: 12X12 VAT Location: 1A - SEPERATE OFFICES						Chrysotile																DNA
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
90	25CM	Material: MASTIC w 25C Location: 1A - SEPERATE OFFICES.						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
91	26A	Material: LOWER WALL PANEL GLUE Location: 1A - SEPERATE OFFICES	O	Y	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
92	26B	Material: LOWER WALL PANEL GLUE Location: 1A - SEPERATE OFFICES	O	Y	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
93	26C	Material: LOWER WALL PANEL GLUE Location: 1A - SEPERATE OFFICES.	O	Y	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
94	27A	Material: BROWN COVE BASE MOLDING Location: 1A - SEPERATE OFFICES	O	BR	N	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

DNA

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
95	27AM	Material: MASTIC w/ 27A Location: 1A - SEPERATE OFFICES	0	GY	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
96	27B	Material: BROWN COVE BASE MOLDING Location: 1A - SEPERATE OFFICES	0	BR	N	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
97	27BM	Material: MASTIC w/ 27B Location: 1A SEPERATE OFFICES	0	GY	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
	~~27C~~	Material: ~~BROWN COVE BASE MOLDING~~ Location: ~~1A SEPERATE OFFICES~~						Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															
	~~27CM~~	Material: ~~MASTIC w/ 27C~~ Location: ~~1A SEPERATE OFFICES~~						Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
98	28A	Material: GREY CAULKING Location: FRONT ENTRANCE WINDOWS	0	GY	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
99	28B	Material: GREY CAULKING Location: FRONT ENTRANCE WINDOWS	0	GY	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
300	28C	Material: GREY CAULKING Location: FRONT ENTRANCE WINDOWS	0	GY	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
01	29A	Material: DARK CAULKING Location: FRONT ENTRANCE WINDOWS	0	BR	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
02	29B	Material: DARK CAULKING Location: FRONT ENTRANCE WINDOWS	0	BR	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
03	29C	Material: DARK CAULKING Location: FRONT ENTRANCE WINDOWS	0	BR	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
04	30A	Material: ORANGE CAULKING Location: TV STUDIO EXT.	0	GY	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
05	30B	Material: ORANGE CAULKING Location: TV STUDIO EXT.	0	GY	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
06	30C	Material: ORANGE CAULKING Location: TV STUDIO EXT.	0	GY	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
07	31A	Material: BLACK CAULKING Location: ALONG AIR INTAKES	0	WH	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite	2	W	II	+	L	N	1.113	1.110							98 ~~100~~

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous	
08	31B	Material: BLACK CAULKING Location: ALONG AIR INTAKES						Chrysotile																DNA
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																
09	31C	Material: BLACK CAULKING Location: ALONG AIR INTAKES						Chrysotile																DNA
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																
10	32A ~~33A~~	Material: WHITE CAULKING Location: INTAKE DOORS + GRANITE PANELS	0	WH	Y	R	N	Chrysotile															100	
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																
11	32B	Material: WHITE CAULKING. Location: INTAKE DOORS + GRANITE PANELS	0	WH	Y	R	N	Chrysotile	TR	W	LL	+	L	N	1.03	1.00							100	
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																
12	32C	Material: WHITE CAULKING. Location: INTAKE DOORS + GRANITE PANELS	0	WH	Y	R	N	Chrysotile	2	W	LL	+	L	N	1.03	1.00							98	
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
13	33A	Material: BLACK CAULKING Location: WOOD WINDOWS	O	BR	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
14	33B	Material: BLACK CAULKING Location: WOOD WINDOWS	O	BR	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
15	33C	Material: BLACK CAULKING Location: WOOD WINDOWS	O	BR	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
16	34A	Material: RED CAULKING Location: WOOD WINDOWS	O	BR	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite									I TR						100
17	34B	Material: RED CAULKING Location: WOOD WINDOWS	O	BR	Y	R	N	Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite									I TR						100

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wood	Cellouse	Hair	Synthetic	Other	Non-Fibrous
37818	34C	Material: RED CAULKING						Chrysotile															
								Amosite															
								Crocidolite															
		Location: WOOD WINDOWS						Tremolite															
			0	BR	Y	R	N	Anthophylite															
								Actinolite									TR						100
		Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location						Tremolite															
								Anthophylite															
								Actinolite															
		Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location						Tremolite															
								Anthophylite															
								Actinolite															
		Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location						Tremolite															
								Anthophylite															
								Actinolite															
		Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location						Tremolite															
								Anthophylite															
								Actinolite															

00 50 00 – CONTRACTING FORMS

PART 1 - GENERAL

1.1 COPYRIGHT

A. Contractor is responsible for obtaining a valid license to use all copyrighted documents specified or included in the Project Manual.

1.2 AGREEMENT AND CONDITIONS OF THE CONTRACT

A. See Section 00 5200 for the Agreement form to be executed.

B. See Section 00 7200 for the General Conditions.

1.3 FORMS

A. Use the following forms for the specified purposes unless otherwise indicated elsewhere in the Contract Documents.

B. Bond Forms:

1. Performance Bond and Payment Bond Forms: AIA A312

C. Release of Lien:

1. Release of Liens Form: AIA G706A

D. Insurance certificate, supplementary attachment:

1. ACORD Certificate of Insurance Form: AIA G715

1.4 REFERENCE STANDARDS

A. AIA G706A – Release of Liens: 1994.

B. AIA A312 - Performance Bond: 2010 and Payment Bond: 2010.

C. AIA G715 – ACORD Certificate of Insurance: 1991.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

00 52 00 – AGREEMENT FORM

PART 1 - GENERAL

1.1 AGREEMENT FORM

A. The Agreement Form to be utilized on this project is AIA Document A101-2007 as amended, a copy of which follows this page.

B. Agreement made as of the date of issue of the Purchase Order for this Work.

C. This Agreement is entered into as of the date of the applicable Purchase Order and is assumed as executed once the Purchase Order is issued.

END OF SECTION

AIA® Document A101™ – 2007

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

***AGREEMENT** made as of _____. (Date of issuance of Owner's Purchase Order)*

BETWEEN the Owner:

The State of Rhode Island, acting by and through the Department of Administration
Division of Purchases, on behalf of the User Agency
One Capitol Hill, Second Floor
Providence, Rhode Island 02908-5855
(401) 574-8100 (telephone)
(401) 574-8387 (facsimile)
www.purchasing.ri.gov

and the Contractor:
(Name, legal status, address, telephone and facsimile numbers, and web address)

for the following Project: (Name, location, and detailed description)

The User Agency:
(Name of user agency, address, telephone and facsimile numbers, and web address)

The Design Agent:
(Name, legal status, address, telephone and facsimile numbers, and web address)

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201™–2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

Init.
/

AIA Document A101™ – 2007. Copyright © 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1967, 1974, 1977, 1987, 1991, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 11:44:15 on 08/03/2017 under Order No.0676948364 which expires on 05/16/2018, and is not for resale.
User Notes: (1483425078)

TABLE OF ARTICLES

1 THE CONTRACT DOCUMENTS

2 THE WORK OF THIS CONTRACT

3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

4 CONTRACT SUM

5 PAYMENTS

6 DISPUTE RESOLUTION

7 TERMINATION OR SUSPENSION

8 MISCELLANEOUS PROVISIONS

9 ENUMERATION OF CONTRACT DOCUMENTS

10 INSURANCE AND BONDS

11 BENEFITS OF AGREEMENT

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General Conditions, Supplementary ,if any, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others. No part of the Work shall be performed by Subcontractors without the Owner's prior written consent.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work
(Paragraphs deleted)
will be stipulated by the User Agency. The Contractor shall be authorized to commence the Work *only* upon the issuance of the Purchase Order by the Owner *and* an authorization from the User Agency.

§ 3.2 The Contract Time shall be measured from the date of commencement.

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than ( ) days from the date of commencement, or as follows:
(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

AIA Document A101™ – 2007. Copyright © 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1967, 1974, 1977, 1987, 1991, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 11:44:15 on 08/03/2017 under Order No.0676948364 which expires on 05/16/2018, and is not for resale.
User Notes: (1483425078)

Portion of Work **Substantial Completion Date**

, subject to adjustments of this Contract Time as provided in the Contract Documents.
(Paragraphs deleted)
§ 3.4 The Contractor and the Contractor's surety shall be liable for and shall pay the Owner the sums stipulated herein as liquidated damages, and not as penalty, for each calendar day of delay until the Work is substantially complete: _____($____) Dollars.

§ 3.5 The Owner shall not be liable to the Contractor or any Subcontractor for claims or damages of any nature caused by or arising out of any delays. The sole remedy against the Owner for delays shall be the allowance of additional time for completion of the Work.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be Dollars ($), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:
(State the numbers or other identification of accepted alternates

§ 4.3 Unit
(Paragraphs deleted)
prices are specified in the Bid Form.
§ 4.4 Allowances
(Paragraphs deleted)
are specified in the Bid Form
ARTICLE 5 PAYMENTS

§ 5.1 PROGRESS PAYMENTS

§ 5.1.1 Based upon Applications for Payment submitted to the Design Agent by the Contractor and Certificates for Payment issued by the Design Agent and approved by the Owner in writing, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents, and in accordance with the provisions of "Prompt Payment by Department of Administration," R.I. Gen. Laws §§ 42-11.1-1 et seq..

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month.

§ 5.1.3 The Owner shall make payment of the certified amount to the Contractor not later than the 30th working day following written approval by the Owner.

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Design Agent and Owner may require.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

AIA Document A101™ – 2007. Copyright © 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1967, 1974, 1977, 1987, 1991, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 11:44:15 on 08/03/2017 under Order No.0676948364 which expires on 05/16/2018, and is not for resale.
User Notes: (1483425078)

.1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of five percent (5 %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™–2007, General Conditions of the Contract for Construction;

.2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of five percent (5 %);

.3 Subtract the aggregate of previous payments made by the Owner; and

.4 Subtract amounts, if any, for which the Design Agent has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201–2007.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

.1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Design Agent shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and

.2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201–2007.

§ 5.1.8
(Paragraphs deleted)
Intentionally omitted.

§ 5.1.9 Except with the Owner's prior written approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 FINAL PAYMENT

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment;

.2 a final Certificate for Payment has been issued by the Design Agent and approved in writing by the Owner; and

.3 .the Contractor has submitted its final waiver of lien and final waivers of lien from all of its Subcontractors and suppliers in a form acceptable to the Owner; and

.4 the Contractor has submitted to the Owner all close-out documents, including without limitation, all as-built plans, warranties, manuals, and other materials set forth in the Contract Documents.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 working days after the issuance of the Design Agent's final Certificate for Payment and written approval by the Owner, and in accordance with the provisions of "Prompt Payment by Department of Administration," R.I. Gen. Laws §§ 42-11.1-1 et seq..

§ 5.3 OWNER'S RIGHTS

§ 5.3.1 The Owner shall have the right to deduct from any payments due to the Contractor the amount of any unpaid obligations owed to the State of Rhode Island by the Contractor, including without limitation, any and all unpaid taxes, and to pay the amount of such deductions to the Controller of the State of Rhode Island.

§ 5.3.2 The Owner shall have the right to deduct from any payments due to the Contractor the amount of any claim against the Contractor arising out of this Agreement or on account of any other reason.

AIA Document A101™ – 2007. Copyright © 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1967, 1974, 1977, 1987, 1991, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 11:44:15 on 08/03/2017 under Order No.0676948364 which expires on 05/16/2018, and is not for resale.
User Notes: (1483425078)

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 INITIAL DECISION MAKER

§ 6.1.1 The Purchasing Agent appointed pursuant to the provisions of the "State Purchases Act," R.I. Gen. Laws §§ 37-2-1 et seq., will serve as Initial Decision Maker in accordance with the provisions of the State Purchases Act, State of Rhode Island Procurement Regulations, and Section 15.2 of AIA Document A201–2007.
§ 6.1.2 For any Claim (as defined in Section 15.1.1 of AIA Document A201-2007) not resolved by the procedures set forth in § 6.1.1, the parties shall use their best efforts to resolve such Claim by mediation in Providence, Rhode Island. Any party may apply in writing to the Presiding Justice of the Providence County Superior Court, with a copy to the other parties, with a request for the court to appoint a mediator, and the costs of the mediator shall be borne equally by all of the parties. In the event that the parties are unable to resolve any and all Claims through mediation, then any party may pursue the legal remedies provided in § 6.2

§ 6.2 BINDING DISPUTE RESOLUTION

For any Claim not resolved by the Initial Decision Maker procedures set forth in § 6.1.1or the mediation procedures pursuant to § 6.1.2, the method of binding dispute resolution shall be
(Paragraphs deleted)
determined in accordance with the provisions of the State Purchases Act, R.I. Gen. Laws §§ 37-2-1 et seq., the "Public Works Arbitration Act," R.I. Gen. Laws §§ 37-16-1 et seq., the "Administrative Procedures Act," R.I. Gen. Laws §§ 45-35-1 et seq., and the State of Rhode Island Procurement Regulations.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007. The Contract may also be terminated by the Owner: (i) in the event of the unavailability of appropriated funds; (ii) in the absence of a determination of continued need; or (iii) as otherwise provided in the State of Rhode Island Procurement Regulations General Conditions of Purchase or other applicable law.

§ 7.2 The Work may be suspended by the Owner as provided in the State of Rhode Island Procurement Regulations General Conditions of Purchase and/or Article 14 of AIA Document A201–2007.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2
(Paragraphs deleted)
.No interest shall be due or payable on account of any payment due or unpaid except in accordance with the provisions of "Prompt Payment by Department of Administration," R.I. Gen. Laws §§ 42-11.1-1 et seq.

§ 8.3 State of Rhode Island Representatives.

§ 8.3.1 The Owner's representative:
(Name, title, address, and other information for the preferred methods of contact)

AIA Document A101™ – 2007. Copyright © 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1967, 1974, 1977, 1987, 1991, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 11:44:15 on 08/03/2017 under Order No.0676948364 which expires on 05/16/2018, and is not for resale.
User Notes: (1483425078)

§ 8.3.2 The User Agency's representative:
(Name, title, address, and other information for the preferred methods of contact)

§ 8.4 The Contractor's representative.
(Name, title, address, and other information for the preferred methods of contact)

§ 8.5 The Design Agent's representative.
(Name, title, address, and other information for the preferred methods of contact)

§ 8.6 Neither the Owner's, nor the Contractor's, nor the Design Agent's representative shall be changed without ten days written notice to the other parties.

§ 8.7 Other provisions.

§8.6.1 The Contractor represents and warrants to the Owner, in addition to any other representations and warranties of the Contractor elsewhere in the Contract Documents:

.1 The Contractor and its Subcontractors are each financially solvent, able to pay their debts as they mature, and possessed of sufficient working capital to perform their obligations under the Contract Documents.

.2 The Contractor and its Subcontractors are each able to furnish the materials, equipment, and labor required to complete the Project as required under the Contract Documents.

.3 The Contractor has visited the site of the Project, familiarized itself with the local and special conditions under which the Work is to be performed, and correlated its observations with the requirements of the Contract Documents.

.4 The Contractor possesses the requisite level of experience and expertise in the business administration, construction, and superintendence of projects of the size, complexity, and nature of the Project, and it will perform the Work with the care, skill, and diligence of such a contractor.

§8.6.2 The representations and warranties of the Contractor in the Contract Documents will survive the execution and delivery of this Agreement, any termination of the Agreement, and the final completion of the Work.

§8.6.3 Any Change Orders or other Modifications must be approved in writing by the Owner.

Init.
/

AIA Document A101™ – 2007. Copyright © 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1967, 1974, 1977, 1987, 1991, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 11:44:15 on 08/03/2017 under Order No.0676948364 which expires on 05/16/2018, and is not for resale.
User Notes: (1483425078)

§8.6.4 The Owner is the State of Rhode Island, acting by and through its Department of Administration Division of Purchases, and therefore, pursuant to the provisions of R.I. Gen. Laws § 34-28-31, mechanics liens may not be placed against the Project.

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A101–2007, Standard Form of Agreement Between Owner and Contractor.

§ 9.1.2 The General Conditions are AIA Document A201–2007, General Conditions of the Contract for Construction.

§ 9.1.3 The Supplementary and other Conditions of the Contract:
(Row deleted)

Document
State of Rhode Island
Procurement
Regulations

§ 9.1.4 The Specifications:
(Paragraphs deleted)
The Specifications are included in the Solicitation and are available on the Division of Purchases website at www.purchasing.ri.gov.

§ 9.1.5 The Drawings:
(Paragraphs deleted)
The Drawings are included in the Solicitation and are available on the Division of Purchases website at www.purchasing.ri.gov.

§ 9.1.6 The
(Paragraphs deleted)
Addenda issued pursuant to the Solicitation are available on the Division of Purchases website at www.purchasing.ri.gov

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents:

.1
(Paragraphs deleted)
The Solicitation issued by the Owner, including without limitation, the Invitation to Bid, the Instructions to Bidders, the Specifications and Drawings, any Addenda, and the Bid Checklist (with applicable forms)

.2 The Bid Proposal, including without limitation, the Bid Form and the Bidder Certification Cover Form

3. The Purchase Order issued by the Owner.

§ 9.1.8 This Agreement and the Contract Documents are subject to, and governed by, the laws of the State of Rhode

AIA Document A101™ – 2007. Copyright © 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1967, 1974, 1977, 1987, 1991, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 11:44:15 on 08/03/2017 under Order No.0676948364 which expires on 05/16/2018, and is not for resale.
User Notes: (1483425078)

Island, including all procurement statutes and regulations (available at www.purchasing.ri.gov), and applicable federal and local law, all of which are incorporated into this Agreement by this reference.

§ 9.1.9 In the event of any conflict between the State of Rhode Island Procurement Regulations or any provision of the Rhode Island General Laws and the Supplementary and other Conditions of the Contract or other Contract Documents, the State of Rhode Island Procurement Regulations and the Rhode Island General Laws will control.

ARTICLE 10 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in the Solicitation and Article 11 of AIA Document A201–2007.

ARTICLE 11 BENEFITS OF AGREEMENT

§ 11.1 Third-party Beneficiary. The User Agency is a disclosed third-party beneficiary of this Agreement and shall have all of the rights and benefits to which such a party is entitled hereunder.

(Table deleted)

§ 11.2 Assignment. This Agreement shall be binding on the Contractor and its successors and assigns; provided, however, that the Contractor may not assign its rights nor delegate its responsibilities under this Agreement without the Owner's prior written consent.

This Agreement is dated as of the day and year first written above; provided, however, that this Agreement shall not become a binding contract until the Owner has issued a Purchase Order pursuant to § 3.1. The person signing for the Contractor below represents that he or she has been duly authorized to execute this Agreement on behalf of the Contractor.

THE STATE OF RHODE ISLAND, acting
by and through its Department of Administration
Division of Purchases

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
(Printed name and title)	*(Printed name and title)*

AIA Document A101™ – 2007. Copyright © 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1967, 1974, 1977, 1987, 1991, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 11:44:15 on 08/03/2017 under Order No.0676948364 which expires on 05/16/2018, and is not for resale.
User Notes: (1483425078)

00 65 19 – WAIVER OF LIEN FORM

RIC Document Waiver of Lien Form is included, following this page, as an integral part of the Contract documents. A copy with completed information must be submitted with the second and each succeeding Application for Payment.

RHODE ISLAND COLLEGE

Capital Projects Administration
600 Mount Pleasant Ave, Physical Plant, Providence, RI 02908

WAIVER OF LIEN FORM MATERIAL OR LABOR

Construction Project Title: _____

General Contractor: _____

Subcontractor/Supplier: _____

DUNS No.: _____

Application / Certificate for Payment No.: _____

Paid Through Date: _____

Schedule of Values Line Item No.: _____

Description of Work Heading: _____

Total Payments Received, Including Current Payment: _____

The undersigned Representative of the above Subcontractor/Supplier has been contracted by the above General Contractor to furnish materials, or labor, or both, as included in the approved Schedule of Values under the Line Item No. and Description of Work Heading indicated above, for the Construction Project listed above.

The undersigned acknowledges receipt of payment, under this Line Item No. and Description of Work Heading, and hereby waives and releases any and all lien, or claim or right to lien, on the Construction Project listed above, and premises, under the statutes of the State of Rhode Island, relating to Mechanics Liens, on account of materials, or labor, or both, furnished, or which may be furnished, by the undersigned to, or on account of, the above numbered Application and Certificate for Payment.

Dated at this _____day of_____, 20____

Company: _____

Signature: _____

Printed Name: _____

Title: _____

END OF ATTACHMENT

00 72 00 – GENERAL CONDITIONS

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

A. The General Conditions to be utilized on this project are AIA Document A201-2007 as amended, a copy of which follows this page.

END OF SECTION

AIA® Document A201™ – 2007

General Conditions of the Contract for Construction

for the following PROJECT:
(Name, location, and detailed description)

THE OWNER:

The State of Rhode Island, acting by and through the Department of Administration
Division of Purchases, on behalf of the User Agency
One Capitol Hill, Second Floor
Providence, Rhode Island 02908-5855
(401) 574-8100 (telephone)
(401 574-8387 (facsimile)
www.purchasing.ri.gov

THE USER AGENCY
(Name, legal status, address, telephone and facsimile numbers, and web address)
Rhode Island College
600 Mt Pleasant Avenue
Providence, RI 02908
Tel: (401) 456-9885Fax: (401) 456-8534
www.ric.edu

THE ARCHITECT:
(Name, legal status, address, telephone and facsimile numbers, and web address)

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Init.
/
AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 11:57:32 on 08/03/2017 under Order No.0676948364 which expires on 05/16/2018, and is not for resale.
User Notes:
(1731361122)

TABLE OF ARTICLES

1 GENERAL PROVISIONS

2 OWNER

3 CONTRACTOR

4 ARCHITECT

5 SUBCONTRACTORS

6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

7 CHANGES IN THE WORK

8 TIME

9 PAYMENTS AND COMPLETION

10 PROTECTION OF PERSONS AND PROPERTY

11 INSURANCE AND BONDS

12 UNCOVERING AND CORRECTION OF WORK

13 MISCELLANEOUS PROVISIONS

14 TERMINATION OR SUSPENSION OF THE CONTRACT

15 CLAIMS AND DISPUTES

Init. /

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 14:41:07 on 04/12/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (the Agreement) and consist of the Agreement (and the documents enumerated therein), Conditions of the Contract (General, Supplementary, if any, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Design Agent.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Design Agent or the Design Agent's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Design Agent or the Design Agent's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Design Agent shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Design Agent's duties.

§ 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill all of the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location, and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards, and workmanship for the Work, and performance of related services.

§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Design Agent and the Design Agent's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items and services necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; the Contractor shall perform all Work reasonably inferable from the Contract Documents as being necessary to produce the indicated results.

Init.

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

§ 1.2.2 Organization of the Specifications into divisions, sections, and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.2.4 In the event of any conflicts or discrepancies among the Contract Documents, the provisions of the Contract Documents will be interpreted in the following order of priority:

1. Modifications (if any).
2. The Purchase Order.
3. The Agreement.
4. The Solicitation., including any Addenda, and the Specifications and Drawings
5. The Supplementary Conditions (if any).
6. The General Conditions.
7. The Bid Proposal.

§ 1.2.5 In the event of any conflicts or discrepancies between the Contract Documents and the State of Rhode Island Procurement Regulations or any provision of the Rhode Island General Laws, the State of Rhode Island Procurement Regulations and the Rhode Island General Laws will control.

§ 1.2.6 In the event of any inconsistency between the Drawings and Specifications, the better quality or greater quantity of Work shall be provided.

§ 1.2.7 The Owner will be the final decision maker for any and all interpretations.

§ 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The Owner and the User Agency shall have a perpetual license to utilize the Drawings, Specifications, and other documents, including electronic or digital documents, prepared by the Design Agent and the Design Agent's consultants, for the execution of the Project and shall have and retain all rights to use them and reproduce them for the production and maintenance of the Work described therein. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Design Agent's or Design Agent's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Design Agent and the Design Agent's consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner is the entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Design Agent does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 Intentionally omitted.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Intentionally omitted.

§ 2.2.2 The Contractor shall secure and pay for permits and fees, necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 If required for the Work in the discretion of the Owner, the Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of any information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Intentionally Omitted

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Design Agent's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Design Agent. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

Init.
/
AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes: (1783904586)

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Design Agent in the Design Agent's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Design Agent any errors, inconsistencies or omissions discovered by or made known to the Contractor or additional Drawings, Specifications, or instructions required to define the Work in greater detail to permit the proper progress of the Work as a request for information in such form as the Design Agent may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Design Agent and the Owner any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Design Agent or Owner may require.

§ 3.2.3.1 Omissions from the Drawings and Specifications of items obviously needed to perform the Work properly, such as attachments, bolts, hangers, and other fastening devices, shall not relieve the Contractor from the obligation to furnish and install such items.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Design Agent issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3 or 3.2.3.1, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Design Agent for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.2.4.1 The Contractor shall not make any changes without prior written authorization from the Design Agent and the Owner.

§ 3.2.5 The Owner is entitled to reimbursement from the Contractor for amounts paid to the Design Agent for evaluating and responding to the Contractor's requests for information that are not prepared in accordance with the Contract Documents or where the requested information is available to the Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or prior Project correspondence or documentation.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Design Agent and shall not proceed with that portion of the Work without further written instructions from the Design Agent. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work. Whenever the Contractor has an obligation to provide labor and materials under this Agreement, the Contractor, at a minimum, shall provide the labor for, and furnish and install and place in operation all items, including without limitation, all proper connections.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Design Agent in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Design Agent and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 WARRANTY

The Contractor warrants to the Owner and Design Agent that materials and equipment furnished under the Contract will be of first quality, prime manufacture, and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements, including substitutions not properly authorized, may be considered defective and, unless a longer period is required elsewhere in the Contract Documents, will be repaired and/or replaced, at the option of the Owner, for a period of one year following Final Completion of the Work. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor or its Subcontractors, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Design Agent, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.6 TAXES

§ 3.6.1 The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.6.2 The State of Rhode Island is exempt from payment of any federal or state excise, transportation, or sales tax. The Rhode Island Department of Administration Division of Purchases will furnish Exemption Certificates upon request.

§ 3.6.3 Pursuant to R.I. Gen. Laws § 44-1-6, the Owner shall withhold payment from the Contractor if the Contractor does not maintain a regular place of business in Rhode Island in the amount of three (3%) percent of the Contract Sum until thirty (30) days after Final Completion and compliance by the Contractor with the requirements of such section.

Init.
/
AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:
(1783904586)

§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections required by the Rhode Island State Building Code necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded. The Contractor shall be responsible for obtaining the Certificate of Occupancy from the appropriate governmental authorities.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 The Contractor shall promptly notify the Design Agent and the Owner if the Contractor becomes aware that the Contract Documents are not in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities. If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions. If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Design Agent before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Design Agent will promptly investigate such conditions and, if the Design Agent determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Design Agent determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Design Agent shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Design Agent's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Design Agent. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Design Agent the name and qualifications of a proposed superintendent. The Design Agent may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Design Agent has reasonable objection to the proposed superintendent or (2) that the Design Agent requires additional time to review. Failure of the Design Agent to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Design Agent has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, within 20 days after the issuance of the Purchase Order, shall prepare and submit for the Owner's and Design Agent's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals, not less frequently than monthly, as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work. The Contractor shall certify on the initial schedule and all revised schedules that they comply with the Contract Documents.

§ 3.10.2 The Contractor shall prepare a submittal schedule, within 20 days after the issuance of the Purchase Order, and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Design Agent's approval. The Design Agent's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Design Agent reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Design Agent.

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Design Agent and shall be delivered to the Design Agent for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Design Agent is subject to the limitations of Section 4.2.7. Informational submittals upon which the Design Agent is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Design Agent without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Design Agent Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Design Agent or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Design Agent that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Design Agent.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Design Agent's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Design Agent in writing of such deviation at the time of submittal and (1) the Design Agent has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Design Agent's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Design Agent on previous submittals. In the absence of such written notice, the Design Agent's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Design Agent will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Design Agent. The Owner and the Design Agent shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Design Agent have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Design Agent will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

§ 3.12.11 The Owner shall be entitled to reimbursement from the Contractor for amounts paid to the Design Agent for evaluation of resubmittals.

§ 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and any restrictions imposed by the User Agency or the Owner, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Design Agent access to the Work in preparation and progress wherever located.

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Design Agent harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Design Agent. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Design Agent and the Owner.

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, the State of Rhode Island,, and each executive, legislative, judicial, regulatory, or administrative body of the state, or any political subdivision thereof, including without limitation, any department, division, agency, commission, board, office, bureau, committee, authority, educational institution, school, water, or fire district, or other agency of Rhode Island state or local government that exercises governmental functions, any other governmental authority, and any quasi-public corporation and/or body corporate and politic, their elected or appointed officials, members, employees, and agents , Design Agent, Design Agent's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees and costs of arbitration and/or litigation, arising out of or resulting from performance of the Work, and/or the obligations of the Contractor under the Contract Documents, but only to the extent caused by the acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

Init.

/

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 DESIGN AGENT

§ 4.1 GENERAL

§ 4.1.1 The Design Agent is the person lawfully licensed to practice his or her profession in the State of Rhode Island or an entity lawfully practicing its profession in the State of Rhode Island and identified in the Contract Documents as the Design Agent. The term "Design Agent" means the Design Agent or the Design Agent's authorized representative. .

§ 4.1.2 Duties, responsibilities and limitations of authority of the Design Agent as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Design Agent. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Design Agent is terminated, the Owner shall employ a successor design agent as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Design Agent.

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Design Agent will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction through the date the Design Agent issues the final Certificate for Payment and continuing until the expiration of the warranty period in § 3.5. The Design Agent will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Design Agent will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Design Agent will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Design Agent will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.2.1 The Owner is entitled to reimbursement from the Contractor for amounts paid to the Design Agent for site visits made necessary by the fault of the Contractor or by defects and deficiencies in the Work.

§ 4.2.3 On the basis of the site visits, the Design Agent will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Design Agent will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Design Agent will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Design Agent about matters arising out of or relating to the Contract. Communications by and with the Design Agent's consultants shall be through the Design Agent. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

§ **4.2.5** Based on the Design Agent's evaluations of the Contractor's Applications for Payment, the Design Agent will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ **4.2.6** The Design Agent has authority to reject Work that does not conform to the Contract Documents. Whenever the Design Agent considers it necessary or advisable, the Design Agent will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Design Agent nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Design Agent to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ **4.2.7** The Design Agent will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Design Agent's action will be taken in accordance with the submittal schedule approved by the Design Agent or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Design Agent's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Design Agent's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Design Agent's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Design Agent, of any construction means, methods, techniques, sequences or procedures. The Design Agent's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ **4.2.8** The Design Agent will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Design Agent will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ **4.2.9** The Design Agent will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Paymentpursuant to Section 9.10.

§ **4.2.10** If the Owner and Design Agent agree, the Design Agent will provide one or more project representatives to assist in carrying out the Design Agent's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ **4.2.11** The Design Agent will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Design Agent's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ **4.2.12** Interpretations and decisions of the Design Agent will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Design Agent will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ **4.2.13** The Design Agent's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ **4.2.14** The Design Agent will review and respond to requests for information about the Contract Documents. The Design Agent's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Design Agent will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Design Agent the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Design Agent may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Design Agent has reasonable objection to any such proposed person or entity or (2) that the Design Agent requires additional time for review.Design Agent

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Design Agent has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Design Agent has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Design Agent has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Design Agent makes reasonable objection to such substitution.

§ 5.2.5 MANUFACTURERS AND FABRICATORS

§ 5.2.5.1 Not later than 10 days after the date of commencement of the Work, the Contractor shall furnish in writing to the Owner through the Design Agent the names of the manufacturers or fabricators for certain products, equipment, and systems identified in the Specifications and, where applicable, the name of the installing Subcontractor. The Design Agent may reply within 14 days to the Contractor in writing, stating: (i) whether the Owner or the Design Agent has reasonable objection to any such proposed person manufacturer or fabricator; or (ii) whether the Design Agent requires additional time to review.

§ 5.2.5.2 The Contractor shall not contract with a proposed manufacturer, fabricator, or Subcontractor to whom the Owner or Design Agent has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.5.3 If the Owner or Design Agent has an objection to a manufacturer, fabricator, or Subcontractor proposed by the Contractor, the Contractor shall propose another to whom the Owner or Design Agent has no objection.

§ 5.2.5.4 The Contractor shall not substitute a manufacturer, fabricator, or Subcontractor previously selected if the Owner or Design Agent makes reasonable objection to such substitution.

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

§ 5.3 SUBCONTRACTUAL RELATIONS

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Design Agent. Upon the request of the User Agency and/or the Owner, the Contractor shall provide the User Agency and /or the Owner with copies of each subcontract agreement. Each subcontract agreement shall preserve and protect the rights of the Owner and Design Agent under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

(Paragraph deleted)

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

§ 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Design Agent apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Design Agent will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Design Agent; a Construction Change Directive requires agreement by the Owner and Design Agent and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Design Agent alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.1.4 Mark up on the change order shall be 10% for self-performed work and 6% on subcontracted work. Subcontractors shall receive no more than 10% on self-performed work and 6% on sub-subcontracted work.

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Design Agent and signed by the Owner, Contractor and Design Agent stating their agreement upon all of the following:

- **.1** The change in the Work;
- **.2** The amount of the adjustment, if any, in the Contract Sum; and
- **.3** The extent of the adjustment, if any, in the Contract Time.

§ 7.2.2 Subsequent to the approval of a Change Order as provided in § 7.1.2, whether such Change Order changes the Contract Sum or Contract Time or both, no additional claim related to such Change Order will be considered by the Owner. Any change, once incorporated into a Change Order, is all inclusive, and includes all factors that could have been considered at the time of the Change Order such as Project impact or schedule "ripple" effect..

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Design Agent and signed by the Owner and Design Agent, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.7.

§ 7.3.4 Intentionally omitted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Design Agent of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Design Agent shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an allowance for overhead and profit in accordance with the Clauses 7.3.11.1 through 7.3.11.7 below. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Design Agent may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of delivery;
- .3 Rental costs of machinery and equipment;
- .4 Costs of premiums for all bonds and insurance, permit fees related to the Work.

(Paragraph deleted)

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Design Agent. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Design Agent will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Design Agent determines, in the Design Agent's professional judgment, to be reasonably justified. The Design Agent's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

Init.
/
AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Design Agent concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Design Agent will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.3.11 The allowance for the combined overhead and profit is to be as listed below.

.1 For the Contractor, for Work performed by the Contractor's own forces, 10 percent of the cost.

.2 For the Contractor, for Work performed by the Contractor's Subcontractor, 6 percent of the amount due the Subcontractor.

.3 For each Subcontractor or Sub-subcontractor involved, for Work performed by that Subcontractor's or subcontractor's own forces, 10 percent of the cost.

.4 For each Subcontractor, for Work performed by the Subcontractor's Sub-subcontractors, 6 percent of the amount due the Sub-subcontractor.

.5 Overhead and profit is to include the Contractor's project management and supervisory costs, all administrative expenses and personnel, change estimate preparation, mobilization, setup & breakdown, meetings, all safety related costs, cleanup costs and storage costs pertaining to the changes in the work.

.6 The fee increase to any permit required by the additional work is allowed to be added to the Change Order costs. However, the Contractor is required to submit proof that the additional fee was paid to the presiding authority.

.7 In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also.

§ 7.4 MINOR CHANGES IN THE WORK

The Design Agent has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Design Agent and shall be binding on the Owner and Contractor.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established pursuant to § 3.1 of the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Design Agent in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean working day, excluding weekends and legal holidays.

§ 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Design Agent, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

causes beyond the Contractor's control,, then the Contract Time shall be extended by Change Order for such reasonable time as the Design Agent may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.2 SCHEDULE OF VALUES

Within 20 days of the issuance of the Purchase Order, and promptly if revision is necessary from time to time as a result of a Change Order,, the Contractor shall submit to the Design Agent and the Owner, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Design Agent and Owner may require. This schedule, if and when approved by the Design Agent and the Owner in writing, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least 10 days before the date established for each progress payment, the Contractor shall submit to the Design Agent and the Owner for approval an itemized Application for Payment prepared in accordance with the schedule of values for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Design Agent may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 All Applications for Payment for Change Orders must be accompanied by a Notice of Change in Purchase Order issued by the Owner, and if directed by the Owner, by the User Agency.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.1.3 The form of Application for Payment shall be AIA Document G702, Application and Certification for Payment, supported by AIA Document G702A, Continuation Sheet.

§ 9.3.1.4 Until final payment, the Owner shall pay ninety-five (95%) percent of the amount due the Contract on account of progress payments.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work. The Contractor shall immediately satisfy any lien, claim, or

Init.
/
AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

encumbrance against the site where the Project is located and indemnify the Owner from and against all resulting costs and expenses, including without limitation, attorneys' fees

§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Design Agent will, within 7 days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Design Agent determines is properly due, or notify the Contractor and Owner in writing of the Design Agent's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Design Agent to the Owner, based on the Design Agent's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Design Agent's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Design Agent. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Design Agent has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.4.3 The Contractor must submit all product literature, and material and color samples with each Application for Payment, or as otherwise required by the Owner.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Design Agent will withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Design Agent's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Design Agent is unable to certify payment in the amount of the Application, the Design Agent will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Design Agent cannot agree on a revised amount, the Design Agent will promptly issue a Certificate for Payment for the amount for which the Design Agent is able to make such representations to the Owner. The Design Agent may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Design Agent's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of:

- .1 defective Work not remedied;
- .2 third-party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials, or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- .7 failure to carry out the Work in accordance with the Contract Documents; or.
- .8 any other failure to comply with the obligations of the Contractor under the Contract Documents.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 If the Design Agent withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

Owner makes payments by joint check, the Owner shall notify the Design Agent and the Design Agent will reflect such payment on the next Certificate for Payment.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Design Agent has issued a Certificate for Payment and the Owner has approved the Certificate for Payment in writing, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Design Agent.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than 7 days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Design Agent will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Design Agent and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. The Owner shall have the right to withhold payment(s) to the Contractor in the event that any Subcontractors or material and equipment suppliers have not been properly paid. Neither the Owner nor Design Agent shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 FAILURE OF PAYMENT

If the Design Agent does not issue a Certificate for Payment, through no fault of the Contractor, within 7 days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within 7 days after the date established in the Contract Documents the amount certified by the Design Agent or awarded by binding dispute resolution, then the Contractor may, upon 7 additional days' written notice to the Owner and Design Agent, make a claim for payment as provided under the provisions of "Prompt Payment by Department of Administration," R.I. Gen. Laws §§ 42-11.1-1 et seq.

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Design Agent a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

§ 9.8.3 Upon receipt of the Contractor's list, the Design Agent will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Design Agent's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Design Agent. In such case, the Contractor shall then submit a request for another inspection by the Design Agent to determine Substantial Completion. The Design Agent will perform no more than two (2) inspections to determine whether the Work or a designated portion thereof has attained Substantial Completion in accordance with the Contract Documents. The Owner is entitled to reimbursement from the Contractor for amounts paid to the Design Agent for any additional inspections.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Design Agent will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Design Agent as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Design Agent.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Design Agent shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Design Agent will promptly make such inspection and, when the Design Agent finds the Work acceptable under the Contract Documents and the Contract fully performed, the Design Agent will promptly issue a final Certificate for Payment stating that to the best of the Design Agent's knowledge, information and belief, and on the basis of the Design Agent's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Design Agent's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled. The Design Agent will perform no more than two (2) inspections to determine whether the Work or a designated portion thereof has attained Final Completion in accordance with the Contract Documents. The Owner is entitled to reimbursement from the Contractor for amounts paid to the Design Agent for any additional inspections.

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Design Agent (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Design Agent so confirms, the Owner shall, upon application by the Contractor and certification by the Design Agent, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Design Agent prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 claims permitted under the State of Rhode Island Department of Administration Division of Purchases General Conditions of Purchase.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

§ 9.11 The Contractor and the Contractor's surety shall be liable for and shall pay the Owner as liquidated damages the sums specified in the Solicitation and Bid Form.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

§ **10.2.2** The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ **10.2.3** The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ **10.2.4** When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel and in consultation with the appropriate governmental authorities..

§ **10.2.4.1** When use or storage of explosives, or other hazardous materials, substances or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall give the User Agency and the Owner reasonable advance notice.

§ **10.2.4.2** If the Contract Documents require the Contractor to handle materials or substances that under certain circumstances may be designated as hazardous, the Contractor shall handle such materials in an appropriate manner.

§ **10.2.5** The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Design Agent or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ **10.2.6** The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Design Agent.

§ **10.2.7** The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY
If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 HAZARDOUS MATERIALS
§ **10.3.1** The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Design Agent in writing.

§ **10.3.2** Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Design Agent the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Design Agent will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Design Agent has

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Design Agent have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 To the extent permitted by the provisions of R.I. Gen. Laws §§ 9-31-1 *et seq.*, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Design Agent, Design Agent's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.
§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 Intentionally omitted.

§ 10.4 EMERGENCIES
In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE
§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as is specified in the Solicitation and as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.1.2 The Contractor's liability insurance shall include all major coverages and be on a comprehensive general liability basis.

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

§ **11.1.2** The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ **11.1.3** Certificates of insurance as specified in the Solicitation and as otherwise acceptable to the Owner shall be filed with the Owner and the User Agency prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner and the User Agency. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ **11.1.4** The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the User Agency, and their elected and appointed officials, members, employees, and agents, the Design Agent and the Design Agent's consultants as additional insureds for claims caused in whole or in part by the Contractor's acts or omissions during the Contractor's operations; and (2) the Owner, the User Agency, and their elected and appointed officials, members, employees, and agents, as additional insureds for claims caused in whole or in part by the Contractor's acts or omissions during the Contractor's completed operations.

§ **11.1.5** The Contractor shall be responsible for the prompt payment to the Owner of any deductible amounts under any insurance policies required under the Contract Documents for claims made pursuant to such policies.

§ 11.2 OWNER'S LIABILITY INSURANCE The Contractor shall furnish the Owner and the User Agency, through the Design Agent, an insurance certificate providing Owner's Protective Liability extended to include the interests of the Design Agent, and to protect the Owner, User Agency, and Design Agent from any liability which might be incurred against any of them as a result of any operation of the Contractor or Subcontractors or their employees or anyone for whom either the Contractor or Subcontractors are responsible. Such insurance shall be written for the same limits as the Contractor's comprehensive general liability insurance and shall include the same coverage.

§ 11.3 PROPERTY INSURANCE

§ **11.3.1** The Contractor shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the User Agency, the Contractor, Subcontractors and Sub-subcontractors in the Project. If the Owner and/or the User Agency incur any damages by failure of the Contractor to maintain such insurance, then the Contractor shall bear all reasonable cost resulting from such failure.

§ **11.3.1.1** Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Design Agent's and Contractor's services and expenses required as a result of such insured loss.

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

§ 11.3.1.2 Intentionally omitted.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 Intentionally omitted.

(Paragraphs deleted)
§ 11.3.3Intentionally omitted.

§ 11.3.4 Intentionally omitted.
§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Contractor shall file with the Owner a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Owner and the User Agency.

§ 11.3.7 WAIVERS OF SUBROGATION
The Contractor waives all rights against the Owner and the User Agency and any of their subcontractors, sub-subcontractors, agents and employees, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged. **§ 11.3.8** A loss insured under this property insurance shall be adjusted by the Contractor as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Contractor's duties. The cost of required bonds shall be charged against

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

proceeds received as fiduciary. The Contractor shall deposit in a separate account proceeds so received, which the Contractor shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Contractor as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Contractor's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Contractor as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in the Solicitation.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Design Agent's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Design Agent, be uncovered for the Design Agent's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Design Agent has not specifically requested to examine prior to its being covered, the Design Agent may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Design Agent or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Design Agent's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Design Agent, the Owner may correct it in accordance with Section 2.4.

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.2.4 Upon request by the Owner and prior to the expiration of one year from the date of Substantial Completion, the Design Agent will conduct and the Contractor shall attend a meeting with the Owner to review the facility operations and performance.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the law of the State of Rhode Island

§ 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to any executive, legislative, judicial, regulatory, or administrative body of the state, or any political subdivision thereof, including without limitation, any department, division, agency, commission, board, office, bureau, authority, school, water, or fire district, or other agency of Rhode Island state or local government that exercises governmental functions, any other governmental authority, and any quasi-public corporation and/or body corporate and politic. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice, or when received, if manually delivered or transmitted by electronic mail or facsimile to the last such address known to the party giving notice.

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Design Agent or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Design Agent timely notice of when and where tests and inspections are to be made so that the Design Agent may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Design Agent, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Design Agent will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Design Agent of when and where tests and inspections are to be made so that the Design Agent may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Design Agent's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Design Agent.

§ 13.5.5 If the Design Agent is to observe tests, inspections or approvals required by the Contract Documents, the Design Agent will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 INTEREST

No interest shall be due or payable on account of any payment due or unpaid under the Contract Documents except in accordance with the provisions of "Prompt Payment by Department of Administration," R.I. Gen. Laws §§ 42-11.1-1 *et seq.*

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

.1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;

.2 An act of government, such as a declaration of national emergency that requires all Work to be stopped; or

.3 Because the Design Agent has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1

(Paragraph deleted)

§ 14.1.Intentionally omitted.

§ 14.1.3 If one of the reasons described in Section 14.1.1 exists, the Contractor may, upon seven days' written notice to the Owner and Design Agent, terminate the Contract and recover from the Owner payment for Work executed.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Design Agent, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

.1 refuses or fails to supply enough properly skilled workers or proper materials;

.2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;

.3 disregards or fails to comply with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or

.4 otherwise is guilty of a breach of or fails to comply with a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

.1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

.2 Accept assignment of subcontracts pursuant to Section 5.4; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Design Agent's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

Init.
/
AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:
(1783904586)

§ 14.3.2 Intentionally omitted. The Owner shall not be liable to the Contractor or any Subcontractor for claims or damages of any nature caused by or arising out of any delays. The sole remedy against the Owner for delays shall be the allowance of additional time for completion of the Work.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Design Agent. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Design Agent will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.5.3 Claims for increase in the Contract Time shall set forth in detail the circumstances that form the basis for the Claim, the date upon which each cause of delay began to affect the progress of the Work, the date upon which

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

each cause of delay ceased to affect the progress of the Work and the number of days' increase in the Contract Time claimed as a consequence of each such cause of delay. The Contractor shall provide such supporting documentation as the Owner may require including, where appropriate, a revised construction schedule indicating all the activities affected by the circumstances forming the basis of the Claim.

§ 15.1.5.4 The Contractor shall not be entitled to a separate increase in the Contract Time for each one of the number of causes of delay which may have concurrent or interrelated effects on the progress of the Work, or for concurrent delays due to the fault of the Contractor.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor waives Claims against the Owner for consequential damages arising out of or relating to this Contract. This waiver includes

(Paragraphs deleted)

damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work. This wiver is applicable, without limitation, to all consequential damages due to the Owner's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims shall be referred to the Initial Decision Maker for initial decision. The Purchasing Agent appointed pursuant to the provisions of the "State Purchases Act," R.I. Gen. Laws § 37-2-1 et seq., will serve as the Initial Decision Maker in accordance with the provisions of the State Purchases Act, State of Rhode Island Procurement Regulations, and this Section 15.2.An initial decision shall be required as a condition precedent to mediation and binding dispute resolution of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Design Agent of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may apply for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, apply in writing to the Presiding Justice of the Providence County Superior Court, with a copy to the other parties, with a request for the court to appoint a mediator, and the costs of the mediator shall be borne equally by all of the parties.
§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 Intentionally omitted.

§ 15.3 MEDIATION
§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which shall be administered by the Presiding Justice of the Providence County Superior Court. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the court. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Intentionally Omitted.
(Paragraphs deleted)
§ 15.4.4 CONSOLIDATION OR JOINDER
§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.

§ 16 COMPLIANCE WITH APPLICABLE LAW

The Contractor and its Subcontractors shall comply with all applicable federal, state, and local laws.

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 15:34:05 on 04/07/2017 under Order No.1334992793_1 which expires on 05/09/2017, and is not for resale.
User Notes:

(1783904586)

00 73 01 – HOT WORK PROCEDURE

PART 1 - GENERAL

The following procedure applies to the Contract for Construction and is a part of the Contract Documents:

1.1 PURPOSE

To establish regulations and rules for the safe uses of open flames and spark producing equipment in state owned or leased facilities. Applicable regulations pertinent to this guide include OSHA 29 CFR 1910.252-.255 and NFPA 51B, and the insurers Hot Work Requirements.

1.2 POLICY

A. Fire Protection

1. Contractors and employees shall comply with the regulations set forth in this policy to ensure the safe use of open flames and spark producing equipment.
2. When performing work within a state facility with a cutting torch or when using welding, brazing or soldering equipment a hot work permit is required to be filled out and precautions followed. The Hot Work Permits are available (free of charge) directly from the state's property insurer.
3. Prior to the start of the hot work operation, the contractor is to coordinate deactivation of related of the alarm system necessary to prevent false alarms prior to the start of the hot work operation with the Owner.
4. Upon completion of the project the fire alarm system will be restored to operational status.
5. During the hot work operation the following precautions will be followed:
   a. A fire watch will be required by the individual responsible for authorizing the hot work operation.
   b. Welding leads and burning hoses are to be kept out of walkways as much as possible
   c. Inspect all leads, grounds, clamps, torches and cylinders before use. Be sure all fittings, couplings and connections are tight.
   d. In gas welding and cutting, mixtures of fuel gas and air or oxygen must not be permitted except prior to consumption.
   e. Only approved apparatus must be used, and portable cylinders of compressed gas must be properly secured to prevent upset.
   f. Use proper ventilation in the work area.
   g. All exposed combustible and flammable material within 35 feet of the point of operation should be removed where possible. Otherwise, protect with Approved welding pads, blankets and curtains, fire resistive tarpaulins or metal shields.
   h. Cutting or welding on pipes or other metal in contact with combustible walls, partitions, ceilings or roofs shall not be undertaken if the work is close enough to cause ignition by conduction.
   i. All hoses and leads will be inspected frequently and will be replaced as necessary.
   j. A cutting or welding prohibition will be required whenever an area contains or may contain flammable/explosive vapors. The prohibition can only be lifted when the area has been purged and cleaned and the area has been tested and shown to be free of a flammable/explosive mix.

1.3 RESPONSIBILITY

A. Supervisor

1. Supervisor will train their employees in the potential fire hazards associated with hot work.
2. Supervisor will initiate a hot work permit prior to assigning work.
3. The supervisor will obtain confirmation that:
   a. Available sprinklers, hose streams and extinguishers are in service and operable. 2.) Hot work equipment is in good working condition.
   b. The following requirements within 35 feet of hot work shall be adhered to: a.) Flammable liquid, dust, lint and oily deposits have been removed. b.) Explosive atmosphere has been eliminated.
   c. The floors have been swept clean.
   d. Combustible floors have been wet down, covered with damp sand or fire resistive sheets are in place.
   e. All exposed combustible and flammable material within 35 feet of the point of operation should be removed where possible. Otherwise, protect with FM Approved welding pads, blankets and curtains, fire resistive tarpaulins or metal shields.
   f. All wall and floor openings are covered.
   g. FM approved welding pads, blankets and curtains installed under and around work.
   h. Protect or shut down ducts and conveyors that might carry sparks to distant combustible material.
4. The supervisor is responsible for assuring that a 60 minute fire watch is maintained at the completion of all hot work assignments, that a hot work permit has been acquired for work involving open flames or spark producing tools and for assuring all fire prevention procedures and precautions are followed for protection of people and property including a fire watch, deactivation of the fire alarm.
5. The supervisor will require that the area be monitored periodically for three hours after the fire watch is completed.
6. The supervisor will confirm that employees are trained in use of fire extinguishers and hoses, and that the employees are familiar with emergency procedures in the event of a fire.
7. At least once while the permit is in effect, the area should be inspected by the individual responsible for authorizing, cutting or welding operations to ensure that it is a fire safe area. (See article 3 above for fire safe conditions.)
8. Proper personnel protective equipment including helmets, eye wear, face and hand shields applicable to the equipment used will be provided by the supervisor.
   a. The equipment will be maintained and fit tested by management.
9. Personal protective clothing consistent with OSHA standards will be worn.
10. Tarps or fire resistant coverings sufficient to cover combustible materials within 35 feet of the operation will be provided.

B. Employees

1. The employee shall be responsible to work in a safe manner and follow all safety precautions as trained by the supervisor.
2. The employee charged with performing the hot work will initiate part 2 of the hot work permit and verify that a 60 minute fire watch has been maintained.

3. Employees performing hot work will be required to either properly remove or cover combustible materials in the 35 foot area surrounding the hot work operation.

C. Fire Safety Officer

1. The state employee charged with maintaining or inspecting the fire alarm system will deactivate the system.
2. The area will be evaluated by this individual to identify fire hazards and provide required suppression equipment.
3. The fire safety officer will ensure that combustible materials within 35 feet of the hot work operation are properly tarped or moved a safe distance.
4. In addition, this officer will ensure that personnel in close proximity to this work area are properly protected against heat, sparks and slug.

D. Management

1. Maintain a log of hot work permits.
2. Provide safety training for supervisors.
3. Confirm that all contractors follow all requirements of this protocol.

HOT WORK PERMIT

STOP!

Avoid hot work or seek an alternative/safer method, if possible.

This *Hot Work Permit* is required for any temporary operation involving open flames or producing heat and/or spa
This includes, but is not limited to: brazing, cutting, grinding, soldering, torch-applied roofing and welding.

Part 1

Instructions

1. **Firesafety supervisor:**
   - **A.** Verify precautions listed at right (or do not proceed with the work).
   - **B.** Complete and retain Part 1. (**Part 1A** is for quality assurance documentation, if necessary.)
   - **C.** Issue **Part 2** to person performing hot work.

HOT WORK BY
☐ Employee
☐ Contractor _____

DATE	JOB NUMBER

LOCATION/BUILDING AND FLOOR

NATURE OF JOB

NAME (PRINT) AND SIGNATURE OF PERSON PERFORMING HOT WORK

I verify the above location has been examined, the precautions checked on the Required Precautions Checklist have been taken to prevent fire, and permission is authorized for this work.

NAME (PRINT) AND SIGNATURE OF FIRESAFETY SUPERVISOR/OPERATIONS SUPERVISOR

TIME STARTED: a.m. p.m. TIME FINISHED: a.m. p.m.

Permit Expires	DATE	TIME a.m. p.m.

Note: Emergency notification on back of form.
Use as appropriate for your facility.

To order additional hot work permits or other FM Global resources, order online 24 hours a day, seven days a week, at www.fmglobalcatalog.com.

FM Global

F2630 © January 2011 FM Global.
All rights reserved.

Required Precautions Checklist

- ☐ Control valves to water supply for sprinkler system are open
- ☐ Hose streams and extinguishers are in service/operable.
- ☐ Hot work equipment in good working condition.

Requirements within 35 ft. (11 m) of hot work

- ☐ Flammable liquid, dust, lint and oily deposits removed.
- ☐ Explosive atmosphere in area eliminated.
- ☐ Floors swept clean.
- ☐ Combustible floors wet down, covered with damp sand or fire-resistive sheets.
- ☐ Remove other combustible material where possible. Otherwise, protect with FM Approved welding pads, blanket and curtains, fire-resistive tarpaulins or metal shields.
- ☐ All wall and floor openings covered.
- ☐ FM Approved welding pads, blankets and curtains installed and around work.
- ☐ Protect or shut down ducts and conveyors that might carry s to distant combustible material.

Hot work on walls, ceilings or roofs

- ☐ Construction is noncombustible and without combustible cov or insulation.
- ☐ Combustible material on other side of walls, ceilings or roofs is

Hot work on enclosed equipment

- ☐ Enclosed equipment cleaned of all combustible material.
- ☐ Containers purged of flammable liquid/vapor.
- ☐ Pressurized vessels, piping and equipment removed from ser isolated and vented.

Fire watch/hot work area monitoring

- ☐ Fire watch will be provided during and for one (1) hour after including any break activity.
- ☐ Fire watch is supplied with suitable extinguishers, and where a charged small hose.
- ☐ Fire watch is trained in use of equipment and in sounding ala
- ☐ Fire watch may be required in adjoining areas, above and bel
- ☐ Monitor hot work area for up to an additional three (3) hours one (1) hour fire watch.

☐ **Other precautions taken:**

_____
_____
_____
_____

END OF SECTION

00 73 02 – MANAGING FIRE PROTECTION SYSTEM IMPAIRMENT

PART 1 - GENERAL

1.1 IMPLEMENTATION

A. The following management procedure applies to the Contract for Construction and is a part of the Contract Documents.

1.2 MANAGING FIRE PROTECTION SYSTEM IMPAIRMENT

A. Impairment to fire protection equipment is a situation in which the system is shut off, either in whole or in part. The impairment may be necessary to conduct scheduled maintenance of equipment or to make emergency repairs. Impairment may also be due to new construction. Normal system tests and inspections are not considered impairment.

B. Regardless of the reason, impairment results in the sprinkler system and/or fire alarm system being temporarily out of service, such a condition may result in severe property loss in the event of a fire. Locations protected by automatic sprinkler systems must have an impairment handling program to control situations when sprinkler systems must be shut down.

C. Whenever a sprinkler system has been impaired all hot work in the area of the impaired system should be prohibited.

D. A periodic fire watch should be established when either the sprinkler system or the fire alarm system is out of service.

E. The State's property insurance carrier recommends an impairment handling kit. The Red Tag Permit System consists of four key elements:
   1. A Red Tag Permit
   2. Fire Protection Equipment Decals
   3. Reusable Impairment Tag for Fire Service Connections
   4. Red Tag Permit System Wall Hanger

F. The Fire Protection Equipment Decals are to be affixed to fire protection equipment as a reminder that authorization is needed before any shut down can occur.

G. The Red Tag Permit System Wall Hanger contains pockets to keep other elements of the system organized and within reach; also the Hanger lists steps to be taken before, during and after impairment. The Wall Hanger also lists the contact to be notified of the impairment.

H. There is space on the notification tag for the phone numbers of the Fire department, Alarm Company, and the local Water Department as well.

I. An engineer and/or client service representative can advise you on how to proceed and follow up until protection has been restored. In addition this representative may be able to help minimize downtime, if possible, reduce fire exposure to the area, arrange for temporary protection and determine how to restore protection as quickly as possible.

J. For scheduled maintenance of fire alarm systems, vendors must as prescribed in Rhode Island Fire Codes notify the building owner 48 hours in advance of pending maintenance.

K. As part of base contract, the Contractor is required to provide a licensed electrician to oversee and perform the required temporary modifications to the fire alarm system during the impairment, including bypass control during fire sprinkler work. The College will not provide personnel for this purpose.

END OF SECTION

RHODE ISLAND COLLEGE

OFFICE OF CAPITAL PROJECTS | 600 MOUNT PLEASANT AVE, PHYSICAL PLANT, PROVIDENCE, RI 02908

FIRE SPRINKLER AND ALARM SYSTEM IMPAIRMENT NOTIFICATION FORM

To: RIC Office of Capital Projects

Date: _____

Start of Planned Impairment: _____

End of Planned Impairment: _____

Building occupied during impairment: Yes:___ No:____

Any hot work to be performed: Yes:___ No:____

Description of Work to be performed:

_____

_____

_____

_____

_____

_____

_____

_____

RIC Trade & Fire Alarm Safety Manager, David Benevides, can also be directly contacted at 401-456-4747.

Contractor supervisory personnel shall remain in the building for the entire duration of the impairment.

Name: _____

Company: _____

Phone: _____

RED TAG PERMIT

CONTROL NUMBER: 2151373

INDEX NUMBER:

PRECAUTIONS TAKEN (CHECK AS APPROPRIATE)

- ☐ Emergency Organization Notified
- ☐ Public Fire Department Notified
- ☐ Hazardous Operations Stopped
- ☐ Hot Work Prohibited
- ☐ Smoking Restricted
- ☐ Other _____
- ☐ Continuous Work Authorized
- ☐ Ongoing Patrol of Area
- ☐ Hydrant Connected to Sprinkler Riser
- ☐ Pipe Plugs on Hand
- ☐ Fire Hose Laid Out

CONTACT NAME

LOCATION (City, State/Province)

CONTACT PHONE NO.

CONTACT FAX NO.

CHECK IF
- ☐ SPRINKLER
- ☐ FIRE PUMP
- ☐ CO_2
- ☐ HALON
- ☐ OTHER

SPRINKLER VALVE LOCATION/NUMBER

AREA PROTECTED

REASON FOR IMPAIRMENT

PLANNED DATE/TIME TO BE CLOSED

PLANNED DATE/TIME TO BE OPEN

NAME/TITLE OF RESPONSIBLE PERSON

AUTHORIZED BY (NAME)

FIRE PROTECTION EQUIPMENT OPERATOR (NAME)

PART 1 INSTRUCTIONS

Permit Authorizer: Fill out using ballpoint pen, sign and issue permit as follows:

Phone Part 1 information, or fax this part, to the FM Global number listed on the Red Tag Permit Wall Kit.

Place Part 2 in center pocket of Wall Kit as visual reminder of impairment.

Issue Part 3 (Red Tag) to Fire Protection Equipment Operator to attach to impaired equipment.

FM Global

RED TAG PERMIT

Part 1 of 3

F2480 © FM Global 2010. (Rev. 01/2016). All rights reserved.

END OF ATTACHMENT

00 73 36 – PREVAILING WAGE RATES

The State of Rhode Island Department of Labor, Division of Professional Regulation General Decision Modification document is an integral part of the Bid Documents for use in fulfilling prevailing wage rate requirements. A copy is available linked to the web site of the State of Rhode Island Department of Administration, Division of Purchases. Contractors working on RI Prevailing Wage projects must adjust employee hourly rates every July 1 in accordance with updated Davis Bacon rates. These rates may be obtained at the following website:

www.wdol.gov/dba.aspx

The Division of Purchases Web Site Address is: http://www.purchasing.ri.gov/RIVIP/Info.asp

The link for the US Government prevailing wage tables is:
http://www.purchasing.ri.gov/bidinfo/geninfo/geninfo.aspx

Applicable Rhode Island labor laws may be found at: http://www.dlt.ri.gov/pw/

END OF SECTION

00 90 00 – ADDENDA AND MODIFICATIONS

PART 1 - GENERAL

A. As of the time of publication of this Project Manual, no Addenda had been issued.

B. Should Addenda be issued during the Bid Period, they will augment this Document and become a part of the Project Manual.

C. Such Addenda and Modifications when issued, with reference to the Project Manual, the General Conditions, Supplemental General Conditions, Drawings or Specifications, shall be inserted following this page and become integral parts of the Contract Documents.

END OF SECTION

01 10 00 – SUMMARY

PART 1 - GENERAL

1.1 PROJECT

A. The Project consists of the construction of the following types of work:

1. Electrical – Disconnect all effected equipment according to the plans, the General Contractor's demolition schedule and as coordinated with the RIC Project Manager. Connect all new equipment and controls.
2. Mechanical – Remove and replace rooftop fans, ductwork, intake/relief vents and the cooling tower according to the plans, the General Contractor's construction schedule and as coordinated with the RIC Project Manager. Clean, repair and undertake restoration activities for the air handling unit on the first floor (S-1) and the air handling unit on the 4th floor (MZAH-2) according to the plans, the General Contractor's construction schedule and as coordinated with the RIC Project Manager. Install and connect a new cooling tower according to the plans. Clean interior ductwork.
3. Structural – Provide new structural support for the cooling tower according to the plans.

1.2 CONTRACT DESCRIPTION

A. Contract Type: A single prime contract based on a Stipulated Price as described in Document 00 50 00 - Agreement.

1.3 DESCRIPTION OF WORK

A. There are no site or architectural modifications or other consultant packages.

1.4 SCHEDULE

A. Ordering of products, coordination and preparatory work is to commence within 7 days of receipt of Purchase Order.

B. Substantial completion is one hundred twenty five (125) calendar days from PO date. This is the date to which liquidated damages may apply and may only be adjusted as provided for in the Contract Documents. Contractor shall be responsible for completing the submittals required for issue of a Purchase Order in a timely manner. No extension will be granted for Purchasing delays.

C. Final completion is one hundred fifty (150) calendar days from PO date. Under no circumstances may final completion go beyond June 30, 2019.

D. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

E. Contractor shall be on site within 7 calendar days of the purchase order issuance to begin construction activities. Coordination with the Owner's Project Manager must take place within 3 days of issuance of purchase order.

1.5 ITEMS TO BE SALVAGED

A. None.

1.6 SUBCONTRACTOR CERTIFICATION REQUIREMENTS

A. Network/IT wiring to be installed by Panduit PCI Certified vendor. This includes wire runs and terminations.

B. See individual Specification sections.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.1 CONTRACTOR USE OF SITE AND PREMISES

A. Owner intends to continuously occupy the facility. Work areas will be made available as mutually agreed to during project scheduling.

B. Construction Operations: Limited to areas noted on Drawings. Coordinate with Site Utilization Requirements. Include in the Base Bid all costs of this coordination, including all premium time wages that may be required to meet these requirements and project schedule. Cost of all work done during second or third shifts or on weekends and holidays shall be included in the bid price.

C. Arrange use of site and premises to allow:

1. Adjacent projects to progress as planned for the Owner.
2. Use of street and adjacent properties by the Public.
3. Continued operation of the facility.

D. Provide access to and from site as required by law and by Owner:

1. Maintain appropriate egress for workforce and users of the facility.
2. Do not obstruct roadways, sidewalks, or other public ways without permit. Provide necessary signage and barriers to direct pedestrians around work areas.
3. Barriers and signage must be provided by the contractor to the satisfaction of the Owner to separate the work area from occupied areas. Efforts must be taken to limit dust, noise and odors from escaping the work area. Proper separation and protection of interior spaces shall be established and maintained during the project, to the satisfaction of the Owner.
4. Contractor is responsible for cleaning construction dust and/or debris from public areas and daily or at the request of the Owner. Work areas within the building shall be kept tidy at all times.
5. Contractor shall provide and maintain walk-off mats at work site entries.

E. Utility and Building Services Outages and Shutdown:

1. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 7 days' written notice to Owner and authorities having jurisdiction.
2. Prevent accidental disruption of utility services to other facilities.
3. Contractor to provide written notification on Fire Sprinkler and Alarm System Impairment Notification Form found in Section 00 73 02.
4. When construction activities impact ventilation, heating or air conditioning to occupied building spaces, the contractor shall provide the necessary equipment to maintain proper ventilation rates and a temperature of 68° heating and 72° cooling. Prior to the decommissioning of equipment, the contractor shall submit a plan for temporary HVAC services, including unit location, utility connection, ductwork tie in and other logistical considerations.

F. Construction in Regularly Occupied Areas:

1. Activities which require work in regularly occupied spaces shall be indicated on the Two-Week Look-Ahead and confirmed with the owner at least two (2) business days in advance.
2. The safety of building occupants and construction workers is paramount. All construction activities within occupied spaces shall be marked with cones and caution tape. Computer generated signage shall be provided indicating the path of travel around construction zones, and

shall also be posted at stairwell doors indicating where internal construction activities may take place.

3.2 TIME RESTRICTIONS AND WORKING HOURS

A. Disruptive Activities & Work Restrictions

1. Limit conduct of especially noisy work when events are in process. Night (after 8pm for this project) and weekend work needs to be coordinated with owner, at least 72 hours written notice for approval.
2. Noise and vibration creating work restrictions are defined as follows:
   a. No restrictions: normal construction activities may take place. No restrictions on noise or vibrations. Utility shutdowns may occur following proper notifications.
   b. Quiet Work: vibration producing work may not occur. Work that generates noise that would escape the project site and cause disruption to occupants is prohibited. Disallowed activities include but are not limited to: demolition of block and concrete, use of jackhammers, saw cutting, hammer drilling, mechanical fastening and other work activities which provides loud noises or vibrations that are constant in nature.
   c. No Work: on site work is prohibited to take place during this time. Workers are prohibited from the site without prior notification to the Owner.
3. It is the sole discretion of the Owner to determine if activities are considered disallowed during quiet work periods. The designation of disallowed activities is contingent on location within the job site and the activities of the occupants.
4. The contractor my request a “disturbance test” which may allow for some disallowed activities to take place during quiet work times. Contractor may request with 24 hour notice to run a limited test to determine if a specific activity in a set location can be performed during quiet work periods. The owner will observe the impact on the occupied areas and determine if the activity take place. Waivers resulting from disturbance tests will be valid for a set period of time, based on construction activities and occupant usage.

B. Working Hours

1. No work - in order to ensure the safety of occupants and preserve the educational experience, work MAY NOT take place during the following time periods:
   a. Final examination period December 10, 2018 – December 19, 2018
   b. Final examination period April 30, 2019-April 8, 2019
2. Quiet Work shall be the standard by which work will be permitted during library open hours, which can be found at http://ric.libcal.com/. Note that Library hours are modified at the end of the semesters. Contractors shall make themselves familiar with the hours of the library and account for quiet work hours when considering their schedule and bids. Increases to the contract will not be considered for instances in which contractors are required to work 2nd or 3rd shift, or other modified hours to accommodate library operations.
3. Contractor will be permitted to work when the library is closed. It is preferred that loud or vibratory work be conducted during these periods. Due to the sensitive nature of the library’s contents, 72 hours advance notice is required for work that is to take place when the library is closed.
4. Sufficient time to clean up work zones shall be allocated at the end of the shift. All construction activities within the building shall be thoroughly vacuumed, wet mopped and cleaned to the satisfaction of the Owner at the end of each shift.

5. All construction materials, tools and debris must be removed from occupied building spaces once construction activities have ended for the day. Occupied spaces must be returned to original conditions to the greatest extent possible by the opening of the library for the day. If it is not feasible to do as such, notify the Owner immediately. With approval, the area shall be cordoned off with cones and caution tape and computer generated signage shall be posted to the satisfaction of the Owner.

3.3 SCHEDULE COORDINATION:

A. The contractor shall provide by noon on Thursdays the two week project look ahead which lists in detail the planned activities, locations of disturbance, scheduled subcontractors and working hours for the forthcoming Sunday-Saturday. The same shall be provided for the second week, but as a working draft. The document shall list out any utility shutdowns or other activities which require review and approval of the Owner.

3.4 SITE UTILIZATION PLAN

A. Contractor shall maintain a safe site for workers and pedestrians at all times.

B. Contractor is responsible for protection and restoration of existing conditions including, but not limited to hardscape, landscape and lawns.

C. Site Use

1. Contractor shall provide six foot high construction fence that is properly secured and maintained around building in approximate locations shown on the site plan allowing access to all egress doors designated by the Owner. Provide visual screening on fence using fabric approved by the Owner.

2. Contractor to provide overhead cover protection at all entrances and egresses from the building. Entrances and paths of egress must be clearly marked with signage with placement and language approved in advance by the Owner.

3. Staging of equipment, dumpsters and materials must be situated within the project fenced-in areas.

D. Large deliveries of materials or equipment that may block parking or access to the parking lot area shall occur prior to 7:30am. Use of areas outside of the project area will be permitted during off-hours is permissible provided such use is coordinated with the Owner at least 72 hours in advance.

E. For activities requiring closure of the parking lot, roadways and/or walkways, the Contractor is responsible for all temporary barriers and acquiring RIC Campus Police details to route pedestrians and vehicular traffic.

F. A Site Utilization Plan shall be submitted by the Contractor within ten (10) business days of issuance of the Purchase Order for approval by the Owner.

END OF SECTION

01 20 00 – PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Allowances.

B. Testing and inspection allowance.

C. Schedule of values.

D. Applications for payment.

E. Warranty inspection retainage.

F. Sales tax exemption.

G. Change procedures.

H. Defect assessment.

I. Unit prices.

J. Alternates.

1.2 ALLOWANCES

A. See General Conditions Article 3.8 for Allowance provisions.

B. Design Agent Responsibility:

1. Consult with Contractor for consideration and selection of products, suppliers, and Installers.
2. Select products in consultation with Owner and transmit decision to Contractor.
3. Prepare Change Order to adjust final cost.

C. Contractor Responsibility:

1. Assist Design Agent or its Consultants in selection of products, suppliers and installers.
2. Obtain proposals from suppliers and installers, and offer recommendations.
3. On notification on selection by Design Agent, execute purchase agreement with designated supplier and installer.
4. Arrange for and process shop drawings, product data, and samples. Arrange for delivery.
5. Promptly inspect products upon delivery for completeness, damage, and defects. Submit claims for transportation damage.

D. Schedule of Allowances: Allowances

1. Refer to bid form.

1.3 TESTING AND INSPECTION ALLOWANCE

A. All costs of regularly scheduled testing are included in the Base Bid. See Attachment A for allowance to cover costs of additional testing to be provided when directed by the Owner.

B. See Section 01 40 00 and its attachment for testing requirements.

C. Testing Allowance

1. Refer to bid form.

1.4 SCHEDULE OF VALUES

A. Submit Schedule of Values in duplicate, one copyrighted original and one copy prior to the first Application for Payment.

B. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the major specification Section. Identify site mobilization, bonds, insurance and closeout.

C. Include in each line item, the amount of Allowances specified in this Section. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by the unit cost to achieve the total for the item.

D. Revise schedule to list approved Change Orders, with each Application for Payment.

1.5 APPLICATIONS FOR PAYMENT

A. Submit each application on an original AIA Form G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet, accompanied by three copies.

1. Prepare a draft version “pencil copy” of each application and distribute via email 5 days prior to due date for review by Design Agent and Owner’s representative. Contractor shall provide a summary list of all sub-contractors who performed work on the site for the month with the pencil requisition.

2. After making agreed revisions, individually sign and notarize and emboss with notary's official seal, the original and each of the three copies. Deliver to Owner’s representative for further processing and distribution.

3. Applications not including original copyrighted AIA G702, and G703 Forms, will be rejected, and returned for re-submittal.

4. Applications not properly signed and notarized will be rejected, and returned for re- submittal.

5. Applications submitted without the following items described in this section and its attachments will be returned for resubmittal.

B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.

C. Provide one hard copy and one copy in disc form of the updated construction schedule with each Application for Payment submission, prepared per Section 01 33 00.

D. Provide a statement signed by the Contractor's firm principal certifying that there are no unidentified outstanding claims for delay.

E. Each Application for Payment shall include Certified Monthly Payroll Records for all workers on site for the previous month. Failure to provide Certified Payroll Records with the Application for Payment submission will result in a delay in processing and may result in a reduction in the amount of said Application for Payment.

F. Submit with transmittal letter as specified for Submittals in Section 01 33 00.

G. Beginning with the second Application for Payment, Contractor's right to payment must be substantiated by documenting, on a copy of the RIC Waiver of Lien Form included in Document 00 65 19 - Waiver of Lien Form in this Project Manual, that payment monies due, less retainage not exceeding five (5) percent, have been paid in full to subcontractor and suppliers for work, materials, or rental of equipment billed for under specific line item numbers in the immediately preceding application.

H. Substantiating Data: When the Owner or Design Agent requires additional substantiating information from the review of the "pencil copy," submit data justifying dollar amounts in question.

I. In addition to the items above, include the following with the Application for Payment:

1. Record Documents as specified in Section 01 78 00, for review by the Owner which will be returned to the Contractor.
2. Affidavits attesting to off-site stored products with insurance certificates as requested.
3. Digital Photographs as specified in Section 01 33 00. Include on same disc with construction schedule.

J. Payment Period: Submit at monthly intervals unless stipulated otherwise in the Supplemental General Conditions.

K. Payroll Reporting

1. Forms for the submission of Certified Payroll Records may be found from the Rhode Island Prevailing Wage Website in either PDF or Excel formats. These forms must be used on monthly submittals.
2. Identify Apprenticeship hours required under RIGL 37-13-3.1 for all contracts over $1million in value.
3. A Minority Utilization Report for minority subcontractors must be included. Use the form provided as Attachment A.

1.6 WARRANTY INSPECTION RETAINAGE

A. One-half of one percent of the cost of the Work may be retained from Final Payment for duration of ten months. If, after ten months, all systems including mechanical and electrical, are determined by the Owner to be properly functioning, the Warranty Inspection Retainage will be released.

B. If, after ten months, there are found to be modifications, adjustments, or corrections necessary to be made to address any system or product malfunction, in order to fulfill specified performance or requirements of such systems or products, release of the warranty inspection retainage will be delayed until such malfunctions are rectified.

C. If, after twelve months from the date of Final Completion, all systems have not been fully addressed, the Owner may utilize the Warranty Inspection Retainage to hire others to execute necessary modifications, adjustments, or corrections.

1.7 SALES TAX EXEMPTION

A. Owner is exempt from sales tax on products permanently incorporated in Work of the Project.

1. Obtain sales tax exemption certificate number from Owner.
2. Place exemption certificate number on invoice for materials incorporated in the Work of the Project.
3. Furnish copies of invoices to Owner.
4. Upon completion of Work, file a notarized statement with Owner that all purchases made under exemption certificate were entitled to be exempt.
5. Pay legally assessed penalties for improper use of exemption certificate number.

1.8 CHANGE PROCEDURES

A. Submittals: Submit name of the individual authorized to receive change documents, and be responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

B. The Design Agent will advise of minor changes in the Work not involving an adjustment to Contract Sum or Contract Time by issuing supplemental instructions on AIA Form G710.

C. The Design Agent may issue a Proposal Request which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required, and the period of time during which the requested price will be considered valid. Contractor will prepare and submit an estimate within 15 days.

D. The Contractor may propose changes by submitting a request for change to the Design Agent, describing the proposed change and its full effect on the Work. Include a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation, and a statement describing the effect on Work by separate or other Contractors. Document any requested substitutions in accordance with Section 01 60 00.

E. Stipulated Sum Change Order: Based on Proposal Request, and Contractor's fixed price quotation, or Contractor's request for a Change Order as approved by Design Agent. <u>All quotations shall include detailed material costs and labor hour and rate breakouts.</u>

F. Unit Price Change Order: For contract unit prices and quantities, the Change Order will be executed on a fixed unit price basis. For unit costs or quantities of units of work which are not pre-determined, execute the Work under a Construction Change Directive. Changes in the Contract Sum or Contract Time will be computed as specified for a Time and Material Change Order.

G. Construction Change Directive: Design Agent may issue a directive, on AIA Form G713 Construction Change Directive signed by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in the Contract Sum or Contract Time. Promptly execute the change.

H. Time and Material Change Order: Submit an itemized account and supporting data after completion of the change, including timeslips signed by Owner’s representative, within the time limits indicated in the Conditions of the Contract. The Design Agent will determine the change allowable in the Contract Sum and Contract Time as provided in the Contract Documents. Only Owner-representative-signed timeslips will be considered.

I. Maintain detailed records of work done on a Time and Material basis. Submit timeslips daily for verification and sign-off by Owner’s representative on-site. Provide full information required for an evaluation of the proposed changes, and to substantiate costs for the changes in the Work.

J. Document each quotation for a change in cost or time with sufficient data to allow an evaluation of the quotation. Provide detailed breakdown of costs and estimates for labor and materials including a detailed breakdown for subcontractor's or vendor's Work. Include copies of written quotations from subcontractors or vendors.

K. Change Order Forms: AIA G701 Change Order.

L. Change Order Markup:

1. For the Contractor, for Work performed by the Contractor's own forces, 10 percent of the cost.
2. For the Contractor, for Work performed by the Contractor's Subcontractor, 6 percent of the amount due the Subcontractor.
3. For each Subcontractor or Sub-subcontractor involved, for Work performed by that Subcontractor's or Sub-subcontractor's own forces, 10 percent of the cost.

4. For each Subcontractor, for Work performed by the Subcontractor's Sub-subcontractors, 6 percent of the amount due the Sub-subcontractor.
5. Overhead and profit is to include the Contractor's project management and supervisory costs, all administrative expenses and personnel, change estimate preparation, mobilization, setup & breakdown, meetings, all safety related costs, cleanup costs and storage costs pertaining to the changes in the work.
6. The fee increase to any permit required by the additional work is allowed to be added to the Change Order costs. However, the Contractor is required to submit proof that the additional fee was paid to the presiding authority.
7. In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also. In no case will a change involving over $500.00 be approved without such itemization.

M. Execution of Change Orders: The Design Agent will issue Change Orders for signatures of the parties as provided in the Conditions of the Contract.

1. The approved Change Order amount shall include all compensation to the Contractor, including but not limited to Overhead and Profit, General Conditions, Material, Labor, Equipment and other costs. Following the execution of the Change Order, no additional compensation for the work covered in the Change Order shall be considered.

N. Correlation Of Contractor Submittals:

1. Promptly revise the Schedule of Values and the Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum. Promptly revise progress schedules to reflect any change in the Contract Time, revise sub- schedules to adjust times for any other items of work affected by the change, and resubmit.
2. Promptly enter changes in the Project Record Documents.

1.9 DEFECT ASSESSMENT

A. Replace the Work, or portions of the Work, not conforming to specified requirements.

B. If, in the opinion of the Design Agent, it is not practical to remove and replace the Work, the Design Agent will direct an appropriate remedy or adjust payment.

C. The defective Work may remain, but the unit sum will be adjusted to a new sum at the discretion of the Design Agent.

D. The defective Work will be partially repaired to the instructions of the Design Agent, and the unit sum will be adjusted to a new sum at the discretion of the Design Agent.

E. The individual Specification Sections may modify these options or may identify a specific formula or percentage sum reduction.

F. The authority of the Design Agent to assess the defect and identify a payment adjustment, is final.

G. Non-Payment For Rejected Products: Payment will not be made for rejected products for any of the following:

1. Products wasted or disposed of in a manner that is not acceptable.
2. Products determined as unacceptable before or after placement.
3. Products not completely unloaded from the transporting vehicle.

4. Products placed beyond the lines and levels of the required Work.
5. Products remaining on hand after completion of the Work.
6. Loading, hauling, and disposing of rejected products.

1.10 UNIT PRICES

A. See Section 01 22 00.

1.11 ALTERNATES

A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at the Owner's option. Accepted Alternates will be identified in the Purchase Order.

B. Coordinate related work and modify surrounding work as required.

C. Schedule of Alternates: See Section 01 23 00

PART 2 - PRODUCTS - NOT USED.

PART 3 - EXECUTION - NOT USED.

END OF SECTION

MBE COMPLIANCE FORM

MBE Compliance Office
www.mbe.ri.gov (website)
1 Capitol Hill, 2nd Floor
Providence, RI 02908
401-574-8670, 401-574-8387 (fax)

Pursuant to RIGL 37-14.1 as well as the regulations promulgated thereto, the MBE Compliance Office requires that you complete the following table. Please note that these figures will be verified with the MBEs identified. If there are outstanding issues, such as retainage or a dispute, please indicate and attach supporting documentation for same. Also note that copies of invoice and cancelled checks for payment to all MBE subcontractors and suppliers are required.

Contractor/Vendor Name: _____

Project Name & Location: _____

Original Prime Contract Amount _____

Current Prime Contract Amount: _____

MBE/WBE Subcontractor	Original Contract Amount	Change Orders	Revised Contract Value	% To Date Completed	Amount Paid To Date	Amount Due	Retainage %	Retainage Amount	Explanation

I declare, under penalty of perjury, that the information provided in this verification form and supporting documents is true and correct.

_____ Signature

_____ Date

_____ Printed Name

Notary Certificate:

Sworn before me this _____ day of _____ , 20__.

_____ Notary Signature

_____ Commission Expires

01 22 00 – UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

B. Related Requirements:

1. Section 01 2000 "Price & Payment Procedures" for procedures for submitting and handling Change Orders.

1.3 DEFINITIONS

A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

B. Excavation quantities shall be measured on a volume basis as computed from original in-place position. Fill quantities shall be measured on a volume basis as computed from in-place position.

C. No removed material shall be calculated against more than one category of allowance.

1.4 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, and profit.

B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

A. Refer to bid form.

END OF SECTION

01 23 00 – ALTERNATES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Description of alternates.

1.2 RELATED REQUIREMENTS

A. Document 00 2113 - Instructions to Bidders: Instructions for preparation of pricing for alternatives.

1.3 ACCEPTANCE OF ALTERNATES

A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted alternates will be identified in the Owner-Contractor Agreement.

B. Coordinate related work and modify surrounding work to integrate the Work of each alternate.

1.4 SCHEDULE OF ALTERNATES

A. Refer to bid form.

END OF SECTION

01 30 00 – ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Site administration

B. Coordination and project conditions.

C. Preconstruction meeting.

D. Site mobilization meeting.

E. Progress meetings.

F. Pre-installation meetings.

1.2 SITE ADMINISTRATION

A. Maintain a daily attendance log to include the names of all project employees and guests to the site. Each guest signing the log should indicate a brief description of the reason for the visit, the guest's employer or organization. The log sheet, or sheets, must clearly indicate the Project Name, and the name of the general Contractor. Each line in the log should allow for the name of that employee, the employee's job title (use terminology used by prevailing wage job title), and the name of that employee's employer. This log shall be kept on a uniform form prescribed by the Director of Labor and Training. Such log shall be available for inspection on the site at all times by the Purchaser, Owner, and/or the Director of the Department of Labor and Training and his or her designee. Provide copies when requested.

B. Daily Attendance Form

1. Maintain Daily Attendance Form acceptable to the Department of Labor and Training for all projects with a contract value over $1 Million. Submit as requested.

1.3 COORDINATION AND PROJECT CONDITIONS

A. Coordinate the scheduling, submittals, and the Work of the various Sections of the Project Manual to ensure an efficient and orderly sequence of the installation of interdependent construction elements.

B. Verify that the utility requirements and characteristics of the operating equipment are compatible with the building utilities. Coordinate the Work of the various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

C. Coordinate the space requirements, supports and installation of the mechanical and electrical Work, which are indicated diagrammatically on the Drawings. Follow the routing shown for the pipes, ducts, and conduit, as closely as practicable; place runs parallel with the lines of the building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

D. Coordinate the completion and clean up of the Work of the separate Sections in preparation for Substantial Completion and for portions of the Work designated for the Owner's partial occupancy.

E. After the Owner's occupancy of the premises, coordinate access to the site for correction of defective Work and the Work not in accordance with the Contract Documents to minimize disruption of the Owner's activities.

1.4 PRECONSTRUCTION MEETING

A. The Design Agent will schedule a meeting after a Purchase Order is issued to the Contractor.

B. Attendance Required: Owner's Representative, Design Agent, and Contractor.

C. Agenda:

1. Distribution of the Contract Documents.
2. Submission of a list of Subcontractors, a list of products, schedule of values, and a progress schedule.
3. Designation of the personnel representing the parties in the Contract and the Design Agent.
4. The procedures and processing of the field decisions, submittals, substitutions, applications for payments, proposal requests, Change Orders, and Contract closeout procedures.
5. Scheduling.

D. Contractor shall record the minutes and distribute copies within two days after the meeting to the participants, with copies to the Design Agent, Owner, other participants, and those consultants affected by the decisions made.

1.5 SITE MOBILIZATION MEETING

A. The Design Agent will schedule a meeting at the Project site prior to the Contractor's occupancy and may occur at the same time as the Preconstruction meeting noted above.

B. Attendance Required: The Owner, Design Agent, Contractor, the Contractor's Superintendent, and major Subcontractors.

C. Agenda:

1. Use of the premises by the Owner and the Contractor.
2. The Owner's requirements and partial occupancy.
3. Construction facilities and controls provided by the Owner.
4. Temporary utilities provided by the Owner.
5. Security and housekeeping procedures.
6. Schedules.
7. Application for payment procedures.
8. Procedures for testing.
9. Procedures for maintaining the record documents.
10. Requirements for the start-up of equipment.
11. Inspection and acceptance of the equipment put into service during the construction period.

D. Contractor shall record the minutes and distribute the copies within two days after the meeting to the participants, with copies to the Design Agent, Owner, other participants, and those consultants affected by the decisions made.

1.6 PROGRESS MEETINGS

A. Schedule and administer the meetings throughout the progress of the Work at weekly intervals while work is in process.

B. Make arrangements for the meetings, prepare the agenda with copies for the participants, and preside at the meetings.

C. Attendance Required: The job superintendent, major subcontractors and suppliers, the Owner, Design Agent, and Consultants as appropriate to agenda topics for each meeting.

D. Agenda:

1. Review the minutes of previous meetings.
2. Review of the Work progress.
3. Field observations, problems, and decisions.
4. Identification of the problems which impede the planned progress.
5. Review of the submittals schedule and status of the submittals.
6. Review of delivery schedules.
7. Maintenance of the progress schedule.
8. Corrective measures to regain the projected schedules.
9. Planned progress during the succeeding work period.
10. Coordination of the projected progress.
11. Maintenance of the quality and work standards.
12. Effect of the proposed changes on the progress schedule and coordination.
13. Other business relating to the Work.

E. Contractor shall record the minutes and distribute the copies within two days after the meeting to the participants, with copies to the Design Agent, Consultants, Owner, participants, and others affected by the decisions made.

1.7 PREINSTALLATION MEETINGS

A. When required in the individual specification Sections or listed below, convene a pre-installation meeting at the site prior to commencing the Work of the Section. Pre-installation Meetings:

1. The following items of work will require pre-installation meetings:
   a. Temporary HVAC systems
   b. Network and Telecommunication wiring and systems.
   c. Network and Telecommunication data rack connections.
   d. Fire Alarm and Sprinkler demolition and installation.
   e. Demolition
   f. Air Handler Renovation
   g. Cooling tower demolition and installation

B. Require attendance of the parties directly affecting, or affected by, the Work of the specific Section.

C. Notify the Design Agent four days in advance of the meeting date.

D. Prepare an agenda and preside at the meeting:

1. Review the conditions of installation, preparation and installation procedures.
2. Review coordination with the related work.

E. Record the minutes and distribute the copies within two days after the meeting to the participants, with copies to the Design Agent, Owner, participants, and those Consultants affected by the decisions made.

PART 2 - PRODUCTS - NOT USED.

PART 3 - EXECUTION - NOT USED.

END OF SECTION

01 33 00 – SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Submittal procedures.

B. Construction progress schedules.

C. Proposed products list.

D. Product data.

E. Shop drawings.

F. Design Data.

G. Samples.

H. Test reports.

I. Certificates.

J. Manufacturer's instructions.

K. Manufacturer's field reports.

L. Digital Photographs.

M. Erection drawings.

N. Construction photographs.

1.2 SUBMITTAL PROCEDURES

A. Master List Submittal:

1. Within 10 days of the purchase order, submit a master list of the required submittals with a proposed date for each item to be submitted.
2. Show the date submittal was sent, days since submittal was sent, status of submittal, date submittal was received in return, and any date associated with resubmittals.
3. Update master list with each submission and response.
4. Issue copy of master list at least monthly to the Design Agent.

B. Transmit each submittal with a dated Design Agent-accepted transmittal form.

C. Transmit printed copies and electronic PDF copy of each submittal to the Design Agent for review and comment as outlined in each section below.

D. Sequentially number the transmittal form. Mark revised submittals with an original number and a sequential alphabetic suffix.

E. Identify the Project, Contractor, subcontractor and supplier; the pertinent drawing and detail number, and the specification Section number, appropriate to the submittal.

F. Apply a Contractor's electronic stamp certifying that the review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of the information is in accordance with the requirements of the Work and the Contract Documents.

G. Schedule submittals to expedite the Project, and deliver to the Design Agent’s FTP site. Coordinate the submission of related items.

H. For each submittal, allow 15 days for review.

I. Identify all variations from the Contract Documents and any Product or system limitations which may be detrimental to a successful performance of the completed Work.

J. Allow space on the submittals for the Contractor's, Design Agent's, and Consultant's electronic review stamps.

K. When revised for resubmission, identify the changes made since the previous submission.

L. Distribute copies of the reviewed submittals as appropriate. Reproduce as necessary to inform subcontractors without internet download capabilities. Instruct the parties to promptly report any inability to comply with the Contract requirements.

M. Produce additional copies as required for the Record Document purposes as described in Section 01 78 00.

1.3 CONSTRUCTION PROGRESS SCHEDULES

A. Submit initial progress schedule in duplicate within 10 days after Date of Commencement for Design Agent to review. After a review, submit detailed schedules within 15 days modified to accommodate the revisions recommended by the Design Agent and Owner.

B. Distribute copies of the reviewed schedules to the Project site file, subcontractors, suppliers, and other concerned parties. Instruct the recipients to promptly report, in writing, the problems anticipated by the projections indicated in the schedules

C. Submit updated schedules with each Application for Payment, identifying changes since previous version as follows:

1. Indicate the progress of each activity to the date of submittal, and the projected completion date of each activity.
2. Identify the activities modified since the previous submittal, major changes in the scope, and other identifiable changes.
3. Provide a narrative report to define the problem areas, the anticipated delays, and impact on the Schedule. Report the corrective action taken, or proposed, and its effect including the effect of changes on the schedules of separate contractors.

D. Submit a computer-generated horizontal bar chart with separate line for each major portion of the Work or operation, identifying the first work day of each week.

E. Show a complete sequence of construction by activity, identifying the Work of separate stages and other logically grouped activities. Indicate the early and late start, the early and late finish, float dates, and duration. Critical path items shall be clearly identified.

F. Indicate an estimated percentage of completion for each item of the Work at each submission.

G. Provide a separate schedule of submittal dates for shop drawings, product data, and samples, including Owner-furnished Products and Products identified under Allowances, if any, and the dates reviewed submittals will be required from the Design Agent. Indicate the decision dates for selection of the finishes.

H. Indicate the delivery dates for Owner furnished Products, and for Products identified under Allowances.

1.4 PROPOSED PRODUCTS LIST

A. Within 10 days after the Date of Commencement, submit a list of major products proposed for use, with the name of the manufacturer, the trade name, and the model number of each product.

B. For the products specified only by reference standards, give the manufacturer, trade name, model or catalog designation, and reference standards.

C. With each product listed, indicate the submittal requirements specified to be adhered to, and an indication of relevant "long-lead-time" information, when appropriate.

1.5 PRODUCT DATA

A. Product Data: Submit to the Design Agent for review for the limited purpose of checking for conformance with the information given and the design concept expressed in the Contract Documents. Provide copies and distribute in accordance with the SUBMITTAL PROCEDURES article and for the record documents purposes described in Section 01 78 00.

B. Submit one (1) printed copy and one (1) electronic PDF copy for review. The Design Agent will retain the reviewed printed copy for record and return the reviewed electronic PDF copy to the Contractor for distribution.

C. Mark each copy to identify the applicable products, models, options, and other data. Supplement the manufacturers' standard data to provide the information specific to this Project.

D. Indicate the product utility and electrical characteristics, the utility connection requirements, and the location of utility outlets for service for functional equipment and appliances.

E. After a review distribute in accordance with the Submittal Procedures article above and provide copies for record documents described in Section 01 78 00.

1.6 SHOP DRAWINGS

A. Shop Drawings: Submit to the Design Agent for review for the limited purpose of checking for conformance with the information given and the design concept expressed in the Contract Documents. Produce copies and distribute in accordance with the SUBMITTAL PROCEDURES article and for the record documents purposes described in Section 01 78 00.

B. Submit two (2) printed copies and one (1) electronic PDF copy for review. The Design Agent and /or Consultants will retain the reviewed printed copies for record and return the reviewed electronic PDF copy to the Contractor for distribution.

C. Indicate the special utility and electrical characteristics, the utility connection requirements, and the location of utility outlets for service for functional equipment and appliances.

1.7 SAMPLES

A. Samples: Submit to the Design Agent for review for the limited purpose of checking for conformance with the information given and the design concept expressed in the Contract Documents. Produce duplicates and distribute in accordance with the SUBMITTAL PROCEDURES article and for the record documents purposes described in Section 01 78 00.

B. Samples for Selection as Specified in Product Sections:

1. Submit to the Design Agent for aesthetic, color, or finish selection.

2. Submit samples of the finishes in the colors selected for the Design Agent's records.

3. After review, produce duplicates and distribute in accordance with the SUBMITTAL PROCEDURES article and for the record documents purposes described in Section 01 78 00.

C. Submit samples to illustrate the functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate the sample submittals for interfacing Work.

D. Include identification on each sample, with the full Project information.

E. Submit at least the number of samples specified in the individual specification Sections; the Design Agent will retain two samples.

F. Reviewed samples, which may be used in the Work, are indicated in the individual specification Sections.

G. Samples will not be used for testing purposes unless they are specifically stated to be in the specification Section.

1.8 TEST REPORTS

A. Submit (1) printed and (1) electronic PDF lab reports in accordance with Section 01 40 00.

B. Submit test reports for information for the limited purpose of assessing conformance with the information given and the design concept expressed in the Contract Documents.

1.9 DESIGN DATA

A. Submit (1) printed and (1) electronic PDF data for the Design Agent’s knowledge as contract administrator for the Owner.

B. Submit information for the limited purpose of assessing conformance with the information given and the design concept expressed in the Contract Documents.

1.10 CERTIFICATES

A. When specified in the individual specification Sections, submit (1) printed and (1) electronic PDF certification by the manufacturer, installation/application subcontractor, or the Contractor to the Design Agent in the quantities specified for the Product Data.

B. Indicate that the material or product conforms to or exceeds the specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on the material or product, but must be acceptable to the Design Agent and its Consultants.

1.11 MANUFACTURER'S INSTRUCTIONS

A. When specified in the individual specification Sections, submit (1) printed and (1) electronic PDF copy of instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to the Design Agent for delivery to the Owner in the quantities specified for Product Data.

B. Indicate the special procedures, and the perimeter conditions requiring special attention, and the special environmental criteria required for application or installation.

1.12 MANUFACTURER'S FIELD REPORTS

A. Submit (1) printed and (1) electronic PDF of reports for the Design Agent's benefit as contract administrator for the Owner.

B. Submit the report within 30 days of observation to the Design Agent for the limited purpose of assessing conformance with the information given and the design concept expressed in the Contract Documents.

1.13 DIGITAL PHOTOGRAPHS

A. Submit minimum 12 digital photographs of construction progress each month on the same CD as the project schedule submittal. Include both jpg. and reduced-size pdf versions for email use.

B. Include an additional minimum of 12 photographs documenting underground utilities when installed in relationship to visible site features.

C. Include photographs of important in-wall or ceiling utilities before close-in at appropriate stages of construction.

D. See Section 01 78 00 for close-out copy requirements of these files.

1.14 PRECONSTRUCTION VIDEO

A. Conduct a pre-construction survey of the project side and areas immediately adjacent to the site. Submit two (2) copies of the video on DVD to the Owner.

1.15 ERECTION DRAWINGS

A. When specified in the individual Specification sections, the trade contractors shall submit (1) printed and (1) electronic PDF copy of erection drawings for review prior to proceeding with fabrication and/or construction.

B. Erection drawings shall be prepared in accordance with the latest edition of the respective trades' codes of standard practice.

C. All erection drawings shall be fully developed by the trade contractors or by agents of the contractors. CAD files, photocopies, or other reproductions of the contract drawings in whole or in part shall not be used by the trade contractors or their agents for the preparation and development of erections drawings without the expressed written consent of the Design Agent.

1.16 SUBMITTAL LIST

A. At a minimum the following submittals are required. Please refer to individual specification sections for more information.

1. Schedule of values
2. Site Utilization Plan
3. Project Schedule
4. Fans
5. Roof top intakes and exhaust vents
6. Ductwork/Piping
7. Insulation
8. Preparation, Paints and Coatings – Air Handling Units
9. Curbs and Dunnage
10. Valves and Fittings
11. Cooling Tower
12. Dampers and Controls
13. Reheat Coil
14. Controls sequences and sensors

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

01 40 00 – QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Quality control and control of installation.

B. Contractor Qualifications

C. Verification of Credentials and Licenses.

D. Tolerances

E. References.

F. Testing and inspection services.

G. Manufacturers' field services.

H. Mock-up Requirements.

1.2 QUALITY CONTROL AND CONTROL OF INSTALLATION

A. Monitor a quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of the specified quality.

B. Comply with all manufacturers' instructions and recommendations, including each step in sequence.

C. When the manufacturers' instructions conflict with the Contract Documents, request a clarification from the Design Agent before proceeding.

D. Comply with the specified standards as a minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Perform the Work by persons qualified to produce the required and specified quality.

F. Verify that field measurements are as indicated on the Shop Drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.3 CONTRACTOR QUALIFICATIONS

A. Upon request, contractor shall provide no less than three references for projects of similar scope and budget.

B. References provided shall have direct knowledge of the contractor’s work on the reference project.

C. Information to provide for each reference:

1. Name, Title and Company
2. Current email and phone number
3. Project name, client, location and brief description of the work, including scope, budget and schedule. Enumerate aspects of the reference project that is similar to this project.

1.4 VERIFICATION OF CREDENTIALS AND LICENSES

A. The Owner has implemented a project management oversight process and is applying it to current construction projects at RIC.

B. An element of this oversight process is the verification that persons employed on the project site have appropriate and current credentials and licenses in their possession, at the project site, for the work they are performing.

C. Be forewarned that state resident inspectors will be checking for verification of credentials and licenses of both union and non-union persons, in their onsite inspections.

D. State resident inspectors will also be reviewing Contractor's Certified Monthly Payroll Records for conformance with RI State Prevailing Wage Rate requirements.

E. Those persons without the appropriate credentials and licenses will be subject to dismissal from the project site.

1.5 TOLERANCES

A. Monitor the fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with the manufacturers' tolerances. When the manufacturers' tolerances conflict with the Contract Documents, request a clarification from the Design Agent before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

1.6 REFERENCES

A. For products or workmanship specified by association, trade, or other consensus standard, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard by the date of issue current on the date of the Contract Documents, except where a specific date is established by code.

C. Obtain copies of the standards where required by the product specification Sections.

D. When the specified reference standards conflict with the Contract Documents, request a clarification from the Design Agent before proceeding.

E. Neither the contractual relationships, duties, or responsibilities of the parties in the Contract, nor those of the Design Agent, shall be altered from the Contract Documents by mention or inference otherwise in reference documents.

1.7 TESTING AND INSPECTION SERVICES

A. The Contractor will submit the name of an independent firm to the Design Agent for approval by the Owner, to perform the testing and inspection services.

1. Base Bid Testing Requirements List. The Contractor shall pay for all the services required in the Base Bid as described:
   a. Functional performance test of the cooling tower.
   b. Functional performance test of all new fans and dampers.
   c. Functional performance test of the 1st and 4th floor air handling units.
   d. Test, adjust and balance all fans and the rooftop return air system.
   e. Test, adjust and balance the cooling tower system.
2. All and any additional testing and commissioning will be by a separate contract and the agent shall be hire directly by the Owner.

B. The independent firm will perform the tests, inspections and other services specified in the individual specification Sections and as required by the Design Agent or its Consultants.

1. Laboratory: Authorized to operate in the location in which the Project is located.
2. Laboratory Staff: Maintain a full time registered Engineer on staff to review the services.
3. Testing Equipment: Calibrated at reasonable intervals with devices of accuracy traceable to either the National Bureau of Standards or to the accepted values of natural physical constants.

C. Testing, inspections and source quality control may occur on or off the project site. Perform off-site testing as required by the Design Agent or the Owner.

D. Reports will be submitted by the independent firm to the Design Agent, the Consultant for that trade, and the Contractor, in duplicate, indicating the observations and results of tests and indicating the compliance or non-compliance with Contract Documents.

E. Cooperate with the independent firm; furnish samples of the materials, design mix, equipment, tools, storage, safe access, and the assistance by incidental labor as requested.

1. Notify the Design Agent and Engineer and the independent firm 24 hours prior to the expected time for operations requiring services.
2. Make arrangements with the independent firm and pay for additional samples and tests required for the Contractor's use.

F. Testing and employment of the testing agency or laboratory shall not relieve the Contractor of an obligation to perform the Work in accordance with the requirements of the Contract Documents.

G. Re-testing or re-inspection required because of a non-conformance to the specified requirements shall be performed by the same independent firm on instructions by the Design Agent or its Consultant. Payment for the re-testing or re-inspection will be charged to the Contractor by deducting the testing charges from the Contract Sum.

H. Agency Responsibilities:

1. Test samples of mixes submitted by the Contractor.
2. Provide qualified personnel at the site. Cooperate with the Design Agent or its Consultant and the Contractor in performance of services.
3. Perform specified sampling and testing of the products in accordance with the specified standards.
4. Ascertain compliance of the materials and mixes with the requirements of the Contract Documents.
5. Promptly notify the Design Agent, Consultant and the Contractor of observed irregularities or non-conformance of the Work or products.
6. Perform additional tests required by the Design Agent or its Consultants.
7. Attend the preconstruction meetings and the progress meetings.

I. Agency Reports: After each test, promptly submit two copies of the report to the Design Agent, appropriate Consultant, and to the Contractor. When requested by the Design Agent, provide an interpretation of the test results. Include the following:

1. Date issued.
2. Project title and number.

3. Name of inspector.
4. Date and time of sampling or inspection.
5. Identification of product and specifications section.
6. Location in the Project.
7. Type of inspection or test.
8. Date of test.
9. Results of tests.
10. Conformance with Contract Documents.

J. Limits On Testing Authority:

1. Agency or laboratory may not release, revoke, alter, or enlarge on the requirements of the Contract Documents.
2. Agency or laboratory may not approve or accept any portion of the Work.

K. Agency or laboratory may not assume any duties of the Contractor.

L. Agency or laboratory has no authority to stop the Work.

1.8 MANUFACTURERS' FIELD SERVICES

A. When specified in the individual specification Sections, require the material or Product suppliers, or manufacturers, to provide qualified staff personnel to observe the site conditions, the conditions of the surfaces and installation, the quality of workmanship, the start-up of equipment, or test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.

B. Submit the qualifications of the observer to the Design Agent 30 days in advance of the required observations. Observer is subject to approval of the Design Agent.

C. Report the observations and the site decisions or instructions given to the applicators or installers that are supplemental or contrary to the manufacturers' written instructions.

D. Refer to Section 01 33 00 - SUBMITTAL PROCEDURES, MANUFACTURERS' FIELD REPORTS article.

1.9 MOCK-UP REQUIREMENTS

A. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.

B. Accepted mock-ups shall be a comparison standard for the remaining Work.

C. Where mock-up has been accepted by Architect and is no longer needed, remove mock-up and clear area when directed to do so.

PART 2 - PRODUCTS NOT USED.

PART 3 - EXECUTION NOT USED.

END OF SECTION

01 50 00 – TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Temporary Utilities:
   1. Temporary electricity.
   2. Temporary lighting for construction purposes.
   3. Temporary heating.
   4. Temporary cooling.
   5. Temporary ventilation.
   6. Telephone service.
   7. Temporary water service.
   8. Temporary sanitary facilities.

B. Construction Facilities:
   1. Field offices and sheds.
   2. Hoisting.
   3. Parking/Traffic.
   4. Progress cleaning and waste removal.
   5. Project identification.
   6. Traffic regulation.
   7. Independent Food Vendors

C. Temporary Controls:
   1. Barriers.
   2. Enclosures and fencing.
   3. Security.
   4. Fire detection.
   5. Water control.
   6. Dust control.
   7. Erosion and sediment control.
   8. Noise control.
   9. Pest control.
   10. Pollution control.
   11. Rodent control.

D. Removal of utilities, facilities, and controls with reseeding and repair of grounds.

E. See Attachment A for any modifications.

1.2 TEMPORARY ELECTRICITY

A. The Owner will pay the cost of energy used. Exercise measures to conserve energy. Utilize the Owner's existing power service.

B. Complement the existing power service capacity and characteristics as required for construction operations.

C. Provide power outlets, with branch wiring and distribution boxes located at each floor or as required for construction operations. Provide flexible power cords as required for portable construction tools and equipment. All flexible power cords shall be suspended with hangers to eliminate trip hazards.

D. Provide main service disconnect and over-current protection at a convenient location or a feeder switch at the source distribution equipment or meter.

E. Permanent convenience receptacles may not be utilized during construction.

F. Provide distribution equipment, wiring, and outlets to provide single-phase branch circuits for power. Provide 20-ampere duplex outlets, single-phase circuits for power tools.

1.3 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

A. Provide and maintain incandescent lighting for construction (interior & exterior) operations to achieve a minimum lighting level of 2 watt/sq. ft. (21 watt/sq m).

B. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.

C. Maintain lighting and provide routine repairs.

D. Permanent building lighting may be utilized during construction where not removed.

1.4 TEMPORARY HEATING

A. Existing facilities will be occupied and heated by the College when temperatures require. Take care to avoid leaving doors open in exterior walls that could compromise heating operations. For new construction, the cost of energy will be borne by the Contractor. Provide temporary heating as necessary for construction operations.

B. Supplement with temporary heat devices if needed to maintain the specified conditions for construction operations even in existing buildings.

C. Maintain a minimum ambient temperature of 50 degrees F in the areas where construction is in progress, unless indicated otherwise in the product Sections.

D. In areas of work with mechanical hot-air heating, clean units and replace filters after Substantial Completion.

E. Do not use new equipment for heating after replacement during construction.

F. Provide temporary heating to occupied spaces if construction activities impact normal function of existing systems to occupied spaces. Submit an implementation plan for review and approval by RIC.

1.5 TEMPORARY COOLING

A. Existing facilities are not available.

B. Provide and pay for cooling devices and cooling as needed to maintain the specified conditions for construction operations.

C. Maintain a maximum ambient temperature of 80 degrees F in the areas where construction is in progress, unless indicated otherwise in the specifications.

D. Provide temporary cooling to occupied spaces if construction activities impact normal function of existing systems to occupied spaces. Submit an implementation plan for review and approval by RIC.

1.6 TEMPORARY VENTILATION

A. Ventilate the enclosed areas to achieve a curing of materials, to dissipate humidity, and to prevent the accumulation of dust, fumes, vapors, or gases.

B. If existing ventilation fans are used during construction, clean fans in areas of work after Substantial Completion.

C. Provide temporary ventilation to occupied spaces if construction activities impact normal function of existing systems to occupied spaces. Submit an implementation plan for review and approval by RIC.

1.7 TELEPHONE SERVICE

A. Provide, maintain, and pay for cell phone service to the field supervisor at the time of project mobilization.

1.8 TEMPORARY WATER SERVICE

A. The Owner will pay the cost of temporary water. Exercise measures to conserve energy. Utilize the Owner's existing water system, extend and supplement with temporary devices as needed to maintain the specified conditions for construction operations.

B. Extend branch piping with outlets located so that water is available by hoses with threaded connections. Provide temporary pipe insulation if needed to prevent freezing.

1.9 TEMPORARY SANITARY FACILITIES

A. Contractor needs to provide and maintain temporary toilet facilities for use by all construction personnel. Trades people will not be permitted to use existing facilities within the building.

1.10 FIELD OFFICES AND SHEDS

A. Do not use existing facilities for storage. Job meetings will be held on campus at a location to be chosen by the College.

B. Storage Areas and Sheds: Size to the storage requirements for the products of the individual Sections, allowing for access and orderly provision for the maintenance and for the inspection of Products to the requirements of Section 01 60 00. Containers will be permitted within the project limit line.

C. Preparation: Fill and grade the sites for the temporary structures to provide drainage away from the buildings.

D. Removal: At the completion of the Work remove the buildings, foundations, utility services, and debris. Restore the areas.

1.11 HOISTING

A. Contractor is responsible for all hoisting required to facilitate, serve, stock, clean, and complete the Work. Include all costs for Operating Engineers, fuel, delivery and removal, mobilization, staging, protection of grades and surfaces, and equipment.

1.12 PARKING/TRAFFIC

A. Workers must park in lots assigned by the College with daily permits. See Site Utilization Plan.

B. Use of designated existing on-site streets and driveways for construction traffic is permitted. Tracked vehicles are not allowed on paved areas.

C. Do not allow heavy vehicles or construction equipment in parking areas.

D. Do not allow vehicle parking on existing sidewalks.

E. Provide and maintain access to fire hydrants and control valves free of obstructions.

F. Remove mud from construction vehicle wheels before entering streets. Cleanup dirt, rocks, and debris left on street from construction vehicles.

G. Use designated existing on-site roads for construction traffic.

H. Maintenance:

1. Maintain the traffic and parking areas in a sound condition free of excavated material, construction equipment, products, mud, snow, and ice.
2. Maintain existing and permanent paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain the paving and drainage in original, or specified, condition.

I. Removal, Repair:

1. Remove temporary materials and at Substantial Completion.
2. Remove underground work and compacted materials to a depth of 2 feet; fill and grade the site as specified.
3. Repair existing and permanent facilities damaged by use, to the original or specified condition.

1.13 INDEPENDENT FOOD VENDORS

A. Independent or contracted food vendor trucks are prohibited on Rhode Island College's campus. Contractors are permitted to use college dining facilities (Donovan Dining, Café in Student Union, and The Galley Cafe in Building 3).

1.14 PROGRESS CLEANING AND WASTE REMOVAL

A. Maintain areas free of waste materials, debris, and rubbish. Maintain the site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other remote spaces, prior to enclosing the space.

C. Broom and vacuum clean the interior areas prior to the start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and rubbish from the site daily, as necessary to prevent an on-site accumulation of waste material, debris, and rubbish, and dispose off-site.

E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.15 PROJECT IDENTIFICATION

A. Project Identification Sign: One full color printed sign, 24 sq ft area, bottom 6 feet above the ground. With advanced permission, may also be incorporated into the scrim of the construction fencing.

1. Contents:
   a. Project title, and name of the Owner as indicated on the Contract Documents.
   b. Names and titles of the authorities.
   c. Names and titles of the Design Agent and Consultants.
   d. Name of the Design Agent Contractor.
2. Graphic Design, Colors, and Style of Lettering as designated by the Design Agent during construction.
3. Design all exterior signs and their structures to withstand a 60-miles/hr-wind velocity.

4. Finishes, Painting or Printing: Adequate to withstand weathering, fading, and chipping for the duration of construction.
5. Show content, layout, lettering, color, foundation, structure, sizes, and grades of members.

B. Installation:

1. Install the project identification sign within 15 days after the date of receipt of the Purchase Order from State of Rhode Island Department of Administration, Division of Purchases.
2. Erect at the designated location.
3. Erect the supports and framing on a secure foundation, rigidly braced and framed to resist wind loadings.
4. Install the sign surface plumb and level, with butt joints. Anchor securely.
5. Paint exposed surfaces of the sign, supports, and framing.

C. No other signs are allowed without the Owner's permission except those required by law.

D. Maintenance: Maintain the signs and supports clean, repair deterioration and damage.

E. Removal: Remove the signs, framing, supports, and foundations at the completion of the Project and restore the area.

1.16 TRAFFIC REGULATION

A. Signs, Signals, And Devices:

a. Post Mounted and Wall Mounted Traffic Control and Informational Signs: As approved by local jurisdictions.
b. Traffic Cones and Drums, Flares and Lights: As approved by local jurisdictions.
c. Flag person Equipment: As required by local jurisdictions.
d. Police Details: Provide all police details as required by local jurisdictions, including payment directly to applicable jurisdiction. **For this project, coordinate with RIC campus police, city, and state as required.**

B. Flag Persons: Provide trained and equipped flag persons to regulate the traffic when construction operations or traffic encroach on the public traffic lanes.

C. Flares and Lights: Use flares and lights during the hours of low visibility to delineate the traffic lanes and to guide traffic.

D. Haul Routes:

1. Consult with the authority having jurisdiction, establish the public thoroughfares to be used for haul routes and site access.

E. Traffic Signs and Signals:

1. At approaches to the site and on site, install at crossroads, detours, parking areas, and elsewhere as needed to direct the construction and affected public traffic.
2. Install and operate automatic traffic control signals to direct and maintain the orderly flow of traffic in areas under the Contractor's control, and areas affected by the Contractor's operations.
3. Relocate as the Work progresses, to maintain effective traffic control.

F. Removal:

1. Remove equipment and devices when no longer required.
2. Repair damage caused by installation.

3. Remove post settings to a depth of 2 feet.

1.17 BARRIERS

A. Provide barriers to allow for the Owner's use of the site and to protect existing facilities and adjacent properties from damage from the construction operations, or demolition.

B. Provide barricades and covered walkways required by RIC for public rights- of-way, or for public access to the building.

C. Provide protection for plants designated to remain. Replace damaged plants.

D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.18 ENCLOSURES AND FENCING

A. Construction: Provide 6-ft. high commercial grade chain link fence, with privacy scrim around on-site equipment or areas of site disturbance for the period required to protect work and the public. Equip with vehicular and pedestrian gates with locks. Provide one set of keys to all gates and door locks to the Owner.

B. Perform adjustment to the proposed layout as may be directed by the Owner.

C. Interior Enclosures:

1. Provide temporary partitions and ceilings as indicated to separate the work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to the existing materials and equipment.

2. Construction: Framing and reinforced polyethylene, plywood, or gypsum board sheet materials with closed joints and sealed edges at intersections with existing surfaces, as agreed with the Owner:

3. Maximum flame spread rating of 75 in accordance with ASTM E84.

1.19 SECURITY

A. Security Program:

1. Protect the Work, the existing premises, or the Owner's operations from theft, vandalism, and unauthorized entry.

2. Initiate the program in coordination with the Owner's existing security system at mobilization.

3. Maintain the program throughout the construction period until Owner occupancy of each designated area.

B. Entry Control: Coordinate the access of the Owner's personnel to the site in coordination with the Owner's security forces.

1.20 FIRE DETECTION

A. Before beginning any construction operation that can potentially trigger the existing fire alarm detection system, notify the Owner through use of the form provided in Section 01 10 00.

B. Failure to so notify the Owner will subject the Contractor to a monetary fine for each occurrence, should the fire detection system be activated inadvertently by a construction activity.

C. Comply with the Owner’s insurance underwriting standards and insurer recommendations for Hot Work, sprinkler impairment, and site maintenance.

1.21 WATER CONTROL

A. Grade the site to drain. Maintain excavations free of water. Provide, operate, and maintain the pumping equipment.

B. Protect the site from puddling or running water. Provide water barriers as required to protect the site from soil erosion.

1.22 DUST CONTROL

A. Execute the Work by methods to minimize raising dust from construction operations.

B. Provide positive means to prevent air-borne dust from dispersing into the atmosphere.

1.23 CLEANING

A. Contractor to maintain a neat and orderly work site. Trash shall be cleaned from site and surrounding area on a daily basis.

B. For projects within occupied buildings, contractor shall sweep and wet mop all floors on a daily basis for impacted spaces. Surfaces of desks, tables, etc. shall be covered during construction and cleaned of dust and debris.

1.24 NOISE CONTROL

A. Provide methods, means, and facilities to minimize noise produced by the construction operations.

1.25 PEST CONTROL

A. Provide methods, means, and facilities to prevent pests and insects from damaging the Work, or entering the facility.

1.26 POLLUTION CONTROL

A. Provide methods, means, and facilities to prevent the contamination of soil, water, and the atmosphere from discharge of noxious, toxic substances, and pollutants produced by the construction operations.

1.27 RODENT CONTROL

A. Provide methods, means, and facilities to prevent rodents from accessing or invading the premises.

1.28 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, and materials, prior to Substantial Completion.

B. Remove the underground installations to a minimum depth of 2 feet. Grade the site as indicated.

C. Clean and repair the damage caused by installation or use of temporary work.

D. Restore the existing and new facilities used during construction to their original condition.

E. Restore any temporary exterior laydown or storage areas to the original condition. After each use, regrade and reseed as required to meet this requirement.

PART 2 - PRODUCTS - NOT USED.

PART 3 - EXECUTION - NOT USED.

END OF SECTION

01 60 00 – PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Products.

B. Product delivery requirements.

C. Product storage and handling requirements.

D. Product options.

E. Product substitution procedures.

1.2 PRODUCTS

A. Products: Means new material, machinery, components, fixtures, or systems forming the Work; but does not include the machinery or equipment used for the preparation, fabrication, conveying, or erection of the Work. Products may include the existing materials or components required or specified for reuse.

B. Furnish products of qualified manufacturers suitable for the intended use. Furnish products of each type by a single manufacturer unless specified otherwise.

C. Do not use materials and equipment removed from the existing premises, except as specifically permitted by the Contract Documents.

D. Furnish interchangeable components of the same manufacturer for the components being replaced.

1.3 PRODUCT DELIVERY REQUIREMENTS

A. Transport and handle products in accordance with the manufacturer's instructions.

B. Promptly inspect shipments to ensure that the products comply with the requirements, the quantities are correct, and the products are undamaged.

C. Provide equipment and personnel to handle the products by methods to prevent soiling, disfigurement, or damage.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

A. Store and protect the products in accordance with the manufacturers' instructions.

B. Store with seals and labels intact and legible.

C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to the product.

D. For exterior storage of fabricated products, place on sloped supports above the ground.

E. Provide bonded off-site storage and protection when the site does not permit on-site storage or protection.

F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent the condensation and degradation of products.

G. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

H. Provide equipment and personnel to store the products by methods to prevent soiling, disfigurement, or damage.

I. Arrange storage of the products to permit access for inspection. Periodically inspect to verify that the products are undamaged and are maintained in acceptable condition.

1.5 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Products of one of the manufacturers named and meeting the specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named in accordance with the following article.

1.6 PRODUCT SUBSTITUTION PROCEDURES

A. Instructions to Bidders specify the time restrictions for submitting requests for Substitutions during the bidding period to requirements specified in this section.

B. Substitutions may be considered after the bid only in the following circumstances:

1. When a product becomes no longer in production following the date of receipt of the Purchase Order for this Contract. Submit certification both that specified product was carried in Bid, and is no longer obtainable. Provide cost change documentation.

2. There is a significant cost savings offered to the Owner. Provide price comparison of both bid and offered substitution products as well as all collateral costs of the change.

3. Code changes or site conditions require a different item from that bid. Submit as for 2 above.

C. Document each request with complete data substantiating the compliance of a proposed Substitution with the Contract Documents.

D. A request constitutes a representation that the Bidder:

1. Has investigated the proposed Product and determined that it meets or exceeds the quality level of the specified product.

2. Will provide the same warranty for the Substitution as for the specified Product.

3. Will coordinate the installation and make changes to other Work which may be required for the Work to be complete with no additional cost to the Owner, including redesign.

4. Waives claims for additional costs or time extension which may subsequently become apparent.

5. Will reimburse the Owner and the Design Agent for review or redesign services, including those associated with re-approval by the authorities having jurisdiction.

E. Substitutions will not be considered when they are indicated or implied on the Shop Drawing or Product Data submittals, without a separate written request, or when acceptance will require revision to the Contract Documents.

F. Substitution Submittal Procedure, If Permitted Following Contract Award:

1. Submit three copies of a request for Substitution for consideration, no later than 20 working days following date of receipt of the Purchase Order for this Contract. Limit each request to one proposed Substitution. Identify product of fabrication or installation method to be replaced. Include Specification Section number and title and Drawing number and title.

2. Submit the Shop Drawings, Product Data, and the certified test results attesting to the proposed product equivalence. The burden of proof is on the proposer.

3. The Design Agent will notify the Contractor in writing of a decision to accept or reject the request. Costs for review time on unsuccessful requests will be included in the next change order.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

01 70 00 – EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Examination.

B. Preparation.

C. Field Engineering.

D. Protection of adjacent construction.

E. Cutting and patching.

F. Special procedures.

G. Starting and adjusting of systems.

H. Demonstration and Instructions.

I. Testing, adjusting and balancing.

J. Protecting Installed Construction.

1.2 EXAMINATION

A. Acceptance of Conditions:

1. Verify that existing applicable site conditions, substrates, or substrate surfaces are acceptable or meet specific requirements of individual specifications Sections, for subsequent Work to proceed.
2. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.
3. Examine and verify specific conditions described in individual specifications Sections.
4. Verify that utility services are available, of correct characteristics, and in correct locations.
5. Beginning of new Work, that relies upon the quality and proper execution of Work of a preceding trade, means acceptance of that preceding Work as appropriate for the proper execution of subsequent Work.
6. Acceptance of preceding Work that can be shown later to have adversely affected proper performance of new Work may result in removal and repeat performance of all Work involved at no cost to the Owner.

1.3 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply substrate primer, sealer, or conditioner, required or recommended by manufacturer, prior to applying any new material or substance in contact or bond.

D. Prior to the application, installation, or erection of any products and product components, perform any other preparatory operations, or surface or substrate modifications, as may be specified or directed by product manufacturers.

1.4 FIELD ENGINEERING

A. Employ a Land Surveyor registered in the State of Rhode Island and acceptable to Design Agent and the Owner.

B. Locate and protect survey control and reference points. Promptly notify Design Agent of any discrepancies discovered.

C. Control Datum for survey is to be agreed to with the Design Agent.

D. Verify setbacks and easements, if any; confirm drawing dimensions and elevations.

E. Provide field-engineering services. Establish elevations, lines, and levels, utilizing recognized engineering survey practices.

F. Submit a copy of site drawings and certificate signed by the Land Surveyor that the elevations and locations of the Work are in conformance with the Contract Documents.

G. Maintain a complete and accurate log of control and survey work as it progresses.

H. If required by the Owner, on completion of foundation walls and major site improvements, prepare a certified survey illustrating dimensions, locations, angles, and elevations of construction and site work.

I. Protect survey control points prior to starting site work; preserve permanent reference point during construction.

J. Promptly report to Design Agent the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

K. Replace dislocated survey control point based on original survey control. Make no changes without prior written notice to Design Agent.

1.5 PROTECTION OF ADJACENT CONSTRUCTION

A. Protect existing adjacent properties and provide special protection where specified in individual Specification Sections.

B. Provide protective coverings at wall, projections, jambs, sills, and soffits of existing openings.

C. Protect existing finished floors, stairs, and other existing surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

D. Cover and protect furnishings, materials and equipment within the spaces receiving new work. Move items as necessary to install new work and return them to original locations at the close of construction in that area.

E. Repair adjacent properties damaged by construction operations to original condition to the satisfaction of the Owner.

F. Prohibit unnecessary traffic from existing landscaped areas.

G. Restore grassed landscaped areas damaged by construction operations to full healthy growth, by installing loam and sod to the requirements, and under the supervision of, the University's Associate Director of Lands and Grounds.

1.6 CUTTING AND PATCHING

A. Employ skilled and experienced installers to perform cutting and patching.

B. Submit written request in advance of cutting or altering elements which affect:

1. Structural integrity of element.

2. Integrity of weather-exposed or moisture-resistant elements.

3. Efficiency, maintenance, or safety of element.
4. Visual qualities of sight-exposed elements.
5. Existing construction, or Work of separate contractor.

C. Execute cutting, fitting, and patching including excavation and fill, to complete Work, and to:

1. Fit the several parts together, to integrate with other Work.
2. Uncover Work to install or correct ill-timed Work.
3. Remove and replace defective and non-conforming Work.
4. Remove samples of installed Work for testing.
5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.

D. Execute Work by methods that will avoid damage to other Work, and provide proper surfaces to receive patching and finishing.

E. Cut masonry, concrete, and other rigid materials using masonry saw or core drill.

F. Remove ceiling tiles as necessary to access areas of work. Store and replace carefully to avoid damage. Replace all ceiling tiles damaged during the work with new tiles to match. Repair ACT grid damaged during the work in accordance with this section.

G. Restore Work with new Products in accordance with requirements of Contract Documents.

H. Fit Work tight to pipes, sleeves, ducts, conduits, and other penetrations through surfaces.

I. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.

J. At penetration of fire rated partitions, ceiling, or floor construction, completely seal voids with fire rated or fire resistant material in accordance with Specifications, to full thickness of the penetrated element.

K. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit.

L. Identify any hazardous substance or conditions exposed during the Work to the Owner and Design Agent for decision or remedy.

M. See General Conditions for additional requirements.

1.7 SPECIAL PROCEDURES

A. Materials: As specified in product Sections; match existing with new products, or salvaged products as appropriate, for patching and extending work.

B. Employ skilled and experienced installer to perform alteration work.

C. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.

D. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.

E. Remove debris and abandoned items from area and from concealed spaces.

F. Prepare surface and remove surface finishes to provide installation of new Work and finishes.

G. Close openings in exterior surfaces to protect existing Work from weather and extremes of temperature and humidity.

H. Remove, cut, and patch Work in a manner to minimize damage and to provide means of restoring products and finishes to original or specified condition.

I. Refinish existing visible surfaces to remain in renovated rooms and spaces to specified condition for each material, with a neat transition to adjacent finishes.

J. Where new Work abuts or aligns with existing, provide a smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.

K. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and submit recommendation to Design Agent for review.

L. Where a change of plane of 1/4 inch or more occurs, submit recommendation for providing a smooth transition to Design Agent for review.

M. Trim existing doors as necessary to clear new floor finish. Refinish trim as required.

N. Patch or replace portions of existing surfaces which are damaged, or showing other imperfections.

O. Finish surfaces as specified in individual product Sections, or as indicated on the Drawings.

1.8 STARTING AND ADJUSTING OF SYSTEMS

A. Coordinate schedule for starting and adjusting of various equipment and systems.

B. Notify Design Agent and Owner seven days prior to starting and adjusting of each item.

C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, or other conditions which may cause damage.

D. Verify that tests, meter readings and specified electrical characteristics agree with those required by the equipment or system manufacturer.

E. Verify wiring and support components for equipment are complete and tested.

F. Execute starting and adjusting under supervision of responsible Contractor's personnel or manufacturer's representative, in accordance with manufacturer's instructions.

G. Adjust operating Products and equipment to ensure smooth and unhindered operation.

H. When specified in individual specifications Section, require manufacturer to provide authorized representative to be present at the site to inspect, check, and approve equipment or system installation prior to starting, and to supervise placing of equipment or system in operation.

I. Submit a written report in accordance with Section 01 40 00 that equipment or system has been properly installed and is functioning correctly.

1.9 DEMONSTRATION AND INSTRUCTIONS

A. Demonstrate operation and maintenance of Products to Owner's personnel two weeks prior to date of Substantial Completion.

B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

C. Utilize operation and maintenance manuals as basis for instruction. Review contents of manuals with Owner's personnel in detail to explain all aspects of operation and maintenance.

D. Demonstrate start-up, operation, control, adjustment, trouble shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled or agreed upon times, at equipment or system location.

E. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

1.10 TESTING, ADJUSTING, AND BALANCING

A. Submit, for the Owner's approval, the name of an independent firm to perform testing, adjusting and balancing of systems. The independent firm's services will be paid for by the Contractor.

B. The independent firm will perform services specified in individual specifications Sections.

C. Reports will be submitted by the independent firm to the Design Agent and the Owner indicating observations and test results, indicating compliance or non-compliance with specified requirements and with the requirements of the Contract Documents.

1.11 PROTECTING INSTALLED CONSTRUCTION

A. Protect installed Work and provide special protection where specified in individual specification sections.

1. IT wires shall not be painted. IT wires, faceplates, racks and other components shall be fully protected during painting activities. IT wires which have been painted or exposed to paint splatter shall be replaced and terminated at no cost to the Owner upon request.

B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

E. Repair or replace installed Work damaged by construction operations, as directed by the Design Agent.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

01 74 00 – WASTE MANAGEMENT

PART 1 - GENERAL

1.1 WASTE MANAGEMENT REQUIREMENTS

A. Owner requires that this project generate the least amount of trash and waste possible.

B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.

C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.

D. Required Recycling, Salvage, and Reuse: The following may not be disposed of in landfills or by incineration:

1. Aluminum and plastic beverage containers.
2. Corrugated cardboard.
3. Wood pallets.
4. Clean dimensional wood: May be used as blocking or furring.
5. Land clearing debris, including brush, branches, logs, and stumps.
6. Metals, including packaging banding, metal studs, sheet metal, structural steel, piping, reinforcing bars, door frames, and other items made of steel, iron, galvanized steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
7. Glass.
8. Gypsum drywall and plaster.
9. Plastic buckets.
10. Paper, including wrapping, newsprint, and office.

E. Methods of trash/waste disposal that are not acceptable are:

1. Burning on the project site.
2. Burying on the project site.
3. Dumping or burying on other property, public or private.
4. Other illegal dumping or burying.

F. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.2 RELATED REQUIREMENTS

A. Section 01 30 00 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.

B. Section 01 50 00 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.

C. Section 01 60 00 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.

D. Section 01 70 00 - Execution Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

1.3 DEFINITIONS

A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.

B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.

C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.

D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.

E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.

F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.

G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.

H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.

I. Return: To give back reusable items or unused products to vendors for credit.

J. Reuse: To reuse a construction waste material in some manner on the project site.

K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.

L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.

M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.

N. Toxic: Poisonous to humans either immediately or after a long period of exposure.

O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.

P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 WASTE MANAGEMENT PROCEDURES

A. See Section 01 10 00 for list of items to be salvaged from the existing building for relocation in project or for Owner.

B. See Section 01 30 00 for additional requirements for project meetings, reports, submittal procedures, and project documentation.

C. See Section 01 50 00 for additional requirements related to trash/waste collection and removal facilities and services.

D. See Section 01 60 00 for waste prevention requirements related to delivery, storage, and handling.

E. See Section 01 70 00 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

3.2 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.

B. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.

1. Provide containers as required.
2. Provide adequate space for pick-up and delivery and convenience to subcontractors.
3. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.

C. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.

D. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.

E. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.

F. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

01 77 00 – CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Closeout procedures and submittals.

B. Quality assurance.

C. Maintenance service.

D. Owner’s Manual

1. Operations and maintenance manuals.
2. Materials and finishes manuals.
3. Equipment and systems manuals.

E. Spare parts and maintenance materials.

F. Product warranties and product bonds.

G. Project Record documents.

1.2 RELATED REQUIREMENTS

A. Section 01 30 00 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.

B. Individual Product Sections: Specific requirements for operation and maintenance data.

C. Individual Product Sections: Warranties required for specific products or Work.

1.3 CLOSEOUT PROCEDURES AND SUBMITTALS

A. The Owner will occupy all portions of the building after Substantial Completion as specified in Section 01 10 00.

B. Closeout Submittals

1. Submit a written certification that the Contract Documents have been reviewed, the Work has been inspected, and that the Work is complete in accordance with the Contract Documents and is ready for the Owner's review.
2. Provide submittals to Design Agent that are required by governing or other authorities, including abatement documentation, including but not limited to waste manifests, air clearance testing reports and other documentation correctly prepared as proscribed in the abatement plan. Failure to include correctly prepared abatement documentation will delay issuing of final payment.
3. Provide submittals to Design Agent that are required by the governing or other authorities, including the following closeout documents:
   a. AIA Document G706 - Contractor's Affidavit of Payment of Debts and Claims
   b. AIA Document G706A - Contractor's Affidavit of Release of Liens
   c. AIA Document G707 - Consent of Surety to Final payment
4. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
5. Owner’s Manual

6. Spare Parts and Maintenance Products
7. Product Warranties and Product Bonds
8. Project Record Documents

1.4 QUALITY ASSURANCE

A. Employ personnel assembling submittals experienced in the maintenance and the operation of the described products and systems.

1.5 OWNER'S MANUAL

A. Submit the data for Operations and Maintenance, Materials and Finishes, and Equipment and Systems Manuals bound in 8-1/2 x 11 inch text pages, in minimum 2 inch size three D side ring commercial quality binders with durable cleanable plastic covers.

B. Prepare binder covers with the printed title of the manual, title of the project, and the subject matter of binder. Label each spine with the following: Building, project or facility name, OCP project number, submission date.

C. Submit two (2) copies of a preliminary draft of the proposed formats and outline of the contents before the start of work. The Design Agent and its consultants will review drafts and return one (1) copy with comments. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten (10) days after acceptance.

D. Submit one (1) copy of the completed volumes fifteen (15) days prior to final inspection for final review. This copy will be reviewed and returned after final inspection, with the Design Agent's comments. Revise the content of the document sets as required prior to final submission.

E. Submit four (4) sets of revised final volumes plus electronic copy in final form within ten (10) days after final inspection.

F. Internally subdivide the binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.

1. Equipment List
   a. Provide a summary list of all equipment installed during the work: provide a list in Microsoft Excel of installed equipment, including make, model name, model number, serial number, location and area served. Include names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
   b. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
   c. Each Item of Equipment and Each System: Include a description of the unit or system, and the component parts. Identify the function, normal operating characteristics, and limiting conditions. Include performance curves, with priming data and tests, and complete nomenclature and model number of replaceable parts.
   d. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
   e. Include color-coded wiring diagrams as installed.
   f. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shutdown, and emergency instructions. Include summer, winter, and special operating instructions.

g. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

h. Include a servicing and lubricating schedule, and a list of lubricants required.

i. Include the manufacturer's printed operation and maintenance instructions.

j. Include sequence of operation by the controls manufacturer.

k. Include the original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

l. Include control diagrams by the controls manufacturer as installed.

m. Include the Contractor's coordination drawings, with color-coded piping diagrams as installed.

n. Include charts of valve tag numbers, with the location and function of each valve, keyed to the flow and control diagrams.

o. Include a list of the original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

p. Include test and balancing reports as specified in Section 01 40 00.

q. Additional Requirements: As specified in the individual product specification Sections.

2. Operations and Maintenance Manuals

a. **Part 1:** Directory, listing the names, addresses, and telephone numbers of the Design Agent, its Consultants, Contractor, Subcontractors, and major equipment suppliers.

b. **Part 2:** Operation and maintenance instructions arranged by system and subdivided by the specification Section. For each category, identify the names, addresses, and telephone numbers of the Subcontractors and suppliers. Identify the following:

1. Significant design criteria.
2. List of equipment.
3. Parts list for each component.
4. Operating instructions.
5. Maintenance instructions for equipment and systems.
6. Maintenance instructions for [special] finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.

c. **Part 3:** Project documents and certificates, including the following:

1. Shop drawings and product data.
2. Air and water balance reports.
3. Certificates.
4. Originals of warranties and bonds.

3. Materials and Finishes Schedule

a. Building Products, Applied Materials, and Finishes: Include product data, with the catalog number, size, composition, and the color and texture designations. Include information for re- ordering custom manufactured products.

b. Instruction for Care and Maintenance: include manufacturer's instructions for cleaning agents and methods, precautions against detrimental agents and methods, and a recommended schedule for cleaning and maintenance.

c. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Include recommendations for inspections, maintenance, and repair.

d. Additional Requirements: As specified in the individual product specification Sections.

e. Include a listing in the Table of Contents for design data, with a tabbed flysheet and a space for the insertion of data.

4. Drawings: Provide with reinforced punched binder tab. Bind in with the text; fold the larger drawings to the size of the text pages.

1.6 SPARE PARTS AND MAINTENANCE PRODUCTS

A. Furnish spare parts, maintenance, and extra products (attic stock) in the quantities specified in the individual specification Sections.

B. Deliver to the Project site and place in a location as directed by the Owner; obtain a receipt prior to final payment.

1.7 PRODUCT WARRANTIES AND PRODUCT BONDS

A. Warranty period shall commence at date of substantial completion.

B. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.

C. Retain warranties and bonds until time specified for submittal.

D. Execute and assemble the transferable warranty documents and bonds from the subcontractors, suppliers, and manufacturers.

E. Verify that the documents are in the proper form, contain full information, and are notarized.

F. Include in the Operations and Maintenance Manuals within the appropriate material specification section, indexed separately on Table of Contents.

G. Closeout Submittals Warranties and Bonds:

1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.

2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.

3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

1.8 PROJECT RECORD DOCUMENTS

A. Maintain on the site one set of the following record documents; record actual revisions of the Work for all trades:

1. Drawings.

2. Specifications.

3. Addenda.

4. Change Orders and other modifications to the Contract.

5. Reviewed Shop Drawings, Product Data, and Samples.

6. Manufacturer's instructions for assembly, installation, and adjusting.

B. Ensure the entries are complete and accurate, enabling future reference by the Owner.

C. Store the record documents separate from the documents used for construction.

D. Record information concurrent with the construction progress, not less than weekly.

E. Specifications: Legibly mark and record at each product Section description of the actual products installed, including the following:

1. Manufacturer's name and product model and number.
2. Product substitutions or alternates utilized.
3. Changes made by Addenda and modifications.

F. Record Drawings and Shop Drawings: Legibly mark each item to record the actual construction including:

1. Measured horizontal and vertical locations of the underground utilities and appurtenances, referenced to permanent surface improvements. Include the locations and description of any existing utility lines and other existing installations of any kind or description encountered during construction. Note all changes in size, material, location, and elevation of all new or abandoned underground utility lines and pertinent work, including site grading. Document topography and drainage changes. Show the location of all valves, manholes, etc. and include dimensions to permanent features such as building corners. Note direction of each new valve opening. Show clearances between new utilities and existing crossed lines. Locate all bends, thrust blocks, and other restraints.
2. The placement, size, and type of any fire extinguishers.
3. Measured locations of internal utilities and appurtenances concealed in the construction.
4. Field changes of dimension and detail.
5. Details not on the original Contract drawings.

G. Legibly marked Specifications, and legibly marked Record Drawings and Shop Drawings shall constitute the Project Record Documents in paper form.

H. Closeout Submittals: Project Record Documents: Submit documents to Architect with claim for final Application for Payment.

1. Submit two (2) electronic copies and three (3) print copy of all documents.
2. At completion of the Work of the Contract, the Contractor shall retain competent drafting personnel to transfer the information from the Project Record Documents in paper form to editable electronic formats to create “As-Built” Documents on base files provided by the Design Agent. The record construction drawings shall be produced in both AutoCAD format plus a record PDF copy of each drawing. AutoCAD files shall include all XREF, font, image, shape, and plot files. PDF files shall be saved full sheet size. The record Project Manual shall be in Microsoft Word form plus a record PDF of the entire manual. The electronic media containing this information will constitute the Project Record Documents in digital form, sometimes referred to as the “As-Built” Documents. Acceptable media are write-protected CD-R format discs or flash drives. Submit one full size printed set of drawings and specifications on 20 lb. white bond made from the As-Built files in addition to the electronic media.
3. Associated materials including but not limited to the following are also required to be submitted at project close-out: shop drawings and cut sheets, RFIs, correspondence and meeting minutes, LEED scorecards, construction progress photographs, DEM permits including generator permits, certificates including Final Certificate of Occupancy, boiler

and elevator certificates, easement rights, National Grid Rebate Applications, test and inspection documentation including fire pump test data, asbestos abatement plans and manifests. These materials may be submitted in either paper or PDF digital format, organized by specification number, and clearly labeled. If paper copies are submitted, each box must be clearly labeled as to specific contents.

4. If the project required geotechnical, archeological, or other miscellaneous studies or other reports, these shall also be submitted as Record Document in either paper or digital format.

I. Labeling: In all cases, paper or digital submissions must contain the following information: Building, project or facility name, OCP Project number, submission date, and specific content index.

J. No review or receipt of Project Record Documents by the Design Agent or the Owner shall be interpreted as a waiver of any deviation from the Contract Documents or Shop Drawings, or in any way relieve the Contractor from responsibility to perform the Work in accordance with the Contract Documents and the Shop Drawings.

K. Update the on-site Project Record Documents on a regular basis. Monthly payments will not be processed if Project Record Documents are not maintained up to date

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.

b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.

c. Rake grounds that are not planted, mulched, or paved to a smooth, even-textured surface.

d. Remove tools, construction equipment, machinery, and surplus material from Project site.

e. Remove snow and ice to provide safe access to building.

f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.

h. Sweep concrete floors broom clean in unoccupied spaces.

i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.

j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.

k. Remove labels that are not permanent.

l. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.

m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.

n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.

o. Clean ducts, blowers, and coils if units that display contamination with particulate matter on inspection.

p. Clean HVAC system in compliance with NADCA ACR. Section 230130.51 "HVAC Air-Distribution System Cleaning. Provide written report on completion of cleaning.

q. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.

r. Leave Project clean and ready for occupancy.

C. Pest Control: Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls."

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair, or remove and replace, defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.

2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.

a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION

DIVISION 23 00 00 – MECHANICAL

PART 1: GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division-1 Specification Sections, apply to work of this Division.

1.2 SUMMARY OF WORK

A. Provide complete functional Heating, Ventilating and Air Conditioning system as shown on Mechanical Construction Documents.

1.3 REFERENCE STANDARDS

A. NFPA Standards

B. ANSI Standards

C. ASME Standards

D. ASTM Standards

E. AWWA Standards

F. ASHRAE Standards

G. SMACNA Standards

H. OSHA Standards

I. NEBB Standards

J. Local Codes and Ordinances

K. Owner's Insurance Company Requirements

L. Where the contract documents indicate more stringent requirements than the above codes and ordinances, the contract documents shall take precedence.

M. File all documents, pay all fees and secure all permits, inspections and approvals necessary for the work of this Division.

1.4 CONTRACT DRAWINGS & SPECIFICATIONS

A. The Contract Drawings are generally diagrammatic and convey the Scope of Work and General Arrangement of apparatus and equipment. The locations of all items shown on the drawings or called for in the specifications that are not definitely fixed by dimensions are approximate only. The exact locations necessary to secure the best conditions and results must be determined at the project and shall have the approval of the Architect and Engineer before being installed. The Subcontractor shall follow drawings in laying out work and shall check drawings of the other trades to verify spaces in which work will be installed. Maintain maximum headroom and space conditions at all points. If directed by the General Contractor, Engineer and/or Architect, the Subcontractor shall, without extra charge, make reasonable modifications in the layout as needed to prevent conflict with work of other trades or before proper execution of the work.

B. Specifications: The specifications are intended only to complement the drawings; however, work detailed and/or noted only on the drawings or work described only in the specifications shall all be considered as part of the scope of work.

1.5 CONFLICT BETWEEN PLANS AND SPECIFICATIONS

A. In case of conflict between the contract drawings and specifications, the Engineer shall determine which takes precedence.

B. In case of a conflict between specifications in this Division and Division 0 and/or 1, the specifications in Divisions 0 and 1 shall prevail.

1.6 PERMITS

A. Obtain all required mechanical permits and pay all fees for same.

B. Provide to Engineer, in duplicate, a certificate of final inspection from the authority having jurisdiction for the mechanical work.

1.7 SHOP DRAWINGS AND PRODUCT DATA

A. SUBMITTALS: Submit shop drawings, manufacturers data and certificates for equipment, materials and finish, and pertinent details for each system where specified in each individual section, and have them approved before procurement, fabrication, or delivery of the items to the job site. Partial submittals will not be acceptable and will be returned without review. Submittals shall include the manufacturer's name, trade name, catalog model or number, nameplate data, size, layout dimensions, capacity, project specification and paragraph reference, applicable industry, and technical society publication references, and other information necessary to establish contract compliance of each item the Contractor propose to furnish.

B. Submit in accordance with Division 1.

C. It is the intent of the these specifications that all equipment, materials and workmanship used on this project be in complete conformance with all local, state and national codes, ordinances and standards.

D. Substitutions shall be equivalent to specified equipment in all aspects of quality and performance and shall conform to the intent stated above. It is the contractor's responsibility to submit only those items that meet these requirements. Should any non-conforming items be installed, they shall be replaced by the contractor at no additional cost to the owner.

E. The approval of the equipment does not relieve the Subcontractor of responsibility of shop drawing errors related to details, sizes, quantities, wiring diagram arrangements and dimensions which deviate from the Specifications, and/or job conditions as they exist.

F. Refer to General Requirements for the substitutions of equipment and submittal of shop drawings. If apparatus or materials are substituted for those specified, and such substitution necessitates changes in, or additional connections, piping, supports, or construction, it shall be provided. Contractor to assume cost and entire responsibility thereof.

1.8 INSPECTION AND TESTS

A. During the progress of the work it shall be subject to the inspection of the Owner and to such other inspectors, as may have jurisdiction.

B. At completion of the work, Contractor shall submit to the Owner's representative in writing a statement stating: (1) that the work is complete; (2) that the entire installation is in accordance with the specification; (3) that preliminary tests have been made; and (4) that the work is ready for final inspection and test.

C. A final inspection of the installation to determine compliance with the drawing and specifications will be made by the Owner's representative. Work will be checked for quality of materials, quality of workmanship, proper installation and finished appearance. This Contractor shall provide the services of the project foreman for inspection purposes. The

foreman shall remove and reinstall access panels, ceiling tiles, etc., as required to facilitate any inspections required by the Owner's representative.

D. The Contractor shall arrange and conduct operating tests on all equipment in the presence of the Owner's representative. The component parts of systems and the various systems shall be demonstrated to operate in accordance with the requirements and intent of this specification. Any non-complying or defective materials or workmanship disclosed as a result of the inspection and the Contractor shall correct tests promptly, and the tests repeated as often as necessary until approved and accepted by the Owner's representative.

1.9 ELECTRICAL EQUIPMENT

A. Electrical components of mechanical equipment and systems, such as motors, factory mounted motor starters, disconnects, and control equipment shall be provided under the related Section of Division 230000.

B. Temperature control equipment, including thermostats, zone valves, relays, aquastats, etc. shall be provided under related sections of Division 230000. Temperature control wiring not specifically shown on electrical drawings shall be provided under related Section of Division 230000.

C. Upon completion of temperature control system wiring, the responsibility of the control system will fall under Division 230000.

D. All electrical equipment installed in concealed spaces shall be provided with a hard-wired electrical connection. Plug-type disconnects shall not be allowed in concealed spaces. Equipment provided with plug-in cords shall not have their cords modified.

1.10 OPENINGS IN EXTERIOR WALLS OR ROOF

A. Openings in exterior walls or roof shall be kept properly plugged and caulked at all times, except when being worked on to preclude the possibility of flooding due to storm or other causes. After completion of work, openings shall be permanently sealed and caulked in a manner approved by the Architect.

B. Contractor shall be responsible to correct damage to the facility and/or owner’s equipment resulting from the failure of temporary or permanent patches to the exterior envelope.

1.11 GUARANTEE

A. Except as otherwise specified, all work, materials and equipment shall be guaranteed against defects resulting from the use of inferior materials, equipment, or workmanship for one year from the date of final completion of the contract, or from full acceptance by the Owner, whichever is later.

B. If, within any guarantee period, repairs or changes to guaranteed work are required as a result of the use of defective materials or equipment, inferior workmanship or work that is not in accordance with the terms of the contract, and upon receipt of notice from the Owner, the following shall be done without expense to the Owner.

1. Place in satisfactory condition in every particular all of such guaranteed work and correct all defects therein.

2. Repair all damage to the building or site/equipment or contents thereof which is the result of the use of defective materials or equipment or inferior workmanship, or of work not in accordance with the terms of the contract.

3. Make good any work or materials, or the equipment and contents of said building or site disturbed in fulfilling any such guarantee.

4. In fulfilling the requirements of the contract or of any guarantee embraced in or

required thereby, any work guaranteed under another contract is disturbed, restore such disturbed work to original condition and guarantee such restored work to the same extent as it was guaranteed under such other contract.

5. If upon failure to proceed promptly after notice to comply with the terms of the guarantee, the Owner may have the defects corrected and Contractor and his surety shall be liable for all expenses incurred.

C. This Contractor shall obtain in the General Contractor's and Owner's name, the standard written manufacturer's guarantee of all materials furnished under this Division where such guarantees are offered in the manufacturer's published product data. All these guarantees shall be in addition to, and not in lieu of, other liabilities, which the Contractor may have by law or other provisions of the Contract Documents. The guarantee shall be for a period of one (1) year minimum from the date of acceptance or final payment.

1.12 CLEANING OF SYSTEM

A. Thoroughly clean piping, ducts, fixtures and equipment of all foreign substances inside and out before placing in operation. All air handling equipment shall be provided with “construction filters” for use during construction. Once construction is substantially complete and prior to final testing adjusting and balancing, furnish and install new MERV 11 filters for each piece of equipment.

B. If any foreign matter should stop any part of a system after being placed in operation, clean and reconnect system.

C. Remove all covers of interior floor drains and cleanouts, clean of all dirt, concrete traces, etc., then lightly grease and reinstall.

D. Existing HVAC systems which are being tied into or otherwise modified shall be thoroughly cleaned and refurbished prior to being placed back in service.

1. Duct Systems shall be cleaned of all foreign contaminants, dust and debris.
2. Hydronic Systems shall be fully flushed, cleaned, refilled and treated.
3. During contractor shall bring to the attention of the owner and engineer any perceived deficiencies in existing systems including but not limited to:

a) Code deficiencies
b) Inoperable equipment
c) Leaking ductwork and/or piping
d) Missing or deteriorating insulation
e) Excessive noise

1.13 TEMPORARY OPENINGS

A. Coordinate construction and provide temporary openings in the building as required for the admission of equipment furnished under this Division.

1.14 DEFINITIONS

A. "Piping" includes, in addition to pipe, all fittings, valves, hangers, and other accessories relating to such piping.

B. "Concealed" means hidden from sight in trenches, chases, furred spaces, shafts, hung ceilings, embedded in construction or in crawl spaces.

C. "Exposed" means not installed underground or "concealed" as defined above.

D. "Provide" means furnish and install complete and ready to operate.

1.15 EQUIPMENT DEVIATIONS

A. Where proposals to use an item of equipment other than that specified which requires any redesign of the structure, partitions, foundations, piping, wiring or any other part of the mechanical, electrical or architectural layout, all such redesign, and all new drawings and detailing required therefore, shall be prepared by the Architect at the Contractor's expense.

B. Where such approved deviation requires a different quantity and arrangement of ductwork, piping, wiring, conduit, and equipment from that specified or indicated on the drawings, furnish and install any such ductwork, piping, structural supports, insulation, controllers, motors, starters, electrical wiring and conduit, and any other additional equipment required by the system, at no additional cost to the Owner.

1.16 ELECTRICAL ROOM REQUIREMENTS

A. Do not install any piping, ductwork or equipment in or through electrical rooms, transformer rooms, electrical closets, telephone rooms or elevator machine rooms, unless piping or ductwork of equipment is intended to serve these rooms. Additionally, no ductwork or piping will be installed above electric panels. If the Contractor violates this requirement, he shall remove and/or relocate all items as required at his expense and to the satisfaction of the Architect.

1.17 COOPERATION WITH OTHER TRADES

A. Give full cooperation to other trades and furnish in writing to the Architect any information necessary to permit the work of all trades to be installed satisfactorily and with the least possible interference or delay.

B. Coordination drawings shall be initiated by this contractor. It this contractor's responsibility for preparation of project coordination drawings showing the installation of all equipment, piping, ducts and accessories to be provided under Division 230000 of the Specifications. These drawings shall be prepared at not less than 1/4 in. = 1 ft. scale, and shall show building room layouts, structural elements, ductwork and lighting layouts of function. Drawings shall indicate horizontal and vertical dimensions, to avoid interference with structural framing, ceilings, partitions, and other services. A reproducible copy of each drawing prepared shall then be submitted to each Contractor working under Division 260000, who shall be responsible to coordinate his equipment and systems and shall show these on the drawings submitted. After each Contractor has fulfilled his obligation, he shall return the drawings to the HVAC Contractor. After each drawing has been coordinated between trades, and appropriate revisions made, each trade shall sign each drawing, indicating acceptance of the installation. The HVAC Contractor shall then print the coordination original and these prints submitted through the General Contractor to the architect for review and comment, similar to shop drawings. Comments made on these drawings shall result in a correction and re-submittal of the drawings.

C. Furnish to other trades, as required, all necessary templates, patterns, setting plans, and shop details for the proper installation of work and for the purpose of coordinating adjacent work.

1.18 PROJECT RECORD DOCUMENTS:

A. Each Contractor shall record clearly, neatly, accurately, and promptly as work progresses the following data:

1. Changes made resulting from change orders or instructions issued by the Architect.
2. Changes in routing made to avoid conflict with other trades or structural conditions.

3. Final location of equipment and panels if different than contract documents.

B. Upon completion of the project submit to the Architect a set of electronic media noting "as built" conditions indicating all variations and deviations of his work from contract documents.

1.19 OPERATING INSTRUCTIONS AND MAINTENANCE MANUALS

A. Operating Instructions: Provide operating instructions to the Owner's designated representative with respect to the operation functions and maintenance procedures for all equipment and systems installed. The cost of providing a manufacturer's representative at the site for instructional purposes shall be included in the Contract Price.

B. Maintenance Manuals: At the completion of the project, turn the following over to the General Contractor:

1. Complete shop drawings of all material and equipment of this Division.
2. Operation descriptions of all systems.
3. Names, addresses and telephone numbers of all suppliers of system components.
4. Preventative maintenance instructions for all systems.
5. Spare parts list of all system components.
6. Copies of all valve charts.

In addition, provide all that is required for the contractor to comply with Part 1, Section 1.6 of the Closeout Requirements in the Division 1 specification.

1.20 PROTECTION

A. Protect all work and material from damage by work and workmen, and accept liability for all damage thus caused.

B. Be responsible for work and equipment until finally inspected, tested, and accepted. Protect work against theft, injury or damage; and carefully store material and equipment received on site, which is not immediately installed. Close open ends of work with temporary covers or plugs during storage and construction to prevent entry of obstructing material.

C. All openings in stored & installed ductwork shall be covered & sealed when not in use to prevent contamination from dust & debris.

1.21 SCAFFOLDING, RIGGING AND HOISTING

A. Provide scaffolding, rigging, hoisting and services necessary for delivery, erection and installation of material, equipment and apparatus furnished under this division. Remove same from premises upon completion of work.

B. A site utilization plan must be provided and approved by the Owner before undertaking any work.

C. Coordinate proposed routing with owner prior to rigging and protect all existing building components against damage.

1.22 MATERIALS AND WORKMANSHIP

A. All materials and apparatus required for the work, except as specifically specified otherwise, shall be new, of first-class quality, and shall be furnished, delivered, erected, connected and finished in every detail, and shall be so selected and arranged as to fit properly into the building spaces. Where no specific kind or quality of material is given, a first-class standard article as approved by the Architect shall be furnished.

B. Furnish the services of an experienced foreman who shall be constantly in charge of the installation of the work, together with all skilled workmen, fitters, metal workers, welder, helpers, and labor required to unload, transfer, erect, connect, adjust, start, operate, and test each system.

C. All equipment and materials shall be installed in strict accordance with the manufacturer's recommended installation instructions as well as UL Listing instructions and all Local, State and National codes.

1.23 QUIET OPERATION AND VIBRATION

A. Work shall operate under all conditions of load without any objectionable sound or vibration. In case of moving machinery, sound, or vibration noticeable outside of room in which it is installed, or annoyingly noticeable inside its own room, will be considered objectionable. Sound or vibration conditions considered objectionable shall be corrected in an approved manner at no expense to the Owner. Vibration control shall be means of approved vibration eliminators in a manner as recommended by the manufacturer of the eliminators.

B. Ensure that all work complies with Part 3, Execution, in the Division 1 specification.

1.24 ACCESSIBILITY

A. Assure and be responsible for the adequacy of shafts and chases, the adequate clearance in double partitions and hung ceilings for the proper installation of the work. Cooperate with all other trades whose work is in the same space. Such spaces and clearances shall, however, be kept to the minimum size required.

B. Locate all equipment, which must be serviced, operated, adjusted or maintained fully accessible positions. Equipment shall include, but not be limited to, valves, traps, cleanouts, motors, controllers, filters, dampers, starters, coils, fire dampers, smoke dampers and drain points. If required for better accessibility, furnish access doors for this purpose. Minor deviations from drawings may be made to allow for better accessibility, and the engineer shall approve any change.

C. Furnish and install access panels in concrete block walls or gypsum wallboard ceilings and partitions in locations, which require access for service to the items located behind the permanent gypsum wallboard or concrete block finish.

D. Access panels shall be installed where required to gain access to valves, dampers, controls, etc. Panels shall be flush, insulated, contain continuous steel hinge and screwdriver operated latch. Panels shall be rated equal to the assembly that they are being installed in panels shall be UL listed.

E. Access panels located in fire rated partitions shall be fire panels. The frame and panel assembly of these fire panels shall be manufactured under the Factory Inspection Service of the Underwriters' Laboratories, Inc., and shall bear a label reading: "Frame and Fire Panel Assembly, Rating 2 hours. (B) Temperature Rise 30 Minutes, 250° F. Maximum." Rated panels shall be equipped with automatic closing mechanism and be self-latching.

F. Panels shall be provided with screwdriver operated flush cam locks.

G. Panel size shall be 12 inches x 12 inches except furnish a larger size if required to service a particular item. The exact location and size of each access panel shall be reviewed with, and approved by, the Engineer.

1.25 CUTTING AND PATCHING

A. Provide all cutting and patching necessary to install the work specified in this division. Patching shall match adjacent surfaces.

B. At floor slabs & wall openings to be cored drilled or cut, contractor shall find and mark on both faces all reinforcing, rebar, conduits, utilities, etc.. by means of x-ray, pach-ometer or prof-ometer. Submit sketch showing locations of all findings and proposed cuts or cores for review. Costs of all such work shall be included in the bid price.

C. No structural members shall be cut without the approval of the Structural Engineer, and all such cutting shall be accomplished in a manner directed by the Structural Engineer.

1.26 GROUNDING

A. All components of mechanical piping systems shall be properly grounded to building ground. Where ground path is interrupted by non-conductive materials, appropriate bonding or grounding to building ground shall be provided.

1.27 WATERPROOFING

A. Where any work pierces waterproofing including waterproof concrete, the method of installation shall be as approved by the Architect before work is started. Furnish all necessary sleeves required.

1.28 DEMOLITION (WHERE APPLICABLE)

A. Prior to submitting bid, visit site and identify existing conditions and difficulties that will affect work of this Division. Demolition work will require careful site examination prior to bidding. No compensation will be granted for additional work caused by unfamiliarity with site conditions that are visible or readily construed by experienced observers.

B. Prior to commencing demolition, contractor shall identify with owner any equipment to be returned to the owner after demolition. All other debris shall be disposed of by this contractor in accordance with all applicable regulations. Any shutdowns required for demolition shall be coordinated with building owner to avoid impact to operations.

C. During demolition, any equipment, ductwork, piping, etc. found to be abandoned shall be demolished. Existing unused connections to existing ducts or piping shall be cut back to the mains and capped accordingly.

D. Under demolition, the following is, in brief, the extent of the work to be performed by the mechanical contractor under this contract.

1. The mechanical contractor shall be responsible for the disconnection and removal of the existing mechanical equipment, ductwork, piping, valves, etc.,in designated areas. Cut & cap piping and ductwork back to mains. Patch all roof and wall penetrations to match existing.

2. This contractor shall protect work against injury or damage; and carefully store material and equipment to be relocated. Open ends of work shall be closed with temporary covers or plugs during storage and construction to prevent entry of obstructing material.

3. All existing HVAC components, including but not limited to ductwork, piping, equipment, controls & accessories, shall be removed from the area of renovation.

4. Coordinate all demolition with other trades to ensure all relevant portions of the system including associated electrical and plumbing components are removed.

5. Refer to drawing plans and notes for additional information.

1.29 REBATES

A. The contractor shall make the owner aware of all applicable “upstream” energy rebates available for this project.

B. The contractor shall provide the owner all necessary information and documentation for completion and submission of energy rebate applications.

PART 2: PRODUCTS

2.1 IDENTIFICATION, MARKING AND TAGGING

A. Systems and equipment to be identified and marked and valves tagged include, but are not limited to the Heating, Air Conditioning & Ventilating systems.

B. Submit samples of marking and tagging devices and wording, lettering and numbering scheme for each system.

C. Equipment Identification:

1. Manufacturer's nameplates or trademark shall be permanently affixed to all equipment and materials furnished under this division. Manufacturer's nameplates shall include all pertinent data relative to the piece of equipment including model number, serial number, and operating characteristics as applicable.

2. Separate Equipment Identification Markers shall identify each item of equipment with a permanently attached marker indicating designation and/or number corresponding to design documents.

3. Markers shall be of rigid black Bakelite or phenolic construction with white engraved or incised letters.

4. Lettering on equipment markers shall be of adequate size to be legible from floor levels. In all cases marker lettering shall no be less than 1 inch high.

D. Piping System Identification:

1. Piping Systems shall be identified as indicated herein or as required by applicable codes and/or officials having jurisdiction.

2. Pipe Markers shall be color coded according to " Designations to Colors" - ASME A13.1-2007.

3. All piping and equipment shall be identified by pipe markings, which shall be provided by this Contractor. Markers shall be applied every 20 ft. Markings shall indicate pipe content, system, operating pressure & temperature, and direction of flow. The markers shall be as manufactured by Seton Name Plate Corp. or equal

4. Pipe Markers shall be of the pressure sensitive type as manufactured by the Seton Nameplate Corp. (F10-Code)

5. Valve Identification: Provide laminated plastic nameplates on all valves installed under Division 230000, except stop valves in supplies to fixtures. Tags shall be constructed of 0.125 inches thick melamine plastic conforming to Fed. Spec. L-P-387. Surface shall be matte finish. Accurately align lettering and engrave into white core. Nameplates shall be to 2 inches round or hexagonal. Lettering shall be minimum of 0.375 inch high normal block lettering. Key the nameplates to a chart and schedule for each system. Frame one chart and schedule for each system under glass and place where directed in mechanical room. Furnish four copies of each chart and schedule. Each inscription shall identify its function. Attach nameplates with "S" hooks and chain to each valve. Valve nameplates shall be numbered and "keyed".

2.2 SLEEVES, INSERTS AND ESCUTCHEONS

A. Provide sleeves for all work passing through floor, wall, and ceiling construction. Locate and

provide sleeves and inserts before the floor, wall or ceiling is constructed. If this contractor does not comply with the above, he shall bear all costs incurred for cutting and patching required for the installation of sleeves and inserts. Holes required for sleeves in existing walls and floors, or to conform to the above shall be saw cut or core drilled. This Contractor shall provide all drilling required for the installation of hangers.

B. Pipe sleeves through outside walls shall be Schedule 80 black steel pipe with 150 lb. black steel slip-on welded flanges welded at the center of the outside. Extend sleeves 1/2 inch beyond each side of the wall. Pack the space between sleeve and pipe with oakum to within 2 inches of each face of the wall. Pack the remaining space and make watertight with an approved waterproof compound.

C. Pipe sleeves through concrete floors or interior masonry walls shall be Schedule 40 black steel pipe, set flush with finished wall or ceiling surfaces, but extending 2 inches above finished floors. Plastic, PVC, or light metal sleeves shall not be installed.

D. Provide individual or strip type inserts pressed steel construction with accommodation for removable nuts and threaded rods up to 3/4-inch diameter, permitting lateral adjustment. Individual inserts shall have an opening at the top to allow reinforcing rods to 1/2 inch diameter to be passed through the insert body. Strip inserts shall have attached rods with hooded ends to allow fastening to reinforcing rods.

E. Where pipe motion due to expansion and contraction will occur, make sleeves of sufficient diameter to permit free movement of pipe. Where sleeves pass insulated pipes, the sleeves shall be large enough to pass the pipe and the insulation. Check floor and wall construction finishes to determine proper length of sleeves for various locations.

F. Provide 22 gauge galvanized steel duct sleeves through interior walls, floors and ceilings set flush with finished surfaces.

G. Pack the space between sleeves and structure, and sleeves and pipes or ducts passing through fire rated interior walls, floors, and ceilings with an approved fire and smoke proof packing material. Fire-stopping material shall maintain its dimensions and integrity while preventing the passage of flame, smoke, and gases under conditions of installation and user when exposed to the ASTM E119 time-temperature curve for a time period equivalent to the rating of the assembly penetrated. Cotton waste shall not ignite when placed in contact with the non-fire side during the test. Fire-stopping material shall be non-combustible as defined by ASTM E136; and in addition, for insulation materials, melt point shall be a minimum of 1700 degrees F. for 1-hour protection and 1850 degrees F. for 2-hour protection.

H. Fasten sleeves securely in floors, walls, etc. so that they will not become displaced when concrete is poured or when construction is built around them. Take precautions to prevent concrete, plaster, or other materials being forced into the space between pipe and sleeve during construction.

I. In all areas where ducts are exposed and pass through floors, the hole shall be surrounded by a 4-inch high by 3-inch wide concrete curb, or otherwise protected as determined by the Engineer.

J. Escutcheon plates shall be provided for all exposed un-insulated pipes passing through walls, floors, and ceilings. Plates shall be nickel plated, of the split ring type, of size to match the pipe. Where plates are provided for pipes passing through sleeves, which extend above the floor surface, provide deep recessed plates to conceal pipe sleeves.

2.3 SUPPORTS & ATTACHMENTS

A. Provide all necessary supports and bases required for all equipment, piping and for all other equipment furnished under this contract. Submit shop drawings to the Architect for approval before purchase, fabrication or construction of same.

B. All equipment, unless shown otherwise, shall be securely attached to the building structure in an approved manner. Attachments shall be of a strong and durable nature and any attachments that are not strong enough shall be replaced as directed.

C. Vibration Isolation: All mechanical equipment, piping and ductwork shall be mounted on vibration isolators/inertia bases to prevent the transmission of vibration and mechanically transmitted sound to the building structure.

1. Vibration isolators shall be selected in accordance with the weight distribution so as to produce reasonably uniform deflections.
2. All isolators and isolation materials shall be of the same manufacturer and shall be certified by the manufacturer.

2.4 SEISMIC RESTRAINTS

A. It is the intent of this seismic specification that this contractor shall provide all necessary seismic restraints required to keep all mechanical building system components in place during a seismic event as required by the Building Code.

B. All mechanical systems must be installed in strict accordance with seismic codes, component manufacturer's and building construction standards. Whenever a conflict occurs between the manufacturer's or construction standards, the most stringent shall apply.

C. This contractor shall engage a professional structural engineer registered in the jurisdiction of this project to review the entire installation to determine all seismic restraint requirements and methods. Contractor shall submit a report outlining the structural engineer’s review as well as seismic restraint shop drawings and supporting calculations prepared by the professional structural engineer for review by the Architect.

1. Any questions relative to Component Importance factors shall be issued to the Architect/Engineer for resolution prior to seismic analysis.

D. Seismic restraints shall be designed in accordance with seismic force levels as detailed in the applicable building code.

2.5 ELECTRIC MOTORS/STARTERS/VARIABLE FREQUENCY DRIVES

A. Electric motors and starters shall conform to requirements of the AIEE, NEMA, UL, and NEC and shall be suitable for load duty, voltage, phase, frequency, service and location required. Provide inverter duty rated motors for use with variable frequency drives. Provide shaft grounding rings for all VFD controlled motors.

B. All motors shall be rated at 85% power factor at full rated load. Motors less than 85% power factor shall be corrected to 90% power factor at the factory. All motors shall be rated high efficiency.

C. Starters shall be Cerus International or equal.

1. Enclosed Non-Combination Starter

a) Motor Starter shall be enclosed in a Type 1 or Type 4 UL rated enclosure.
b) Motor Starter shall be rated for NEMA class B motors for AC-3 switching and AC-4 switching.
c) Controls and annunciation shall include Hand- OFF- Auto keypad. LED indication shall include Hand, Off, Auto, Run and Overload. Overload reset shall be available.
d) Control inputs shall include: Auto Wet input, Auto Dry input, Permissive Auto input, Damper Status Input and Override Input. Automatic control inputs shall be capable of accepting a transistorized input without the need for

interposing relays. Wet control inputs shall accept AC or DC inputs from 10 to 138VACor DC.

e) Damper control shall be built into the starter to provide 24VAC or 120VAC damper control and monitoring.

f) Override input shall disable the starter from operating in either Hand or Auto mode.

g) Protective Functions

(i) Electronic Overload shall provide phase failure and phase loss protection, stall, and class 1 - 30 selectable overload protection. Phase failure protection shall initiate when phase loss is greater than 70% for 3 seconds or phase unbalance is greater than 50% for more than 5 seconds.

(ii) Cycling fault protection shall be integral to the starter. Cycling fault shall be enabled whenever the starter is cycled more than 1000 times in a one hour period. This feature shall be selectable to be disabled. Cycling fault shall cause overload LED to blink rapidly.

2. Enclosed Combination Starter

a) Enclosed combination starter shall include all of the above descriptions in addition to either a motor circuit protector with lock-out mechanism, a UL 508 breaker, or a fused disconnect with lock-out mechanism.

b) The Motor Circuit protector shall be a UL listed 508 manual motor starter with magnetic trip elements only. The breaker and shall carry a UL 508F rating (up to 100A frame size) which provides for coordinated short circuit rating for use with the motor contactor and provides an interrupting rating for the breaker and contactor combination.

c) Fused disconnect shall be UL 98 suitable for service entrance protection.

d) UL 508 breaker shall include thermal and magnetic trip mechanisms.

e)

D. Variable Frequency Drives:

1. Furnish and install variable frequency drives as required by sequence of operation. All VFDs shall be manufactured by ABB. Drives shall be provided with line reactors as required to eliminate harmonics transmitted upstream and downstream of drive and as required by local utility. Furnish VFDs with bypass to allow operation of motor in case of VFD failure. Drives shall be commissioned and tested and a report prepared by a company specializing in the field. Division 260000 will energize drives.

E. Disconnects provided by this contractor will be installed by Division 260000, with the exception of factory mounted disconnects.

F. Motors smaller than 1/2 HP shall be capacitor-start or split phase type, single phase, 60-hertz alternating current for voltage required. Motors 1/2 HP and larger shall be squirrel-cage induction three phase 60 hertz alternating current for voltage required, unless specifically noted otherwise.

G. Where available, starters and disconnects shall be factory mounted by the unit manufacturer.

2.6 USE OF INSTALLATION

A. The Owners shall have the privilege of using any part of the installation when sufficiently complete, but such use thereof, or partial or final payment shall not be considered as an acceptance of such work in lieu of a written certificate from the Engineer.

2.7 DUCTWORK

A. Fabricate and support in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated. Provide duct material, gages, reinforcing, supports and sealing for operating pressures indicated.

B. Galvanized Steel Ducts: ASTM A525 and ASTM A527 galvanized steel sheet, lock-forming quality, having G90 zinc coating of in conformance with ASTM A90.

1. Sealant: As recommended by manufacturer specifically for sealing joints and seams in ductwork.
2. Non-hardening, water resistant, fire resistive, compatible with mating materials; liquid used alone or with tape, or heavy mastic.
3. Hanger Rod: ASTM A36; steel, galvanized; threaded both ends, threaded one end, or continuously threaded.

C. Hanger Rod: ASTM A36; steel, galvanized; threaded both ends, threaded one end, or continuously threaded.

D. Flexible Connections

1. Flexible connections shall be provided where a fan connects to a duct or casings to prevent transmission of vibration to ductwork.
2. Flexible connections shall fit tightly around ducts and fans and be securely bolted or clamped in place. Taping shall not be allowed.
3. Flexible duct connections shall be 6” long and made of straight, waterproof, flame retardant fabric having a flame spread rating of not over 25 and a smoke development rating of not over 50

E. Existing Ductwork:

1. Any existing ductwork within the area of work or connected to systems within the area of work shall be professionally cleaned by an experienced certified duct cleaning company and sealed with Aeroseal or equivalent. Contractor shall submit before/after photographs of each duct system cleaned.
2. Any existing ductwork within the area of work or connected to systems within the area of work shall be sealed with Aeroseal or equivalent.

F. Fire Dampers:

1. Provide fire dampers throughout air distribution system as required by applicable codes, standards and authorities. Provide access door for each fire damper of sufficient size to repair internal link. Fire dampers indicated on drawings may not fully represent the exact number required for this project. It is the Contractor’s responsibility, at no additional cost to the Owner, to provide all required dampers.
2. Dampers shall be approved fusible-link self-closing spring loaded type, Buckley Model 150B or equal.
3. Dampers shall be dynamic type when serving a system that is not shut down during fire alarm activation.
4. Frame shall be fitted with angle iron stop and stainless steel spring latch, and shall be securely fastened to building construction.
5. Seal spaces between damper frames and walls and between damper frames and floor with approved fire-retardant material.

6. Use of dampers shall NOT reduce net free area of duct below that shown on drawings. Fire dampers shall be Type B with blades of dampers out of air stream.
7. Samples of fire dampers shall be submitted to and approved by local authorities having jurisdiction.
8. Dampers shall bear 1-1/2 hour UL-rating fire damper label and shall be constructed and installed as required by UL-555.
9. Fire dampers shall be Buckley, Ruskin, Nailor Industries or Prefco for use in the proper duct pressure classification.
10. Dampers shall be installed per SMACNA with breakaway connections and nose pieces on duct liner (see SMACNA HVAC Duct Construction Standards).
11. All dampers in ductwork served by equipment not subject to fan shut down upon fire alarm activation shall be dynamic type.

G. Volume Dampers:

1. Provide Young Regulator manual adjustable rectangular opposed blade dampers for duct heights less than 12” with factory-installed locking hand quadrants extended 2” for all dampers installed in externally insulated duct:
   a) On each supply, return and general duct take-off.
   b) At each take-off to register, grille or diffuser (not all are shown on drawing).
2. Dampers are manufactured approximately 5/16” smaller in width and 1/8” smaller in height than size of duct in which they are installed; e.g., nominal damper size is 24” x 10”; actual size is approximately 23-11/16” x 9-7/8”.
3. Damper frame shall be constructed of #6063 extruded aluminum reinforced channel with minimum thickness of .050”. Opposed damper blades shall be #6063 extruded aluminum with minimum thickness of .050” and shall include reinforcing ribs. Each blade shall be supported in the damper frame by individual Teflon axle bearings, and shall be driven by stainless steel connecting slide linkage controlled by 3/8” square steel control shaft.
4. Note: All required volume dampers may not be indicated on drawings but dampers shall be provided as necessary for systems balancing.
5. Dampers 12” and larger in height shall be opposed multi-blade equal to Greenheck, Nailor or Vent Products.
6. Where dampers are inaccessible, use Young Rectangular locking type ceiling regulators and miter gear or worm gear for all horizontal dampers. Bearing coupling for bottom duct control may be used for shaft on vertical blade dampers. The 3/8” rod between ceiling regulator and damper shall be provided by Contractor.
7. Where dampers are to be located above hard ceilings Young Regulator Bowden Cable Control Dampers shall be utilized. Controllers (actuators) shall be of the concealed ceiling type. Controller type, finish & locations to be approved by architect prior to purchase & installation. The cable between the damper and controller shall be provided by the contractor.
8. Damper blades shall be two gauges heavier than adjoining ductwork, and shall be riveted to supporting rods. Hem over edges parallel to rods.
9. Brackets shall be galvanized metal, secured to ductwork with sheetmetal screw with locking quadrant arms (see seal class section for additional requirements). Provide 2” handle extension for all dampers on externally insulated ductwork.

10. Note: All required volume dampers may not be indicated on Drawings but dampers shall be provided as necessary for system balancing.

2.8 DUCT INSULATION

A. Compliance: Insulation thickness, conductivity and installation shall comply with local Mechanical and Energy Codes.

B. Concealed supply & return ducts for heating, cooling and air intakes:

1. Insulation: ASTM C553; flexible, foil faced, noncombustible blanket.

a) Interior Concealed/Tempered: R-Value of 8.0 installed.

b) Interior Ventilated/Untempered: R-Value of 12.0 installed

2. Vapor Barrier Jacket:

a) Kraft paper with glass fiber yarn and bonded to aluminized film.

(i) Moisture vapor transmission: ASTM E96; 0.02 perms.

(ii) Secure with pressure sensitive tape.

3. Vapor Barrier Tape:

a) Kraft paper reinforced with glass fiber yarn and bonded to aluminized film, with pressure sensitive rubber based adhesive.

C. Exhaust Ductwork:

1. Interior Concealed/Tempered:

a) Direct Exhaust: No Insulation Required.

b) Upstream of an ERV: Refer to Concealed supply & return ducts for heating, cooling and air intakes; Interior Concealed/Tempered:

2. Interior Ventilated/Untempered: Refer to concealed supply & return ducts for heating, cooling and air intakes; Interior Ventilated/Untempered.

D. Exterior Ductwork (All Types)

1. Material: Insulate with R-Value of 12.0 installed.

2. Jacket: Insulation jacket may be integral or field applied and shall be reflective, watertight and listed for this usage.

3. Install per latest installation instructions from the manufacturer.

E. Fire Wrap

1. Provide fire wrap on ductwork after ductwork penetrates a fire barrier/partition or where proper clearance to combustibles (as required by NFPA 96 and local codes and ordinances) cannot be achieved.

2. Acceptable Manufacturer: Thermal Ceramics; 2102 Old Savannah Rd., Augusta, GA 30906. ASD. Toll Free Tel: (800) KAOWOOL. Tel: (706) 796-4200. Fax: (706) 796-4398. Email: firemaster@thermalceramics.com. Web: http://www.thermalceramics.com.

2.9 INTERIOR DUCT LINER

A. Polymer Foam insulation (EPFI) equal to IMCOA “IMCOSHEET” Engineered Polymer Foam Insulation, 1 inch thick, R = 4.0, closed cell. Insulation shall be installed as required by the insulation manufacturer. Insulation shall be in compliance with NFPA 90 and 90B. Flame spread shall be less than 25 and smoke density less than 50 per ASTM E-84, NFPA 255, UL 723 Class I and UL 181.

B. Duct lining shall be applied in the following locations:

1. 20' upstream and downstream from all air handling units exceeding 10 tons.
2. 10' upstream and downstream from all air handling units of 10 tons or less.
3. 10' upstream and downstream from return air fans.

C. Areas provided with interior duct lining shall also be provided with exterior duct insulation as indicated by these specifications.

2.10 PIPING

A. Hydronic Piping

1. Steel Pipe: ASTM A53, Schedule 40, black.
   a) Fittings: ASTM B16.3, malleable iron or ASTM A234, forged steel welding type fittings or Victaulic ductile iron ASTM A536/395.
   b) Joints: Threaded, or AWS D1.1,welded or Victaulic grooved joints.
2. Copper Tubing: ASTM B88, Type L, hard drawn.
   a) Fittings: ASME B16.18, cast brass, or ASME B16.22, solder wrought copper.
   b) Tee Connections: Mechanically extracted collars with notched and dimpled branch tube.
   c) Joints: Solder, 95-5 tin-antimony, or tin and silver, with melting range 430 to 535 degrees F or Victaulic grooved joints.

B. Exterior Condenser Water Piping:

1. Schedule 80 ASTM Type 1, Grade 1 and the typical long and short term strength designation of material for pressure piping is PVC 1120.
2. Fittings PVC Type 1, cell classification 12454, conforming to ASTM Standard D 1784. All PVC injection molded Schedule 80 Fittings and extruded pipe shall be Certified for portable water service by NSF International. All Schedule 80 fittings shall be manufactured in strict compliance to ASTM D 2467 and schedule 80 pipe shall be manufactured in strict compliance to ASTM D 1785. All PVC flanges shall be designed and manufactured to meet CL 150 bolt pattern per ANSI Standard B16.5 and rated by a maximum internal pressure of 150 psi, non-shock at 73 degrees F.All pipe and fittings shall be supplied as a system by a single manufacturer. Installation to be in accordance with manufacturer's instructions.

C. Steam and Steam Condensate Piping

1. Steel Pipe: ASTM A53, Schedule 40 Steam, Schedule 80 for Condensate, black.
2. Fittings: ASTM B16.3 malleable iron Class 125, or ASTM A234 forged steel Class 125.
3. Joints: Threaded, or AWS D1.1, welded.
4. Copper Tubing: ASTM B88, Type M and DWV, hard drawn.
   a) Fittings: ASME B16.18, cast brass, or ASME B16.22 wrought copper.
   b) Joints: Solder, lead free, ASTM B32, 95-5 tin-antimony, or tin and silver, with melting range 430 - 535 degrees F.

D. Equipment Drains and Overflows

1. Copper Tubing: ASTM B88, Type L, hard drawn.

a) Fittings: ASME B16.18, cast brass, or ASME B16.22 solder wrought copper.

b) Joints: Solder, lead free, 95-5 tin-antimony, or tin and silver, with melting range 430 to 535 degrees F (220 to 280 degrees C) or Victaulic grooved joints.

2. PVC Pipe: ASTM D1785, Schedule 40 and Schedule 80 for sizes 8 inch (200 mm) and larger or ASTM D2241, SDR 21 or 26.

a) Fittings: ASTM D2466 or D2467, PVC.

b) Joints: ASTM D2855, solvent weld.

E. Above Ground CW Make-Up Water Piping:

1. Pipe:
   a. Type L copper tubing, conforming to Federal Specification WW-T-799 hard temper, or ASTM B88 drawn copper.
   b. ASTM A312, 304/304L Stainless Steel, .049 wall, certified for use with Pressfit® products.
2. Fittings:
   a. Wrought copper and bronze solder joints.
   b. 304/304L Precision cold drawn austenitic stainless steel, Vic-Press 304™.
3. Joints:
   a. Soldered joints shall be lead free solder.
   b. Vic-Press 304™ fittings and couplings, complete with elastomer O-ring.

F. Above Ground Sanitary Waste:

1. Schedule 40 PVC, Type 1 piping with cement fittings.

G. Unions, Flanges and Couplings

1. Unions for Pipe 2 Inches (50 mm) and Under:

a) Ferrous Piping: 150 psig (1034 kPa) malleable iron, threaded.

b) Copper Pipe: Bronze, soldered joints.

2. Flanges for Pipe Over 2 Inches (50 mm):

a) Ferrous Piping: 150 psig (1034 kPa) forged steel, slip-on.

b) Copper Piping: Bronze.

c) Gaskets: 1/16 inch (1.6 mm) thick preformed neoprene.

3. Flange Adapters for Victaulic Systems 2 inches and Larger:

a) Style 741/W741 for direct connection to ANSI Class 125/150 flanges

b) Style 743 for direct connection to ANSI Class 300 flanges.

4. Couplings for Victaulic Grooved Joint Systems for Steel Piping Systems 2 inches and Larger:

a) Rigid: Provides system rigidity and support and hanging in accordance with ASME B31.1 and B31.9. Style 107 (8” and smaller), Styles 07/W07 (10” and larger)

b) Flexible: : Use in locations where vibration attenuation and stress relief are required. Style 177/77/W77.

c) Gaskets: Grade EHP EPDM rated for –30F to 250F for 8” and smaller and Grade E EPDM rated for –30F to 230F for 10” and larger.

5. Couplings for Victaulic Grooved Joint Systems for Copper Piping Systems 2 inches and Larger:
    a) Rigid: Style 607 with Grade EHP EPDM gasket rated for –30F to 250F.
6. Provide di-electric ~~fittings~~ waterways wherever copper pipe meets steel pipe or other dissimilar metals.

H. Plenum Return Applications
1. Where piping is installed in a return air plenum piping shall be plenum rated.
2. PVC and/or PEX piping shall not be allowed in return air plenums.

2.11 VALVES

A. Valve Features
1. General Comply with ASME B31.9 for building services piping, and ASME
2. Valve Design; Valves shall have rising stem, or rising outside screw and yoke stems; except, non-rising stem valves may be used where headroom prevents full extension of rising stems.
3. Pressure and Temperature Ratings As scheduled and required to suit system pressures and temperatures.
4. Sizes unless otherwise indicated, provide valves of same size as upstream pipe size.
5. Operators Provide the following special operator features:
    a) Hand wheels fastened to valve stem, for valves other than quarter turn, by brass nut on a square-topped stem.
    b) Lever handles on quarter-turn valves 6 inch and smaller, except for plug valves. Provide one wrench for every 10-plug valves, and a one years supply of recommended lubricant or sealant.
    c) Chain-wheel operators for valves 2-1/2 inch and larger installed 72 inches or higher above finished floor elevation. Extend chains to an elevation of 5'-0" above finished floor elevation.
    d) Gear drive operators on quarter-turn valves 8 inches and larger.
6. Extended Stems where insulation is indicated or specified, provide extended stems arranged to receive insulation.
7. Bypass and Drain Connections: Comply with MSS SP-45 bypass and drain connections.
8. End Connections: As specified in the individual valves specifications.
9. Threads Comply with ANSI B2.1.
10. Flanges Comply with ANSI B16.1 for cast iron, ANSI B16.5 for steel, and ANSI B16.24 for bronze valves.
11. Solder-Joints Comply with ANSI B16.18.
12. Caution: Where soldered end connections are used, use solders having a melting point below 840 degrees. F for gate, globe, and check valves; below 421 degrees. F for ball valves.
13. Groove-Ended Valves Comply with AWWA C606

B. Gate Valves

1. Gate Valves - 2 Inch and Smaller MSS SP-80; Class 150, body and bonnet of ASTM B 62 cast bronze, threaded or solder ends, solid disc, gland packed, N.A. packing.
2. Gate Valves - 2-1/2 Inch and Larger MSS SP-70; Class 125 cast iron bodies conforming to ASTM A 126 (Body and Bonnet). Bronze trim, flanged ends, N.A. packing.

C. Ball Valves

1. Ball Valves – 1 Inch and Smaller Rated for 150 psi saturated steam pressure, 600 psi WOG pressure; 2-piece construction, bronze body conforming to ASTM B 62, standard (or regular) port, stainless steel ball, replaceable “Teflon” or “TFE” seats and seals, blowout proof stem, and vinyl-covered steel handle. Threaded ends for heating hot water and low-pressure steam.
2. Ball Valves - 1-1/4 Inch to 2 Inch Rated for 150 psi saturated steam pressure, 600 psi WOG pressure; 3-piece construction, bronze body conforming to ASTM B 62, conventional port, stainless steel ball, replaceable "Teflon" or "TFE" seats and seals, blowout proof stem, and vinyl-covered steel handle. Threaded ends for heating hot water and low-pressure steam.
3. Ball Valves-1/2 inch through 2inch Rated for up to 600 psi WOG, brass body, standard port, threaded ends, 2-piece, chrome-plated brass ball, TFE seats. Victaulic Style 722.
4. Ball Valves-1-1/2 inch through 6 inch. Rated for up to 1000 psi. ductile iron body, standard port, grooved ends, 2-piece, chrome-plated carbon steel ball, TFE seats. Victaulic Style 726.

D. Plug Valves

1. Plug Valves - 2 Inch and Smaller 150 psi WOG, bronze body, straightaway pattern, square head, threaded ends.
2. Plug Valves - 2-1/2 Inch and Larger MSS SP-78; 175 psi, lubricated plug type, semi-steel body, single gland, wrenchoperated, flanged ends
3. Plug Valves-3 Inch and Larger Grooved-Ends. Meets the intent of MSS SP-78. 175 psi, non-lubricated plug type, ductile iron body, ductile iron plug (elastomer encapsulated). Victaulic Style 377.

E. Globe Valves

1. Globe Valves - 2 Inch and Smaller MSS SP-80; Class 150, body and union bonnet of ASTM B 62 bronze, gland packed, N.A. packing. Bronze trim, composition disc.
2. Globe Valves - 2-1/2 Inch and Larger MSS SP-85; Class 125 body, bronze trim, with body and bonnet conforming to ASTM A 126, Class B; cast iron, flanged ends, with N.A. packing.

F. Butterfly Valves

1. Butterfly Valves - 2 Inch and smaller MSS SP-67; 200 psi, cast bronze body, Viton seals, full port design, stainless steel trim, threaded or solder ends.
2. Butterfly Valves – 2-1/2 Inch and larger MSS SP-67; 200 CWP, conforming to ASTM A 126, Class B cast iron, EPDM cartridge liner, A1.Bronze disc, 416 s.s. Stem. Sizes up to 6 inches shall have lever operators with locks, and sizes 8 and above shall have gear operators with position indicator. Valves on dead end service or requiring additional body strength shall be lug-wafer type, drilled and tapped.

3. Butterfly Valves – 2 Inch and Larger Grooved-Ends. Meets the intent of MSS SP-67, 300 CWP, ductile iron body, ductile iron offset disc, EPDM seat seal, bubbletight/bi-directional shutoff to full dead end rating (300 CWP). Victaulic MasterSeal or AGS Vic-300.

4. Triple-Service Assembly-2 inch and Larger, Grooved-Ends. In lieu of Triple Duty Valves or Multi-Purpose Valves, the Victaulic Triple-Service Assembly may be used. Combination MasterSeal™ Butterfly Valve and Venturi Check Valve Style 779 or AGS Vic®-300 Butterfly Valve with Style 715 Dual-Disc Check Valves.

G. Check Valves

1. Swing Check Valves - 2 Inch and Smaller MSS SP-80; Class 150 or 200, cast bronze body and cap conforming to ASTM B 62, horizontal swing, with a Teflon disc, and having threaded ends. Valve shall be capable of being repaired while the valve remains in the line.

2. Swing Check Valves - 2-1/2 Inch and Larger MSS SP-71; Class 125, cast iron body and bolted cap conforming to ASTM A 126, Class B; horizontal swing, with a bronze disc or cast iron disc with bronze disc ring, and flanged ends. Valve shall be capable of being refitted while the valve remains in the line.

3. Wafer Check Valves - (Non-Slam) Class 250, cast iron body, replaceable lapped bronze seat, lapped and balanced twin bronze flappers and stainless steel trim. Valve shall be designed to open and close at approximately one-foot differential pressure. Twin flappers shall be loaded with a stainless steel torsion spring to minimize flapper drag and assure even non-slam checking action.

4. Lift Check Valves - 2 Inch and Smaller Class 125, cast bronze body and cap conforming to ASTM B 62, horizontal, lift type valve, bronze disc and threaded ends. Valve shall be capable of being refitted and ground while the valve remains in the line.

5. Check Valves – 2 Inch and Larger, Grooved-Ends:

   a) Swing Check-Ductile iron body, SS clapper, EPDM seat seal, 300 CWP. Style 712 (horizontal installation only)

   b) Spring-Assisted Swing Check-Ductile iron body, aluminum-bronze or ductile iron disc, EPDM seat seal, 300 CWP. Style 716/779 (horizontal or vertical installations)

   c) Spring-Assisted Dual-Plate Swing Check-Ductile iron body, SS disc , EPDM seat seal, 230 CWP. Style W715 (horizontal or vertical installations).

H. Combination Balancing & Shutoff Valves:

1. 2” and Smaller Sizes: 300 psi, threaded or sweat ends, non-ferrous Ametal® brass copper alloy body, EPDM o-ring seals. 4 turn digital readout handwheel for balancing, hidden memory feature with locking tamper-proof setting. Victaulic / TA Hydronics Series 786/787 or Engineer Approved Equal .

2. 2-1/2” and Larger Sizes: 300 psi, flanged or grooved ends, ASTM A536 ductile iron body, all other metal parts of Ametal® brass copper alloy, EPDM O-ring seals. 8, 12 or 16 turn digital readout handwheel for balancing, hidden memory feature with locking tamper-proof setting. Victaulic / TA Hydronics Series 788/789 or Engineer Approved Equal

3. .Koil-Kit™ Components: Install Series 78U union port fitting and Series 78Ystrainer/ball valve combination to complete terminal hook-up at coil outlet

I. Balancing Valves

1. Balancing valves shall be provided on all piping mains and takeoffs as required to balance the system to the flows indicated on the drawings and in the equipment schedules.
2. Balancing valves shall be sized such that the specified flow through the valve generates an input to the flow measurement device that is within the range of accuracy of the device. Oversized valves that generate inputs that are below the range of the device and undersized valves that result in excessive pressure loss are not acceptable. Balancing valve submittals shall indicate size, flow and valve characteristics.

2.12 PIPING INSULATION

A. Insulation

1. Hydronic/Steam Piping: Preformed glass fiber meeting ASTM C547, "k" value of 0.24 @ 75°F with all service jacket (ASJ). Service temperature 0°F to +850°F, 25/50.
2. Low Temperature Fluid Applications: Provide insulation with integral wick material. Product shall include a factory applied integral vapor retarder extending under the evaporator area of the wick and covering not less than 98% of the circumference of the product. Exposed evaporator area shall be not less than 0.1 sq. ft./linear ft. of product.
3. Plenum Return Applications: All insulation, jackets and accessories shall be rated for use in return air plenums.

B. Compliance: Insulation thickness, conductivity and installation shall comply with local Mechanical and Energy Codes.

C. Minimum Pipe Insulation:

1. Steam/Steam Condensate:1-1/2” Thick, ≤ 1-1/2” Nominal Pipe Diameter
2. Steam/Steam Condensate: 3” Thick, > 1-1/2” Nominal Pipe Diameter
3. Hot Water: 2” Thick, > 1-1/2” Nominal Pipe Diameter
4. Cold Water Make-Up Piping: 1-1/2 in. Thick
5. Chilled Water/Cold Condensate/Refrigerant: 1-1/2” Thick, ≤ 1-1/2” Nominal Pipe Diameter
6. Chilled Water/Cold Condensate/Refrigerant: 1-1/2” Thick, > 1-1/2” Nominal Pipe Diameter

D. Condensate Piping

1. All condensate piping, regardless of temperature, shall be provided with insulation.
2. Condensate generated by cooling coils shall be considered Low Temperature Fluid.

E. Fittings: Factory precut insulation inserts, thickness to be same as adjacent. Enclose in premolded, PVC fitting covers.

1. Low Temperature Applications: Fittings and valves shall be wrapped continuously with wicking material prior to installing insulation to ensure a continuous path for removal of condensation.

F. Jackets:

1. Interior: Factory applied, all service jacket of white Kraft bonded to aluminum foil

reinforced with fiberglass yarn and suitable for painting. Longitudinal and butt joints shall be made with factory applied pressure sensitive material.

2. Exterior/Exposed (Low Temperature): Field applied, 20 mil, PVC sheet material.
3. Exterior/Exposed (High Temperature): Field applied, Aluminum sheet material.
4. All jackets exposed to the weather shall be reflective, UV resistant and sealed watertight.

G. Preparation

1. Install materials after piping has been tested and approved.

H. Installation

1. Install materials in strict accordance with manufacturer's instructions.
2. Continue all insulation through penetrations.
3. In piping exposed to view, locate insulation and cover seams in least visible locations.
4. On piping that requires condensation control, (i.e. chilled or cold) insulate fittings, valves, unions, flanges, strainers, flexible connections, and expansion joints.
5. On piping not requiring condensation control (i.e. steam, condensate hot water) do not insulate flanges and unions at equipment, but bevel and seal ends of insulation at such locations.
6. Provide pipe insulation with weatherproof jacket on exterior piping that has heat trace.

I. Supports:

1. All piping shall be supported in such a manner that the insulation is not compromised by the hanger or the effects of the hanger. In all cases, hanger spacing shall be such that the circumferential joint may be made outside the hanger. Cover the evaporating holes with contractor supplied VaporWick Sealing Tape for the length of the metal saddle.
2. Piping systems 3" (75 mm) in diameter or less, insulated with fiberglass pipe insulation, may be supported by placing saddles of the proper length and spacing under the insulation as designated in Owens Corning Pub. 1-IN-14210.
3. For hot or cold piping systems larger than 3" (75 mm) in diameter, operating at temperatures less than +200F (93C) and insulated with fiberglass, inserts such as foam or high-density fiberglass with sufficient compressive strength shall be used to support the weight of the piping system.
4. On vertical runs, insulation support rings shall be used.

J. Accessories:

1. Insulation Bands: ¾ inch wide; 0.015 stainless steel
2. Metal Jacket Bands: ½ inch wide; 0.015 thick aluminum.
3. Insulating Cement: ANSI/ASTM C195; hydraulic setting mineral wool.
4. Finishing Cement: ASTM C449.
5. Fibrous Glass Cloth: Untreated; 8oz/sq. yd. Weight.
6. Adhesives: Compatible with insulation.
7. Wick material for wrapping valves and fittings

8. Closure Materials –Sealing Tape, and mastics.
9. Support Materials - Hanger straps, hanger rods, saddles, support high-density blocks, and support rings.
10. All accessory materials shall be installed in accordance with project drawings and specifications, manufacturer's instructions, and/or in conformance with the current edition of "Commercial & Industrial Insulation Standards."

2.13 WATER TREATMENT

A. All hydronic HVAC systems within the scope shall be provided with water treatment chemicals during initial fill of the systems. Chemicals shall be designated for use in the specific system type and be provided in concentrations as recommended by the chemical manufacturer.

B. Where indicated on the drawings provide Propylene Glycol to hydronic systems in the concentrations indicated. Glycol shall be of the inhibited type and be provided with additional water treatment chemicals to prevent corrosion.

C. Hydronic systems shall be provided with a chemical shot feeder for the maintenance of water treatment chemicals.

D. Where Glycol Make-up systems are provided the contractor shall fill the tank with glycol solution at the completion of the project.

E. Contractor shall provide submittals for review and approval for all water treatment chemicals and water tests shall be performed and the test results submitted for approval.

2.14 FIRESTOPPING

A. Provide Firestopping systems for penetrations in fire-resistance-rated assemblies, including both membrane and through penetrations. This contractor shall thoroughly review architectural plans for assembly type and location and shall prepare bid accordingly.

B. Materials and systems shall be designed to meet the requirements of the intended application and shall be installed per manufacturer’s guidelines.

C. Submittals: Provide for review Manufacturer’s product literature and tested assembly for each type of fire protection material including product characteristics, typical uses, installation procedures, performance and limitation criteria.

2.15 DRIP PANS & LEAK DETECTION

A. Drip pans shall be provided where indicated on plans and under all new and existing piping within critical spaces.

B. Drip pans shall be constructed of continuously welded sheet metal. Each section shall be provided with a wire type leak detection sensor compatible with fluids present in piping. Leak detection alarms shall be tied back to Building Management System.

C. Provide new leak detection sensors in all existing drip pans. Tie alarms back to Building Management System.

2.16 AIR HANDLER REFURBISHMENT MATERIALS AND APPLICATION

A. Refurbish 2 air handling units to restore chamber floors and condensate pans with an engineered 3 layer composite coating system.
B. Composite coating system must be patented, manufactured, and installed by the same company.
C. Shall consist of a 3 layer composite coating system designed for extended life of an air handler and be NFPA-90A compliant.

D. Coating shall include a self-leveling epoxy, a fire barrier coating and an antimicrobial top coating.
E. Shall meet NFPA 90A fire code compliance of a maximum flame spread index of 25, no continued progressive combustion, and max smoke index of 50. (ASTM E-84 test) by a certified testing laboratory.
F. Shall meet ASHRAE 62.1 compliance of drain pan slope of at least 0.125 in. per linear foot, drain outlet is at the lowest point of the drain pan, P Trap or other seal present for negative pressure drains.
G. Shall be an EPA registered active antimicrobial which abates growth of pathogenic biological agents such as mold, Legionella, and Aspergillus.
H. Refurbishment shall be installed in 2 (8 hour) sessions with the ability to turn on the air handlers immediately after each 8 hour session.
I. Shall be a Non-VOC and low odor installation process.
J. Floor coating provided shall extend up walls for a minimum of 6 inches.
K. Clean, prepare and install a multiacrylic antimicrobial coating on all interior walls, ceiling, fan housings and structural steel.
L. Prepare and apply exterior grade paint for all metal surfaces on the outside of the air handling units. Color to be approved by the owner.
M. Shall have a warranty for product and labor of 3 years or more.
N. At the present time, there is only one Company certified to meet all of the above requirements: Aquis of Orlando, Florida. They are a qualified government sole source under GSA Contract # GS-21F-0151X with an expiration date of 26 July 2012 (CCR TPIN # 09778912, DUNS # 807803866).

2.17 AIR HANDLER REFURBISHMENT MEANS AND METHODS

A. Refurbish S-1 19,805 cfm existing air handler (non-zoned).
    1. De-energize the AHU.
    2. Remove defunct coils, if any, and replace as necessary.
    3. Replace all defective damper blades.
    4. Ensure all damper controls are operational, repair or replace as necessary.
    5. Ensure that all control sensors within the unit are operational, repair or replace as necessary. This includes related smoke detectors.
    6. Isolate the AHU by sealing off adjacent ductwork and negative air machines.
    7. Clean and prepare all interior surfaces. Reinforce compromised surfaces as necessary.
    8. Apply low temperature self-leveling epoxy throughout AHU chamber floor and 6 inches up chamber walls and condensate pans downstream of the first coil.
    9. Apply a fire barrier coating over all epoxy.
    10. Apply an Antimicrobial top coat over all fire barrier coatings.
    11. Apply multiacrylic antimicrobial coating on all interior walls, ceiling, fan housing and structural steel.
    12. Confirm proper operation of existing drains and traps.
    13. Test AHU for proper drainage.
    14. Prepare the exterior walls of the unit for the application of an exterior grade paint.
    15. Apply exterior grade paint for all metal surfaces on the outside of the air handling unit.
    16. Degas the AHU unit.
B. Refurbish MZAH-2 35,000 cfm existing air handler (13 zones).
    1. De-energize the AHU.
    2. Remove defunct coils, if any, and replace as necessary.
    3. Replace all defective damper blades.
    4. Ensure all damper controls are operational, repair or replace as necessary.

5. Ensure that all control sensors within the unit are operational, repair or replace as necessary. This includes related smoke detectors.
6. Isolate the AHU by sealing off adjacent ductwork and negative air machines.
7. Clean and prepare all interior surfaces. Reinforce compromised surfaces as necessary.
8. Apply low temperature self-leveling epoxy throughout AHU chamber floor and 6 inches up chamber walls and condensate pans downstream of the first coil.
9. Apply a fire barrier coating over all epoxy.
10. Apply an Antimicrobial top coat over all fire barrier coatings.
11. Apply multiacrylic antimicrobial coating on all interior walls, ceiling, fan housing and structural steel.
12. Confirm proper operation of existing drains and traps.
13. Test AHU for proper drainage.
14. Prepare the exterior walls of the unit for the application of an exterior grade paint.
15. Apply exterior grade paint for all metal surfaces on the outside of the air handling unit.
16. Degas the AHU unit.

PART 3: EXECUTION

3.1 OPERATING INSTRUCTIONS

A. Instruction to the Owner's Personnel - After completion of all work and all tests and at such times as designated by the Architect, provide the necessary skilled personnel to operate the entire installation until receipt of owners acceptance.

B. During the operating period, instruct the Owner's representative in the complete operation, adjustment, and maintenance of the entire installation.

C. Give at least forty-eight (48) hours advance notice to the Owner to coordinate scheduling of this instructional period.

D. Furnish to the Architect five (5) complete bound sets of typewritten or blueprinted instruction manuals for operating and maintaining all systems and equipment included in the contract. All instruction manuals shall be submitted in draft, for approval, prior to final issue. Manufacturer's advertising literature or catalogs will not be acceptable for operating and maintenance instructions.

E. The above-mentioned instructions shall include the maintenance schedule for the principal items of equipment furnished under this contract.

3.2 MANUFACTURER'S RECOMMENDATIONS:

A. Where installation procedures or any part thereof are required to be in accordance with the recommendations of the manufacturer of the material being installed, printed copies of these recommendations shall be furnished to the Architect prior to installation. Installation of the item will not be allowed to proceed until the recommendations are received. Failure to furnish these recommendations can be cause for rejection of the material.

3.3 TESTING, ADJUSTING, STARTING UP AND COMMISSIONING

A. Testing and inspection services shall be provided as specified in Section 01 40 00 – Quality Requirements – 1.7 of the Division 1 specifications.

B. Testing: All work must be proved satisfactory. The tests herein specified shall be applied in the presence of, and to the satisfaction of, the Engineer before the work is covered, concealed or made inaccessible to testing, repair, correction or replacement. Accommodate

the testing operation to the progress of the project as a whole. Correct all defects appearing under test and repeat the tests until all parts of the work have been successfully tested. Apply the specific tests herein described. Present all work for acceptance in clean condition, properly adjusted and in good working order; for instance, all machinery must be quiet, well balanced, and must be in place and reading accurately. All systems, equipment, controls, and devices in this work shall be tested in operation and must prove for their purposes in the judgment of the Architect or his authorized representative. All internal surfaces of all lines and equipment shall be blown or flushed clean. Where pressure tests are specified, the apparatus shall be clean before the tests are applied. Contractor shall provide adequate protection of piping and duct systems to prevent vandalism and/or accidental damage, blockage, etc., that will hinder or prevent proper operation of the finished systems.

1. Provide instruments, pumps, gauges, supplies, equipment, materials, and labor for testing and starting up. Dispose of test water and wastes after test, in a manner approved by all applicable codes.
2. Perform tests which may be required by authorities or agencies in addition to those herein specified.
3. Piping for steam, hot water, chilled water, supply and return, drain, escape and relief valve discharge shall be tested with water and made tight under pressure of 150 pounds per square inch gauge maintained for one hour without pumping or as long as required to inspect all joints. Repair all leaks and retest. Piping shall be made tight without caulking. Apply pressure tests to piping only before connection of equipment. In no case shall piping, equipment or accessories be subjected to a pressure exceeding it's rating. Low-pressure elements shall be isolated or removed before tests are conducted.
4. Test valve bonnets for tightness. Test operate all valves at least once from closed-to-open-to-closed positions while valve is under pressure. Test all automatic valves for proper operation at the settings indicated. Test pressure relief valves at least three (3) times.
5. Test piping specialties for proper operation. Test air vent points to ensure that air has been vented.
6. Furnish certified shop test records for all pressure vessels. After installation, test at full operating pressures and temperatures maintained for one hour. Set and test all pressure control, relief and safety devices.
7. Repair or replace all defective work and repeat tests until the particular system and component parts thereof receive the approval of the Architect.
8. The duration of tests shall be as determined by authorities having jurisdiction, but in no case less than the time prescribed in each section of the specifications.
9. Test equipment and systems, which normally operate during seasons of the year during the appropriate season. Perform tests on individual equipment, systems and their controls. Whenever the equipment or system under test is interrelated with and depends upon the operation of other equipment, systems and controls for proper operation, function, and performance; the latter shall be operated simultaneously with the equipment of system being tested.

C. Adjusting, Balancing and Starting Up

1. Flush clean all systems prior to starting up the system. Any damages to the building or system components caused by failure to clean the systems properly shall be corrected to the satisfaction of the Architect or his authorized representative at no additional cost to the Owner.

2. In duct and piping systems, eliminate all noise and vibration and take all measures to secure proper circulation.
3. Run motor-driven equipment continuously for at least two hours in the presence of the Architect. Correct all defects of noise, vibration, alignment and balance. Replace all motors, which overheat or are noisy.
4. Balance systems completely for temperature, volume, and pressure per NEBB performance standards. Balancing subcontractor shall provide proof of certification by NEBB.
5. Air and water volumetric flow rates shall be within ten (10) percent of those specified. Air and water quantities and pressures shall be tested, balanced and recorded at all terminal devices. Volumetric flows and pressures shall be recorded on suitable forms and submitted for approval.
6. Provide any and all labor and equipment necessary to properly balance the installation including but not limited to dampers, valves, flow stations, test ports, sheaves, belts, etc.
7. All sequences of the system shall be checked and all temperature controls operated and commissioned as required to insure that all systems operate per Engineers intent.

D. Commissioning

1. This Contractor shall provide the deliverables to the engineer/owner.
2. Copies of all records shall be provided to the Engineer by this Contractor including, but not limited to:
   a) Equipment manuals including the name of at least one service agency;
   b) Testing and Balancing reports;
   c) Functional performance testing of the equipment, controls, economizers, and lighting control systems.
3. All commissioning shall be performed as indicated here and elsewhere in the specifications and shall comply with provisions of the applicable Energy Conservation Code.

3.4 SEQUENCE OF OPERATIONS

A. Sequence of Operations: This is a performance-based specification intended to convey the control intent of the various systems. The contractor shall provide detailed shop drawings including P&ID diagrams, equipment lists and finalized sequences for review by the Engineer prior to installation. Any questions concerning specific details shall be referred to the engineer for clarification.

B. System: It is the intent of this specification that all new work shall be tied into the existing Siemens Controls Building Management System (BMS) as per Rhode Island College standards utilizing Direct Digital Control (DDC) to control and monitor all new HVAC systems within the scope of this project and for building maintenance personnel to interface with system sequences, setpoints and values.

C. Provide the necessary BACnet panel(s), terminal unit controllers and associated expansion modules necessary to incorporate new equipment to the existing BAS frontend using Siemens controls and equipment. This shall include all necessary interlock control wiring. Frontend graphics and associated programming for the new equipment to interface with existing BMS system shall be provided utilizing Siemens systems.

D. Provide Siemens programming and training as needed for facilities personnel.

E. Refer to allowances for additional control work.

F. Equipment and Wiring: This contractor shall provide all control equipment, and wiring (regardless of voltage) to accomplish the sequence of operations as detailed below.

G. Control and Monitoring: Sensors shall be provided throughout the HVAC systems (hydronic and air) as required to control and monitor their operation and verify performance at BMS.

H. Provide new graphics screen & points at BMS workstation as required to display locations & values of:

1. All sensor locations
2. All sensor status
3. Space temperature (°F)
4. Discharge air temperatures (°F)
5. Outdoor air temperature (°F)
6. Fan status (On/Off/Speed)
7. Pump status (On/Off/Speed)
8. Damper positions
9. Valve positions
10. Condenser Water Fan status (On/Off/Speed)
11. Condenser Water Entering water temperature (°F)
12. Condenser Water Leaving water temperature (°F)
13. Condenser water supply temperature out of range
14. Cooling Tower VFD status
15. Safeties
16. Alarm/Trouble from any of the monitored systems

I. Energy Efficiency: All controls and sequences shall be configured to provide maximum energy efficiency while maintaining occupant comfort.

J. Functional Performance Testing: The contractor shall perform complete and thorough Control Functional Performance Test (FPT) and Commissioning of the control systems. Upon completion of the FPT, a report shall be submitted to the engineer for review and comment. The FPT shall include testing of:

1. Safeties in every mode, i.e., in manual run mode as well as auto mode.
2. Signals to and from the fire alarm, security and entry systems.
3. Sequences of operation step by step in every mode and possible situation.
4. The operation of all control loops under actual operating conditions.
5. The interlocked operation of all equipment (i.e., the operation of starters in manual and off modes as well as auto mode, damper end switch interlock, etc.)
6. Where the BAS performs computations, the actual computation of any formulas and simulation of actual conditions to check the BAS computations.
7. Review of BAS programs for errors and omissions.

8. Hard copy graphs of trend logs of most, if not all, operational parameters.
9. Commissioning should test every conceivable life safety scenario and every conceivable operational scenario that the system will encounter and document this testing with printed graphs of trend logs.

K. Cooling Tower:

1. The cooling tower shall be controlled by a manufacturer supplied control panel and interface with the BMS.
2. Cooling tower & associated pumps to maintain condenser water temperature and a minimum chiller flow rate.
3. Modulate fan VFD via cooling tower controls to maintain constant cooling tower discharge temperature 85°F(adj.)
4. Basin Electric Heater to maintain sump water temperature @ 40°F(adj.)
5. Provide entering water temperature (°F), leaving water temperature (°F), fan status and alarms at the BMS.

L. Fans:

1. Return Air Fan & associated motorized dampers shall maintain the existing sequence of operations. RAF shall run continuously in the occupied mode. RAF shall be off and the outdoor air dampers shall be closed in the unoccupied mode. VFD shall be provided to adjust fan performance.
2. Exhaust fans shall run continuously during occupied mode. Maintain all existing interlocks.
3. Provide fan status at the BMS.

M. Existing Air Handling Units:

1. Existing Air Handling Units shall maintain the existing sequence of operations.
2. Maintain BMS interface.

N. Roof Hood Intakes:

1. Roof Hood motorized damper shall interlock with the associated HVAC unit. The motorized damper shall be open in the occupied mode and closed in the unoccupied mode
2. Provide BMS interface.

O. Steam Coil (S-1 – zone coil):

1. The steam coil control valve shall modulate to maintain discharge air temperature.
2. Provide BMS interface.

END OF DIVISION

DIVISION 26 00 00 – ELECTRICAL

PART 1 – GENERAL

1.1 RELATED SECTIONS

A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 0 and 1 Specification Sections, apply to work of this Division.
B. In case of a conflict between specifications in this Division and Division 0 and/or 1, the specifications in Divisions 0 and 1 shall prevail.
C. This Contractor shall also include allowances for startup and for making the systems fully operational, and for scope and design contingencies. Future changes in price for items not shown on these drawings will not be allowed if the system itself is shown on these Drawings.
D. Give notices, file plans, obtain permits and licenses, pay fees and back charges, and obtain necessary approvals from authorities that have jurisdiction as required to perform work in accordance with all legal requirements and with Specifications, Drawings, Addenda and Change Orders, all of which are part of Contract Documents.
E. The drawings show the layout of the electrical systems and indicate the approximate locations of outlets, apparatus, and equipment. The runs of feeders and branches as shown on the drawings are schematic only. The exact routing of branch circuits and feeders shall be determined by the structural conditions and possible obstructions. This shall not be construed to mean that the design of the systems may be changed, but refers only to exact runs between given points. The Engineer reserves the right to revise the drawings from time to time to indicate changes in the work.
F. The Contractor shall consult and review all contract and reference drawings which may affect the location of any outlets, apparatus and equipment to avoid any possible interference and permit full location of outlets, apparatus and equipment up to the time of rough-in is reserved by the Engineer and such change shall be made without additional expense to the Owner.
G. It shall be the responsibility of this Contractor to see that all electrical equipment such as junction and pull boxes, panelboards switches, controls and such other apparatus as may require maintenance and operation from time to time is made accessible. Although the equipment may be shown on the drawings in certain locations, the construction may disclose the fact that such locations do make its position accessible. In such cases this Contractor shall call the attention of the Engineer to the condition before advancing the construction to a state where a change will reflect additional expense to the Owner.

1.2 SUMMARY

A. This Division specifies the basic requirements for electrical installations and includes requirements common to more than one section of Division 26. It expands and supplements the requirements specified in sections of Division 1.
B. These documents have been prepared with the intention that they call for finished, tested work, in full operating condition and complete with necessary accessories.
C. The contract drawings are generally diagrammatic and convey the scope of work and general arrangement of apparatus and equipment. The locations of all items shown on the drawings or called for in the specifications that are not definitely fixed by dimensions are approximate only. The exact locations necessary to secure the best conditions and results must be determined at the project and shall have the approval of the Architect/Engineer before being installed. The Contractor shall follow the drawings in laying out work and shall check drawings of the other trades to verify spaces in which work will be installed. Maintain maximum headroom and space conditions at all points. If directed by the General Contractor, Engineer and/or Architect, the Contractor shall, without extra charge, make

reasonable modifications in the layout as needed to prevent conflict with work of other trades or for proper execution of the work.

D. These contract documents are complementary. What is called for by one shall be as binding as if called for by all. Materials or work described in words, which have well-known technical, or trade meaning shall be held to refer to such recognized standards. Incidental devices and accessories needed for complete, operational systems shall be provided even though they may not be indicated or identified in the documents.
E. If apparatus have been omitted, notify the Architects/Engineers of such belief. It is understood that bidder has included all required items and work in his bid, and will not if bid is successful, claim extra compensation for furnishing a complete and satisfactory system. If a particular item is called for or specified more than once in these contract documents, the higher grade shall be considered specified.
F. Should it appear that the character of the work is not sufficiently explained in these specifications or on the drawings, apply to the A/E for further information. Conform to the A/E's decision and directions as shall become part of these contract documents. The A/E reserves the right to be sole interpreter of the drawings and specifications, and all decisions shall be conclusive, final and binding on the parties.
G. Materials called for in these documents shall be new, unused equipment and of the latest recognized standards.
H. The work to be done under Division 16 is shown on the electrical drawings.

1.3 OUTLINE SCOPE OF WORK

A. The work under this contract, without limiting the generality thereof, includes all materials, labor, equipment, services, and transportation, unless otherwise specified, necessary to complete all systems of electrical wiring and equipment required by the drawings and/or as specified herein. It is the intent of this Division and accompanying electrical drawings that these systems be furnished complete in every respect. The Electrical Contractor shall furnish all wiring, equipment and labor needed for a complete operating installation.
B. The Electrical Contractor shall fully indemnify the Owner against any damages, removals and alteration work. This is in addition to the requirements of the General Conditions of the Specifications.
C. The Electrical Contractor shall review architectural, interior design and all other trades plans, elevations and details prior to any work and identify any conflicts between furnishings, furniture, art-work, molding, casework, televisions, signage, awnings, canopies, diffusers, fixtures, etc.. and electrical, fire alarm, audio/visual and communications devices shown on the electrical plans and details. The Electrical Contractor shall prepare 8.5” x 11” sketches showing the conflicts and submit to the Architect for resolution prior to any work. Failure of the electrical contractor to coordinate, identify and obtain a field-directive on any conflict herein noted, that results in installed electrical work to be relocated to the Owner/Architects liking shall be the sole-responsibility of the Electrical Contractor. The Electrical Contractor shall assume and cover all costs associated with conflicts not coordinated, identified and submitted to the Architect, inclusive of material, labor, overtime pay, etc.. and shall not affect the project schedule.

1.4 ROUGH-IN

A. Verify final locations for rough-ins with field measurements and with the requirements of the actual equipment to be connected.
B. Refer to equipment specifications in Divisions 2 through 25 for rough-in requirements.

1.5 SURVEYS AND MEASUREMENTS

A. Base measurements, both horizontal and vertical, on established bench marks. Work shall agree with these established lines and levels. Verify measurements at site and check the corrections of same as related to the work.
B. Should the Contractor discover any discrepancy between actual measurements and those indicated, which prevents following good practice or the intent of the drawings and specifications, he shall notify the A/E.

1.6 EXAMINATION OF SITE

A. Prior to submitting bid, visit the site where the work is to be performed and the materials are to be delivered. Failure in this respect shall not excuse the Contractor from his obligation to supply and install the work in accordance with the plans and specifications and under all conditions, as they exist.
B. By submitting a bid, this Contractor warrants that all specification Divisions, Sections and drawings showing equipment for plumbing, heating, ventilation, air conditioning, electrical, and architectural, have been examined and is familiar with the conditions and extent of work affecting this contract.

1.7 EQUIPMENT AND MATERIALS

A. All equipment and materials for permanent installation shall be the products of recognized manufacturer's and shall be new, unless noted for re-use, without damaged, functional or aesthetic components.
B. New equipment and materials shall:
    1. Be Underwriters Laboratories, Inc. (UL) labeled and/or listed where specifically called for, or where normally subject to such UL labeling and/or listing services
    2. Be without blemish or defect.
    3. Be in accordance with the latest applicable NEMA standards.
    4. Be products, which will meet with the acceptance of the agency inspecting the electrical work. Where such acceptance is contingent upon having the products examined, tested and certified by UL or other recognized testing laboratory, the product shall be so examined, tested and certified.
C. For all equipment, which is to be installed but not purchased as part of the electrical work, the electrical work shall include:
    1. The coordination of their delivery.
    2. Their unloading from delivery trucks driven in to any point on the property line at grade level.
    3. Their safe handling and field storage up to the time of permanent placement in the project.
    4. The correction of any damage, defacement or corrosion to which they may have been subjected.
    5. Their field make-up and internal wiring as may be necessary for their proper operation.
    6. Their mounting in place, including the purchase and installation of all dunnage, supporting members and fastenings necessary to adapt them to architectural and structural conditions.
D. Equipment, which is to be installed but not purchased as part of the electrical work, shall be carefully examined upon delivery to the project. Claims that any of these items have been received in such condition that their installation will require procedures beyond the reasonable scope of the electric work will be considered only if presented in writing within one week of the date of delivery to the project of the items in question. The electric work includes all procedures, regardless of how extensive, necessary to put into satisfactory operation, all items for which no claims have been submitted as outlined above.

1.8 ELECTRICAL INSTALLATIONS

A. All materials and labor called for, specified in Division 16 of the specifications, and or shown on the electrical drawings furnished under this contract shall be provided under Division 16 unless called for otherwise in the Division 16 documents. The word “provide” as used in the Division 16 documents, shall mean to furnish, install, connect up, complete with all accessories ready for operation and warranted.
B. Coordinate electrical equipment and materials installation with other building components. Fully coordinate work with that of other trades. Furnish information in writing that is needed for the coordination of clearances, etc., with the work of others, and such information shall be given in a timely fashion so as not to impede the progress of two or more trades. Confer and resolve the conflict immediately. If so directed by the A/E, prepare composite drawings to resolve any space or clearance conflict.
C. Verify all dimensions by field measurements.
D. Arrange for chases, slots, and openings in other building components to allow for electrical installations.
E. Coordinate the installation of required supporting devices and sleeves to be set in poured in place concrete and other structural components, as they are constructed.
F. Sequence, coordinate, and integrate installations of electrical materials and equipment for efficient flow of the Work. Give particular attention to large equipment requiring positioning prior to closing-in the building.
G. Coordinate the cutting and patching of building components to accommodate the installation of electrical equipment and materials.
H. Where mounting heights are not detailed or dimensioned, the exact location shall be determined by the A/E, install electrical services and overhead equipment to provide the code and/or utility requirements.
I. Install electrical equipment to facilitate maintenance and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations.
J. Coordinate the installation of electrical materials and equipment above ceilings with suspension systems, mechanical equipment and systems, and structural components.
K. Coordinate connection of electrical systems with exterior underground and overhead utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies. Provide required connection for each service.
L. Attention is directed to areas and items indicated on the drawings by the notations "HOLD", "N.I.C.", "BY OTHERS" and words of similar intent. The work indicated in these areas is shown for information and continuity only. Work or items furnished and installed in these areas solely for the convenience of this Contractor or others, without prior written approval of the Owner, shall be removed at the option of the Owner and at the Contractor's expense.
M. Provide all required staging and scaffolding for all the work under this Division.

1.9 ALTERATION WORK

A. Maintain continuity of service in areas where occupancy is to be maintained during alterations. If it becomes necessary to disconnect or interrupt service, obtain written consent of the Owner, and only disconnect service at the convenience of, and with the consent of the Owner. A copy of the written request for a shutdown shall be forwarded to the A/E.

1.10 CUTTING AND PATCHING

A. Cutting and patching of electrical equipment, components, and materials specified under Division 26 (conduit, sleeves, equipment, etc.) shall be performed by Electrical Contractor.
B. Refer to the Conditions of the Contract (General and Supplementary) and Division 1 Section: "Cutting and Patching" for definitions, requirements, and procedures.

C. Cutting and patching of existing structures (thru walls, floors, ceilings, etc.) to accommodate equipment, components, and materials of all Contractors, including Mechanical and Electrical Contractors, shall be performed by General Contractor and/or his designated Subcontractor.
D. Cutting and patching of new structures (thru walls, floors, ceilings, etc.) to accommodate installation of ill-timed work or removal and replacement of defective work or work not conforming to requirements of Contract Documents, shall be performed by General Contractor and/or his designated Subcontractor and costs shall be back charged to appropriate trade Contractor.
E. Do not endanger or damage installed work through procedures and processes of cutting and patching.
F. Arrange for repairs required to restore other work, because of damage caused as a result of electrical installations.
G. Arrange to have ducts, raceways, conduit, panelboards, boxes, and such other pertinent parts, set in place ahead of construction work so that they will be built-in with structures and eliminate need for cutting and patching. Failure to conform to this paragraph will require that this Contractor perform any cutting and patching required for his work at his expense. Cutting shall be neatly finished to match adjoining work in a manner acceptable to the A/E. Cutting and patching shall not affect the fire rating of walls or structural parts. Cutting and patching required to correct work, due to error or negligence of the Contractor, or to defects in his material or workmanship, shall be corrected at no additional cost to the Owner. Patching shall meet or exceed quality of adjacent surfaces. Cutting must be accomplished as not to weaken adjacent structural members and must be approved by the Structural Engineer before proceeding.
H. Perform cutting, fitting, and patching of electrical equipment and material required to:
    1. Uncover work to provide for installation of ill-timed work.
    2. Remove and replace defective work.
    3. Remove and replace work not conforming to requirements of the contract documents.
    4. Remove samples of installed work as specified for testing.
    5. Install equipment and materials in existing structures.
    6. Upon written instructions from the A/E, uncover and restore work to provide for A/E observation of concealed work.
I. Cut, remove and legally dispose of selected electrical equipment, components and materials as indicated, including, but not limited to, removal of electrical items indicated to be removed and items made obsolete by the work.
J. Protect the structure, furnishing, finishes, and adjacent materials not indicated or scheduled to be removed. Protect the electrical work and the work of others in a manner best suited to the particular case. Correct any damage done to any work at no additional cost.
K. Provide and maintain temporary partitions or dust barriers adequate to prevent the spread of dust and dirt to adjacent areas.
L. Locate, identify, and protect electrical services passing through areas that are to under-go remodeling or demolition. Electrical services serving other areas required to be maintained, and transit services must be interrupted, provide temporary services for the affected areas and notify the Owner prior to changeover.

1.11 SUBMITTALS

A. All submittals shall conform to Submittal Requirements and Procedures in Section 01 33 00 in the Division 1 specifications.
B. Shop drawings/manufacturer's cuts are required for:
    1. Wire & Cable.
    2. Lighting Fixtures.
    3. Panelboards.
    4. Transformers.
    5. Disconnect Switches.

6. Wiring Devices and Plates.
7. Fire Alarm System.
8. Fire Stopping Materials.
9. Generator & Transfer Switches.
10. Seismic Restraint Components.

C. After the list has been processed, submit complete shop drawings of all equipment. These shop drawings submittals shall be submitted within thirty days after the processing date of the original submittal.

D. All submittals shall be complete and submitted electronically to all applicable parties. No consideration will be given to partial submittals except with prior approval. No consideration will be given to faxed submittals.

E. Explanation of Shop Drawing Stamp:
   1. Approved: indicates that we have not found any reason why this item should not be acceptable within the intent of the documents.
   2. Approved with Comments: indicates that we have found questionable components which, if corrected or otherwise explained, make the product acceptable.
   3. Resubmit for Final Review: indicates that this item should be resubmitted for approval before further processing.
   4. Does Not Conform: indicates that the item will not meet the intent of the Contract.

F. No shop drawing stamp or note shall constitute an order to fabricate or ship. Such notification can only be performed by the Project Manager for construction, the Contractor scheduling his own work, or the Owner.

G. Submittal of shop drawings, product data, will be reviewed only when submitted by the Contractor. Data submitted from Sub-contractors and material suppliers directly to the A/E will not be processed.

H. If shop drawing is not in compliance after two submissions, a third submission for the same manufacturer will not be considered for review.

I. Check shop drawings and other submittals to assure compliance with contract documents before submittal to A/E.

J. Review of shop drawings is final and no further changes shall be considered without written application. Shop drawing review does not apply to quantities, dimensions, nor relieve this Contractor of his responsibility for furnishing materials or performing his work in full compliance with these contract drawings and specifications. Review of these shop drawings shall not be considered a guarantee of the measurements of this building or the conditions encountered.

K. General requirements for the substitution of equipment and submittal of shop drawings as follows. If apparatus, systems or materials are substituted for those specified, and such substitution necessitates changes in, or additional connections, wiring, supports, or construction, it shall be provided by this Contractor at no additional cost to the Owner. This Contractor shall assume all cost and entire responsibility thereof. The approval of substituted equipment does not relieve the contractor of his/her responsibility of shop drawing errors related to details, sizes, quantities, wiring diagram arrangements and dimensions which deviate from the Specifications, and/or job conditions as they exist. It is the contractor's responsibility to submit only those items that meet the specified apparatus, systems and material. Should any non-conformance code items be installed, they shall be replaced by this Contractor at no additional cost to the Owner. The construction means and methods used in the project shall be reviewed and approved through the local building department or a deputy inspector to insure compliance with the current codes, project specifications and general building practices.

L. Coordination drawings shall be submitted and shall show all HVAC, Electrical, Plumbing and Fire Protection systems superimposed in order to identify conflicts and ensure inter-coordination of all trades. Coordination drawings shall be initiated under this Section of the Specifications. It is this Contractors responsibility for preparation of project coordination drawings showing the installation of all electrical equipment, switchgear, motor control centers, panelboards, transformers, transfer switches, disconnect switches, enclosed circuit breakers, conduits, outlets, switches and accessories to be provided under this Section of the Specifications. These drawings shall be prepared at not less

than 3/8 in. = 1 ft. scale, and shall show building room layouts, structural elements, ductwork and lighting layouts of function. A reproducible copy of each drawing prepared shall then be submitted to the Mechanical Contractor, who shall be responsible to coordinate his equipment and systems and shall show these on the drawings submitted. After this Contractor has fulfilled his obligation, he shall notify all other Contractors. After each drawing has been coordinated between trades, each trade shall sign each drawing, indicating acceptance of the installation. This Contractor shall then print the coordination original and these prints submitted through the General Contractor to the architect for review and comment, similar to shop drawings. Comments made on these drawings shall result in a correction and re-submittal of the drawings. A Subcontractor who fails to promptly review and incorporate his work on the drawings shall assume full responsibility of any installation conflicts affecting his work and of any schedule ramifications. Review of coordination drawings shall not diminish responsibility under this Contract for final coordination of installation and maintenance clearances of all systems and equipment with Architectural, Structural, Mechanical, and Electrical Contractors.

1.12 PRODUCT OPTIONS AND SUBSTITUTIONS

A. Refer to the Conditions of the Contract (General and Supplementary) and Division 1 for definitions, requirements, and procedures.
B. If materials of equipment are substituted for specified items that alter the systems shown or its physical characteristics, or which have different operating characteristics, clearly note the alterations or differences and call it to the attention of the A/E. Under no circumstances shall substitutions be made unless identical material or equipment has been successfully operated for at least three consecutive years.
C. All substitution made by the Contractor shall require the Contractor to fully coordinate the substitution with other trades. The Contractor must make any modifications required by the substitution at no additional cost to the Owner. In addition the Contractor must notify the A/E of any changes required and obtain approval for the changes. The review of the shop drawings by the A/E shall not relieve the Contractor from his responsibility as set forth in this specification.

1.13 NAMEPLATE DATA

A. Provide permanent operational data nameplate on each item of power operated equipment, conduits with pull string, indicating manufacturer, product name, model number, serial number, capacity, operating and power characteristics, labels of tested compliances, and similar essential data. Locate nameplates in a readily accessible location.

1.14 DELIVERY STORAGE AND HANDLING

A. Deliver products to project properly identified with names, model numbers, types, grades, compliance labels, and similar information needed for distinct identifications; adequately packaged and protected to prevent damage during shipment, storage, and handling.
B. Store equipment and materials at the site, unless off-site storage is authorized in writing. Protect stored equipment and materials from damage. All devices shall be stored in a locked room. Assume responsibility for the devices until the date of final inspection.
C. Coordinate deliveries of electrical materials and equipment to minimize construction site congestion. Limit each shipment of materials and equipment to the items and quantities needed for the smooth and efficient flow of installations.

1.15 RECORD DOCUMENTS

A. As work progresses and for the duration of Contract, maintain a complete and separate set of prints of Contract Drawings at job site at all times. Record work completed and all changes from original Contract Drawings clearly and accurately including work installed as a modification or addition to the original design. Work shall be updated on a weekly basis and shall be made available for review by Architect. Failure to perform this work shall be reason for withholding requisition payments. In addition, take photographs of all concealed equipment in gypsum board ceilings, shafts, and other concealed, inaccessible work. At completion of work, make copies of photographs with written explanation on back. These shall become part of Record Documents.
B. At completion of work prepare a complete set of Record As-Built Drawings in AutoCAD, Computer Aided Drafting (CAD) software, showing all systems as actually installed, including all fire alarm and electrical circuitry. The Record As-Built Drawings computer files shall be made available to the Architect, Engineer and Owner prior to final payment.
C. The Architect will not certify the accuracy of the Record Drawings. This is the sole responsibility of the Electrical Contractor.
D. This trade shall submit the record set for approval by the Fire and Building Departments in a form acceptable to the departments, when required by the jurisdiction.
E. Drawings shall show record condition of details, sections, riser diagrams, control changes and corrections to schedules. Schedules shall show actual manufacturer and make and model numbers of final equipment installation.

1.16 WARRANTIES

A. Refer to the Conditions of the Contract (General and Supplementary) and Division 1 for definitions, requirements, and procedures.
B. All work and equipment furnished under this Division shall be guaranteed free from defects in workmanship or materials for a period of one (1) year, unless specifically noted otherwise for a particular system, from the date of final acceptance of the systems as set forth in this Contract. The Subcontractor shall replace any defective work developing during this period, unless such defects are clearly the result of misuse of equipment by persons not under the control of the Subcontractor, without cost to the Owner. Where such defective work results in damage to work of other Sections, all such work shall be restored to its original condition by mechanics skilled in the affected trade, at the expense of the Subcontractor. The Subcontractor shall submit a separate written guarantee stipulating the aforesaid conditions.
C. Prior to or at the time of Substantial Completion for the work and during administrative close-out of the project, submit one (1) copy of all specified warranties and guarantees to the Engineer for review, approval and subsequent transmittal to the Owner.
D. Warranties and guarantees, including those specified in excess of the general one (1) year guarantee, shall be complete for all specific materials, systems, sub-systems, equipment, appliances and products specified and required by the Contract Document.
E. Warranties and guarantees shall clearly define what is to be guaranteed; the extent, terms, conditions, time and effective dates.
F. Copies of the same warranties and guarantees shall be included in the “Operating and Maintenance Manual” as specified herein and in the Division 1 specifications.

1.17 CLEANING

A. Refer to the Conditions of the Contract (General and Supplementary) and Division 1 for definitions, requirements, and procedures.
B. Upon completion of work, the Contractor shall clean, polish and leave bright, fixtures and lamps, and shall remove dust, dirt, debris and loose plaster from panelboards, controls, and switchboards. Unused openings in pull boxes, junction boxes, equipment and raceways shall be capped or closed by an approved means. Replace all inoperative lamps.

1.18 DEFINITION OF TERMS

A. "This Contractor" or "E.C." specifically means, the Electrical Contractor working under this Division of the specifications.
B. "Concealed" means hidden, in chases, furred spaces, walls, above ceilings or enclosed in construction.
C. "Exposed" means visible in sight or not installed "concealed" as defined above.
D. "Approved Equal" means any equipment or material which is approved by the Engineer and equal in quality, durability, appearance, strength, design and performance to the equipment or material originally specified.
E. "Conduit" shall mean all conduit including fittings, joints, hangers and supports.
F. "Furnish" shall mean to purchase and deliver to the project site complete with every necessary appurtenance and support, all as part of the electrical work.
G. "Install" shall mean to perform every operation necessary to establish secure mounting and correct operation at the proper location in the project, all as part of the electrical work.
H. "Provide" shall mean to furnish and install.

1.19 QUALITY ASSURANCE

A. Obtain services of manufacturer's representatives of electrical equipment, during erection and construction of their respective equipment to insure proper installation of same.
B. A letter is required from each system manufacturer's representative certifying to the A/E that requirements have been checked and are properly installed and operating.

1.20 PERFORMANCE TESTS - ELECTRICAL

A. Test and adjust the electrical systems and equipment during the progress of the work.
B. Upon completion of work and after preliminary tests to assure that all systems are complete and in proper working order, arrange with the A/E to conduct performance tests of the electrical systems. These tests may be witnessed by the A/E prior to acceptance of systems and shall be arranged for the purpose of demonstrating compliance with contract documents. During this period, visually inspect all electrical equipment. Lighting fixtures shall be tested with specified lamps in place for not less than six (6) hours. Check voltages to assure that all transformer taps are properly set.
C. General operating tests shall be performed under as near design conditions as possible, for a period of not less than one (1) hour for each system, and shall demonstrate that all equipment is functioning in accordance with specifications. Furnish all instruments, ladders, test equipment and personnel required for tests. Any equipment or systems found by test to be deficient or unsatisfactory shall be replaced and tests repeated as often as necessary to assure compliance with contract documents.
D. Test all feeders, sub-feeders and all branch wiring for amperage, voltage, phase balance, phase sequence of A,B,C and insulation resistance, then submit the results of this test to the A/E neatly typed in triplicate for review. This test may be conducted at any time up to, through and including, the guarantee period if requested by the A/E, at no additional cost to the Owner.
E. Phase balance the complete electrical system, phase balance all panels as near as loads will permit under normal working conditions.
F. Test all ground conductors for current flow, as near design operating conditions as possible. If any measured current exceeds one (1) ampere, determine and correct the cause. Also, if measured resistance is greater than 5 ohms indoor or 10 ohms outdoor, determine and correct the cause.
G. During the progress or completion of the work it shall be subject to the inspection of the Owner and to such other inspectors, as may have jurisdiction, including those of the Electric Company, Fire Department and the Telephone Company.
H. The Contractor shall be responsible for correct voltages, tap settings, trip settings and correct phasing on all equipment. Secondary voltages shall be measured at the line side of the main breakers with

the breakers in an open position, at panelboards, and at such other location on the distribution systems and branch circuits as directed by the Engineer.

I. At completion of the work, Contractor shall submit to the Owner's representative in writing a statement stating: (1) that the work is complete; (2) that the entire installation is in accordance with the drawings and specifications; (3) that preliminary tests have been made; and (4) that the work is ready for final inspection and test.

J. A final inspection of the installation to determine compliance with the drawings and specifications will be made by the Owner's representative. Work will be checked for quality of materials, quality of workmanship, proper installation and finished appearance. The electrical contractor shall provide the services of the project electrical foreman for inspection purposes. The foreman shall remove and reinstall wiring devices, junction box covers, panelboard trims, switchboard covers, terminal box covers, ceiling tiles, lighting fixtures, etc. as required to facilitate any inspections required by the Owner's representative.

K. The Contractor shall arrange and conduct operating tests on all equipment in the presence of the Owner's representative. The components parts of systems and the various systems shall be demonstrated to operate in accordance with the requirements and intent of this specification. Any non-complying or defective materials or workmanship disclosed as a result of the inspection and tests shall be corrected promptly by the Contractor, and the tests repeated as often as necessary until approved and accepted by the Owner's representative.

L. The Contractor shall visit the site to acquaint himself with existing conditions. No extra compensation will be paid for failure to comply with this paragraph.

M. The Electrical Contractor shall provide supervision, labor, materials, tools, test equipment, and all other equipment or services and expenses required to test, adjust, set, calibrate, and operationally check work and components of the electrical systems and circuitry throughout this Division.

N. The electrical contractor shall pay for all tests including expences incident to retests occasioned by defects and failures of equipment to meet specifications at no additional cost to the owner.

O. Any defects or deficiencies discovered in any of the electrical work shall be corrected at no cost to the owner.

P. All testing shall be compatible with the manufacturer’s installation instructions.

1.21 SEISMIC RESTRAINT

A. It is the intent of this seismic specification to keep all electrical building system components in place during a seismic event.

B. All electrical systems must be installed in strict accordance with seismic codes, component manufacturer's and building construction standards. Whenever a Conflict occurs between the manufacturer's or construction standards, the most stringent shall apply.

C. This contractor shall engage a professional structural engineer registered in the jurisdiction of this project to review the entire installation to determine all seismic restraint requirements and methods. Contractor shall submit a report outlining the structural engineer’s review as well as seismic restraint shop drawings and supporting calculations prepared by the professional structural engineer for review by the Architect.

D. Seismic restraints shall be designed in accordance with seismic force levels as detailed in the applicable building code.

1.22 TEMPORARY LIGHT AND POWER

A. Under this Section of the specifications, this Contractor shall provide temporary electric service, sized suitable for construction for each trade. This contractor shall provide all material and labor for temporary electrical service per the local power company’s requirements and standards with all necessary panelboards, disconnect switches, transformers, conduit, wiring, etc. as required. This contractor shall pay all associated costs, up front.

B. Where temporary electrical service cannot be obtained from the local power company, this contractor shall provide a temporary, on-site, electric generator with all necessary panelboards, disconnect switches, transformers, conduit, wiring, etc. as required. The fuel used for the generator shall be provided and paid for by this Contractor.
C. This contractor shall provide a distribution system with circuits for receptacles and lighting as required for construction. This contractor shall maintain the temporary electrical system during construction and remove the system when construction is complete.
D. Under this Division of the specifications, this Contractor shall provide and maintain temporary lighting based on using not less than one 100-watt lamp for each 100 square feet of building floor area and one duplex GFCI receptacle for each 200 square feet of building floor area. Where higher lighting intensities are required by Federal or State laws or otherwise specified, the above specified wattage shall be increased to provide the increase intensities.
E. This contactor shall provide temporary power and telephone services from the local telephone company for site trailers, fax machines, computers, etc., per the general contractor's direction.
F. The service shall incorporate ground fault protection and comply with NEC Article 527 and OSHA requirements.

1.23 PERMITS

A. Obtain all required electrical permits and pay all fees for same.
B. Provide to Engineer, in duplicate, a certificate of final inspection from the authority having jurisdiction for the electrical and systems.

1.24 OPERATING, INSTRUCTION, AND MAINTAINANCE MANUALS

A. Refer to Division 01 77 00 – CONTRACT CLOSEOUT for submittal procedures pertaining to operating and maintenance manuals.
B. Each copy of the approved operating and maintenance manual shall contain copies of approved shop drawings, equipment literature, cuts, bulletins, details, equipment and engineering data sheets and typewritten instructions relative to the care and maintenance for the operation of the equipment, all properly indexed.

1.25 BIDDERS REPRESENTATION

A. By the act of submitting a bid for the proposed contract, the Bidder represents that:
    1. The Bidder and all subcontractors the Bidder intends to use have carefully and thoroughly reviewed the drawings, specifications and other construction contract documents and have found them complete and free from ambiguities and sufficient for the purpose intended; further that,
    2. The Bidder and workmen, employees and subcontractors the Bidder intends to use are skilled and experienced in the type of construction represented by the construction contract documents bid upon; further that,
    3. Neither the Bidder nor any of the Bidder's employees, agents, intended suppliers or subcontractors have relied upon any verbal representations, allegedly authorized or unauthorized from the Owner, or the Owner's employees or agents including architects, engineers or consultants, in assembling the bid figure; and further that,
    4. The bid figure is based solely upon the construction contract documents and properly issued written addenda and not upon any other written representation.

1.26 UTILITY COMPANY & AGENCY COORDINATION

A. This section includes, but is not limited to coordination with the following utilities, agencies and authorities having jurisdiction:
   1. Power Company: This Contractor shall coordinate with the local utility power company and provide all material & labor required to comply with the utility power company's requirements and standards, prior to ordering any electrical equipment, such as, switchgear, panels, transformers, disconnect switches, TVSS, etc. This Contractor shall confirm metering sequence (hot or cold) and make the appropriate provisions and/or changes for the utility companies approved metering sequence arrangement. Notify Engineer of discrepancies between the plans and the local utility company's standards. No extra compensation will be given for corrections required to this Contractor for failure to coordinate with the utility company, but corrections shall be made. All A.I.C. ratings, grounding, bonding, concrete pads & curbs, protective bollards, raceways, ductbank, manholes, etc., shall be in accordance with the utility company's standards.
   2. Telephone Company: This Contractor shall coordinate with the local telephone company and provide all material & labor required to comply with the telephone company's requirements and standards, prior to ordering any electrical or telephone equipment, such as, terminal boards, grounding systems, raceways, ductbanks, manholes, etc. This Contractor shall confirm the telephone company's requirements and provide as necessary. Notify Engineer of discrepancies between the plans and the telephone company's standards. No extra compensation will be given for corrections required to this Contractor for failure to coordinate with the telephone company, but corrections shall be made.
   3. Cable TV Company: This Contractor shall coordinate with the local cable TV company and provide all material & labor required to comply with the cable TV company's requirements and standards, prior to ordering any electrical or cable TV equipment, such as, terminal boards, grounding systems, raceways, ductbanks, manholes, etc. This Contractor shall confirm the cable TV company's requirements and provide as necessary. Notify Engineer of discrepancies between the plans and the cable TV company's standards. No extra compensation will be given for corrections required for failure to coordinate with the cable TV company, but corrections shall be made.
   4. Local Fire Marshal: This contractor shall verify with the local fire alarm official, the type of master-box or municipal connection required for this project. This contractor shall provide all material & labor to comply with the local municipality. Notify Engineer of discrepancies between the plans and the municipality's standards. No extra compensation will be given for corrections required for failure to coordinate with the municipality, but corrections shall be made.
   5. Electrical Inspector: Review plans and specifications with the local electrical and/or wiring inspector(s). Obtain and pay for all permits.
   6. Building Inspector: Review plans and specifications with the local building inspector, if not done so by the General Contractor.
   7. OSHA Representative: Review plans and specifications with the local OSHA representative, if not done so by the General Contractor.
   8. Dig Safe: This contractor shall notify and coordinate with Dig Safe prior to any excavation; digging; trenching; grading; tunneling; augering; boring; drilling; pile driving; plowing-in or pulling-in pipe, cable, wire, conduit, or other sub-structure; backfilling; demolition; and blasting related to this Contractor.

B. The Electrical Contractor shall pay for all permits, inspections, labor, material and fees associated with the various Utility Companies coordination requirements mentioned in this Division and for this Contractor's work under this project.

C. The Electrical Contractor shall carry a minimum of $15,000 of utility expenses. In the case the expenses are less than the carried expense, the difference will be credited to the owner. In the case the utility charges are more than the carried expense, the remaining payment shall be coordinated between the Electrical Contractor, General Contractor and Owner.

D. HVAC, Plumbing, Fire Protection, and Electrical Drawings are diagrammatic. They indicate general arrangements of mechanical and electrical systems and other work. They do not show all offsets

required for coordination nor do they show the exact routings and locations needed to coordinate with structural and other trades and to meet Architectural requirements.

E. In all spaces, prior to installation of visible material and equipment, including access panels, review Architectural Drawings for exact locations and where not definitely indicated, request information from Architect. Where the electrical work shall interfere with the work of other trades, assist in working out the space conditions to make satisfactory adjustments before installation. Without extra cost to the Owners, make reasonable modifications to the work as required by normal structural interferences. Pay the General Contractor for additional openings, or relocating and/or enlarging existing openings through concrete floors, walls, beams and roof required for any work which was not properly coordinated. Maintain maximum headroom at all locations. All piping, duct, conduit, and associated components to be as tight to underside of structure as possible.

F. If any electrical work has been installed before coordination with other trades so as to cause interference with the work of such trades, all necessary adjustments and corrections shall be made by the trades involved without extra cost to the Owners.

G. Where conflicts or potential conflicts exist and engineering guidance is desired, submit sketch of proposed resolution to Architect and Engineer for review and approval.

PART 2 – PRODUCTS

2.1 CONDUIT

A. Minimum Size: ¾-inch, unless otherwise specified.

B. Underground Installations:
   1. More than Five Feet from Foundation Wall: Use thick wall nonmetallic conduit concrete encased.
   2. Within Five Feet from Foundation Wall: Use rigid steel conduit concrete encased.
   3. In or Under Slab on Grade: Use plastic coated conduit.
   4. Minimum Size: 1-inch.

C. Outdoor Locations, Above Grade: Use rigid steel conduit.

D. In Slab Above Grade:
   1. Use rigid steel conduit.
   2. Maximum Size Conduit in Slab: ¾ inch (19 mm); ½ inch (13 mm) for conduits crossing each other.

E. Wet and Damp Locations: Use rigid aluminum conduit.

F. Dry Locations:
   1. Concealed and in Cable-Tray: Use metal clad (MC) cable (see Division 1)
   2. Exposed: (Unfinished or utility spaces) Use electrical metallic tubing.

G. Metal conduit: Rigid Steel Conduit shall comply with ANSI C80.1 and be heavy wall zinc coated steel. Rigid Aluminum Conduit shall comply with ANSI C80.5. Intermediate Metal Conduit (IMC) shall be rigid steel. Fittings and Conduit Bodies shall comply with ANSI/NEMA FB 1 and material to match conduit. Acceptable manufacturers are Western Tube and Conduit Company, Allied Tube and Conduit Company and Triangle Wire and Cable, Inc.

H. Flexible metal conduit shall be interlocked aluminum contruction. Fittings shall comply with ANSI/NEMA FB 1. Acceptable manufacturers are AFC Cable Systems, Electri-Flex Company and Eastern Flexible Conduit Technologies. All flexible conduits shall include a grounding conductor.

I. Electrical metallic tubing (EMT) shall comply with ANSI C80.3; galvanized zinc coated steel tubing. Fittings and Conduit Bodies shall comply with ANSI/NEMA FB 1; steel, compression or set screw type. Acceptable manufacturers are Western Tube and Conduit Company, Allied Tube and Conduit Company and Triangle Wire and Cable, Inc.

J. Nonmetal conduit shall comply with NEMA TC 2; Schedule 40 PVC, or as indicated on plans. Fittings and Conduit Bodies shall comply with NEMA TC 3. Acceptable manufacturers are Carlon or approved equal.

K. Flexible nonmetallic conduit (Sealtite) shall be UL and CSA listed for purpose specified and shown. Acceptable manufacturers are Carlon or approved equal.
L. Install conduit in accordance with NECA "Standard of Installation." Install nonmetallic conduit in accordance with manufacturer's instructions.
M. Arrange supports to prevent misalignment during wiring installation. Support conduit using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers. Group related conduits; support using conduit rack. Construct rack using steel channel; provide space on each for 25 percent additional conduits. Fasten conduit supports to building structure and surfaces under provisions of Division 1. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports. Do not attach conduit to ceiling support wires.
N. Arrange conduit to maintain headroom and present neat appearance. Route exposed conduit parallel and perpendicular to walls. Route conduit installed above accessible ceilings parallel and perpendicular to walls. Route conduit in and under slab from point-to-point. Do not cross conduits in slab.
O. Maintain adequate clearance between conduit and piping. Maintain 12-inch (300 mm) clearance between conduit and surfaces with temperatures exceeding 104 degrees F (40 degrees C).
P. Cut conduit square using saw or pipe cutter; de-burr cut ends. Bring conduit to shoulder of fittings; fasten securely. Join nonmetallic conduit using cement as recommended by manufacturer. Wipe nonmetallic conduit dry and clean before joining. Apply full even coat of cement to entire area inserted in fitting. Allow joint to cure for 20 minutes, minimum. Use conduit hubs or sealing locknuts to fasten conduit to sheet metal boxes in damp and wet locations and to cast boxes.
Q. Install no more than equivalent of three 90-degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams. Use hydraulic one-shot bender to fabricate or factory elbows for bends in metal conduit larger than 2 inch (50 mm) size.
R. Avoid moisture traps; provide junction box with drain fitting at low points in conduit system. Provide suitable fittings to accommodate expansion and deflection where conduit crosses seismic, control and expansion joints. All expansion and deflection fittings shall have a ground strap. Provide suitable pull string in each empty conduit except sleeves and nipples. Use suitable caps to protect installed conduit against entrance of dirt and moisture.
S. Ground and bond conduit under provisions of NEC 250.

2.2 SURFACE RACEWAYS

A. Multi-outlet assemblies shall be steel channel with fitted cover suitable for use as multi-outlet assembly. There shall be two compartments separated be a steel divider; one for power wiring and one for tele/data wiring. Provide flush feed box equal to Wiremold #WSA42-4 with backfeed kit #WSA86. Color of surface raceway per the Architect and Owner.
B. Provide 125 volt, 20 amp duplex receptacles with ground slot spaced 12 inches (300 mm) on center or as indicated on the plans. Color of receptacles per the Architect and Owner.
C. Provide tele/data outlets spaced 12 inches (300 mm) on center or as indicated on the plans. The number of jacks per tele/data outlet as indicated or as required per the Owner. Color of outlets per the Architect and Owner.
D. Provide cover plates equal to Wiremold #4049.
E. Coordinate with Architect and Owner for exact height of surface raceway prior to installing any material. De-rate conductors as required per code. Coordinate with furniture supplier and millwork supplier to avoid conflicts with counter wall supports and surface raceways. Coordinate bushed openings in counters for cord & plug connections, where receptacles will be installed under counters.
F. Acceptable manufacturers are Wiremold Company, Hubbell or approved equal.
G. Fittings: Furnish manufacturer's standard couplings, elbows, outlet and device boxes, and connectors.
H. Wireways shall be steel with rust inhibiting primer coating with gray enamel finish for general wiring in unfinished spaces. Provide as necessary per the job conditions.

I. Install and mount products in accordance with the manufacturer's instructions. Use flat-head screws, clips, and straps to fasten raceway channel to surfaces. Mount plumb and level. Use suitable insulating bushings and inserts at connections to outlets and corner fittings. Close ends of wireway and unused conduit openings. Ground and bond under provisions of NEC 250.

2.3 CABLE TRAY

A. General: Except as otherwise indicated, provide metal cable trays, of types, classes and sizes indicated with splice hangers and all other necessary accessories. Provide cable trays with rounded edges and smooth surfaces in compliance with applicable standards, and with the following additional construction features.
B. Materials and Finishes – Aluminum: Rails and rungs shall be extruded from Aluminum Association Alloy 6063. All hardware and fasteners shall be zinc-plated steel.
C. Rungs shall be spaced every 9 inches.
D. Straight sections shall be supplied in 12 foot lengths.
E. Cable tray width shall be 18 inches.
F. Cable tray loading depth shall be 4 inches.
G. Cable tray shall meet the loading requirements of NEMA 12C.
H. Cable tray shall meet the requirements of NEMA VE-1 or CSA C22.2 No. 126-M91.
I. Manufacturer: Subject to compliance with these specifications, cable tray system shall be as manufactured by B-Line Systems, Square D, Huskey or equal.

2.4 DUCT BANK

A. Verify that field measurements are as indicated. Verify routing and termination locations of duct bank prior to excavation for rough-in. Verify locations of manholes prior to excavating for installation. Duct bank routing is shown in approximate locations unless dimensions are indicated. Route as required to complete duct system. Manhole locations are shown in approximate locations unless dimensions are indicated. Locate as required to complete duct bank system.
B. Underground Warning Tape: Provide 3-inch wide plastic tape 12” below finished grade, colored yellow with suitable warning legend describing buried electrical lines; Model #47586 as manufactured by Seton or equal.
C. Install duct to locate top of duct bank at 30” below finished grade or at depths as indicated on drawings. Install duct with minimum slope of 4-inches per 100-feet. Slope duct away from building entrances.
D. Provide suitable fittings to accommodate expansion and deflection where required. Terminate duct at manhole entries using end bell. Stagger duct joints vertically in concrete encasement 6 inches minimum. Use suitable separators and chairs installed not greater than 4 feet (1200 mm) on centers. Band ducts together before backfilling and placing concrete. Securely anchor duct to prevent movement during concrete placement.
E. Place concrete as required and under provisions of Division 3. Use mineral pigment to color concrete red. Provide minimum 3-inch concrete cover at bottom, top, and sides of duct bank. Provide two No. 4 steel reinforcing bars in concrete ductbank under paved areas. Connect to existing concrete encasement using dowels. Connect to manhole wall using dowels.
F. Provide suitable pull string in each empty duct except sleeves and nipples. Swab duct. Use suitable caps to protect installed duct against entrance of dirt and moisture.
G. Backfill trenches as required and under provisions of Division 2. Interface installation of underground warning tape with backfilling specified in Division 2. Install warning tape 12-inches below finished surface.

2.5 BUILDING WIRE & CABLE

A. Building Wire and Cable shall be copper with 600V insulation rated at 75°C minimum, Type XHHW insulation for feeders and branch circuits larger than #3 AWG; Type THHN/THWN insulation for feeders and branch circuits #4 AWG and smaller.
B. Conductors shall be of soft drawn 98% minimum conductivity properly refined copper, solid construction where No. 10 AWG and smaller, stranded construction where No. 8 AWG and larger.
C. Exterior of wires shall bear repetitive markings along their entire length indicating conductor size, insulation type and voltage rating.
D. Exterior of wires shall be color coded, so as to indicate a clear differentiation between each phase and between each phase and neutral. In all cases, grounded neutral wires and cables shall be identified by the colors “white” or “gray”. In sizes and insulation types where factory applied colors are not available, wires and cables shall be color coded by the application of colored plastic tapes in overlapping turns at all terminal points, and in all boxes in which splices are made. Colored tape shall be applied for a distance of 6 inches along the wires and cables, or along their entire extensions beyond raceway ends, whichever is less.
E. Final connections to motors shall be made with 18” of neoprene sheathed flexible conduit.
F. Minimum branch circuit conductor size shall be No. 12 AWG installed in conduit. Motor control circuit wiring shall be minimum No. 14 AWG installed in conduit.
G. Fire alarm and security system wiring shall be No. 16 twisted non-shielded pairs for alarm and trouble circuits and a minimum of #14 AWG for device power, control and alarm annunciation circuits. Fire alarm system riser circuits shall be 2-hour rated, CI type (circuit integrity) cable per NFPA 72 and NEC 760.
H. Other wires and cables required for the various systems described elsewhere in this Division of the Specifications shall be as specified herein, as shown on the Contract Drawings, or as recommended by the manufacturer of the specific equipment for which they are used, all installed in conduit.
I. Metal clad sheathed cable NFPA 70, type MC may be used for branch circuitry where shown and where run concealed and not subject to physical damage. All branch circuits shall be run in conduit from the panelboard to the first outlet. All type MC cable used shall contain a full size insulated ground conductor. All conductors shall be copper. All type MC cable insulation used shall have voltage rating of 600 volts, shall have a temperature rating of 75° C, and shall be thermoplastic material. Armor material shall be steel and armor design shall be interlocked metal tape. Fire alarm rated MC cable may be used for fire alarm work where concealed and approved by the Authority Having Jurisdiction.
J. Metal-Clad cable (Type MC) for circuits supplying computer equipment, electronic discharge lighting and other sensitive electronic equipment shall consist of 90°C THHN copper conductors with insulated ground and oversized neutral conductor (or one full size neutral conductor for each phase conductor). Cable shall be U.L. listed/labeled, and shall meet the requirements of NEC Art. 334 and 675.
K. Use armored cable (AFC Type HCF-90 or equal) for branch circuits and feeders in areas of patient care in hospitals, nursing homes and medical centers, medical office buildings and nurses’ office areas of schools. This cable shall consist of 90°C THHN copper conductors with combined armor/bond wire (equipment) plus a green insulated ground (redundant). Use insulated bushings. Cable shall be U.L. listed/labeled, and shall meet the requirements of NEC Art. 333, 517 and 645.
L. Use armored cable (AFC Type HCF-90 or equal) for branch circuits and feeders in all buildings in the following areas; data processing systems, places of assembly, under raised floors, above suspended ceilings and in other environmental air-handling spaces. This cable shall consist of 90°C THHN copper conductors with combined armor/bond wire (equipment) plus a green insulated ground (redundant). Use insulated bushings. Cable shall be U.L. listed/labeled, and shall meet the requirements of NEC Art. 333, 517 and 645.
M. Mineral-insulated metal-sheathed fire-resistive cables, type MI, shall consist of a factory assembly of one or more solid copper conductors insulated with highly-compressed magnesium oxide and enclosed in a seamless, liquid and gas-tight continuous copper sheath. Cables shall be rated for 600 volts. Cable shall comply with Article 330 of the National Electrical Code. Cables shall be classified by Underwriters Laboratories, Inc. as having a 2-hour fire resistive rating. Cable terminations shall be

made with UL listed mineral-insulated cable fittings. Installation of MI cables shall be in accordance with the manufacturer's instructions. Cables shall be as manufactured by Pyrotenax USA, Inc., or approved equal.

N. Wiring materials except MI cable shall be manufactured by Triangle, Essex, General Cable, AFC, Southwire or equal.
O. Concealed Dry Interior Locations: Use only building wire Type THHN/THWN or XHHW insulation in raceway, or metal clad cable where concealed and code acceptable.
P. Exposed Dry Interior Locations: Use only building wire, Type THHN/THWN or XHHW insulation, in raceway.
Q. Above Accessible Ceilings: Use only building wire, Type THHN/THWN or XHHW insulation, in raceway or metal clad cable where code acceptable.
R. Wet or Damp Interior Locations: Use only building wire, Type THHN/THWN or XHHW insulation, in raceway.
S. Exterior Locations: Use only building wire, Type THHN/THWN or XHHW insulation, in raceway.
T. Underground Installations: Use only building wire, Type THHN/THWN or XHHW insulation, in raceway.
U. Wiring methods, in general, are as follows:
    1. Galvanized rigid steel conduit shall be used for telephone system sleeves for main cable runs between floors, closets, etc. and for sweeps, bends, etc. in ductbanks and as specifically noted on the plans. EMT shall be used generally for exposed circuiting in unfinished spaces. Metal clad cable (type MC) may be used for branch circuiting and fire alarm rated MC cable for fire alarm circuiting where run concealed and where code acceptable.
    2. To prevent transmittal of vibration to conduit, connections to any vibration producing equipment (i.e. transformers, motors, etc.) shall be terminated by 18 inches of flexible metal conduit. Where flexible connections are exposed to grease and oil, liquid-tight flexible metal conduit shall be used.
    3. In general, no splices or joints shall be permitted in either feeders or branches except at outlets or accessible junction boxes. Splices in wire #8 AWG and smaller shall be pigtail type, made mechanically tight. All conduit systems shall be complete.
    4. Raceway, boxes, etc., run on walls in wet areas which are subject to being washed down, shall be mounted on the walls with 1/4" stand-offs. All boxes shall be cast type.
V. Route wire and cable as required to meet the Project Conditions. Install cable in accordance with the NECA "Standard of Installation." Use solid conductor for feeders and branch circuits 10 AWG and smaller. Use stranded conductors for control circuits. Use conductor not smaller than 12 AWG for power and lighting circuits. Use conductor not smaller than 16 AWG for control circuits. Use 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 75 feet (25 m). Use 10 AWG conductors for 20 ampere, 277 volt branch circuits longer than 200 feet (160 m). Pull all conductors into raceway at same time. Use suitable wire pulling lubricant for building wire 4 AWG and larger. Protect exposed cable from damage.
W. Support cables above accessible ceiling, using spring metal clips or metal cable ties to support cables from structure or ceiling suspension system, cables that are not part of the ceiling system cannot be supported from ceiling supports. Do not rest cable on ceiling panels. Use suitable cable fittings and connectors. Neatly train and lace wiring inside boxes, equipment, and panelboards.
X. Clean conductor surfaces before installing lugs and connectors. Make splices, taps, and terminations to carry full ampacities of conductors with no perceptible temperature rise. Use suitable reducing connectors or mechanical connector adapters for connecting aluminum conductors to copper conductors. Use split bolt connectors for copper conductor splices and taps, 6 AWG and larger. Tape un-insulated conductors and connector with electrical tape to 150 percent of insulation rating of conductor. Use solderless pressure connectors with insulating covers for copper conductor splices and taps, 8 AWG and smaller. Use insulated spring wire connectors with plastic caps for copper conductor splices and taps, 10 AWG and smaller. Identify and color code wire and cable. Identify each conductor with its circuit number or other designation indicated.

2.6 BOXES

A. Outlet Boxes:
   1. Each outlet in wiring or raceway systems shall be provided with an outlet box to suit conditions encountered. Boxes installed in normally wet locations shall be of cast-metal type having hubs. Concealed boxes shall be cadmium plated or zinc coated sheet metal type. Old work boxes with Madison clamps are not allowed in new construction.
   2. Each box shall have sufficient volume to accommodate number of conductors in accordance with requirements of NFPA 70. Boxes shall not be less than 1-1/2" deep unless shallower boxes are required by structural conditions and are specifically approved by Architect. Ceiling and bracket outlet boxes shall not be less than 4" octagonal except that smaller boxes may be used where required by particular fixture to be installed. Flush or recessed fixtures shall be provided with separate junction boxes when required by fixture terminal temperature requirements. Switch and receptacle boxes shall be 4" square or of comparable volume. Luminaire and equipment supporting boxes shall be rated for weight of equipment supported; include 1/2 inch (13 mm) male fixture studs where required.
   3. Acceptable Manufacturers:
      a. Appleton
      b. Crouse Hinds
      c. Steel City
      d. RACO
B. Pull and Junction Boxes: Where necessary to terminate, tap off, or redirect multiple raceway runs or to facilitate conductor installation, furnish and install appropriately designed boxes. Boxes shall be fabricated from code gauge steel assembled with corrosion resistant machine screws. Box size shall be as required by Code. Where intermediate cable supports are necessary because of box dimensions, provide insulated removable core brackets to support conductors. Junction boxes are to be equipped with barriers to separate circuits. Where splices are to be made, boxes shall be large enough to provide ample work space. All conductors in boxes are to be clearly tagged to indicate characteristics. Boxes shall be supported independently of raceways. Junction boxes in moist or wet areas shall be galvanized type. Boxes larger than 4-inches square shall have hinged covers. Boxes larger than 12-inches in one dimension will be allowed to have screw fastened covers, if a hinged cover would not be capable of being opened a full 90 degrees due to installation location.
C. Fiberglass Handholes shall be die molded glass fiber. Cable Entrance shall be pre-cut 6-inch x 6-inch (150 mm x 150 mm) cable entrance at center bottom of each side. Cover shall be glass fiber weatherproof cover with nonskid finish.
D. Install boxes in accordance with NECA "Standard of Installation." Install in locations as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections and compliance with regulatory requirements.
E. Set wall mounted boxes at elevations to accommodate mounting heights indicated or specified in section for outlet device. Electrical boxes are shown on drawings in approximate locations unless dimensioned. Adjust box location up to 10-feet (3m) if required to accommodate intended purpose. Orient boxes to accommodate wiring devices. Maintain headroom and present neat mechanical appearance.
F. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches (150 mm) from ceiling access panel or from removable recessed luminaire. Install boxes to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Division 7.
G. Coordinate mounting heights and locations of outlets mounted above counters, benches, and backsplashes. Locate outlet boxes to allow luminaires positioned as shown on reflected ceiling plan. Align adjacent wall mounted outlet boxes for switches, thermostats, and similar devices.
H. Use flush mounting outlet box in finished areas. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening. Do not install flush mounting box back-to-back in walls; provide minimum 6-inches (150 mm) separation.

Provide minimum 24 inches (600 mm) separation in acoustic rated walls. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness. Use stamped steel bridges to fasten flush mounting outlet box between studs. Install flush mounting box without damaging wall insulation or reducing its effectiveness.

I. Use adjustable steel channel fasteners for hung ceiling outlet box. Do not fasten boxes to ceiling support wires. Support boxes independently of conduit. Use gang box where more than one device is mounted together. Do not use sectional box. Use gang box with plaster ring for single device outlets. Use cast outlet box in exterior locations exposed to the weather and wet locations. Use cast floor boxes for installations in slab on grade; formed steel boxes are acceptable for other installations. Set floor boxes level.

J. Large Pull Boxes: Use hinged enclosure in interior dry locations, surface-mounted cast metal box in other locations.

K. Adjust floor box flush with finish flooring material. Adjust flush-mounting outlets to make front flush with finished wall material. Install knockout closures in unused box openings.

2.7 WIRING DEVICES

A. Provide wiring device type plates for all wall-mounted devices. All wall plates shall be either brushed aluminum or smooth high impact nylon for all public areas as directed by the Architect. Provide galvanized steel for all Utility, Electric and Mechanical Rooms. Colors of wall plates as directed by the Architect.

B. Wiring devices standard for the project (i.e., with no specific type indicated) shall conform to the following:
   1. Visible part colors of wiring devices shall be as directed by the Architect for all public areas. Provide Ivory colored devices for all Utility, Electrical and Mechanical rooms.
   2. Exclude compact type devices.

C. Wiring device switches shall be toggle type, A.C. quiet design, specification grade, 20 amps on 120 volt circuits. Switches shall be mounted 48-inches to center line above finished floor unless noted otherwise. Equivalent 277volt, 20 amp switches shall be used where required.

D. Standard duplex convenience receptacles shall be 125volt, 20 amps, three wire (two circuit wires plus ground), “U-slot” ground NEMA configuration 5-20R, specification grade. Receptacles shall be mounted 18” to center line above finished floor unless noted otherwise. Where indicated on plans provide receptacles with ground fault current interrupters, UL Class A; 20A, 125V.

E. Non-standard convenience receptacles and special purpose power supply receptacles shall be as listed on plans.

F. Use “Hospital-Grade” receptacles in areas of patient care in nurses’ office areas of schools. Preschool and Kindergarten rooms & other area indicated on the plans shall be tamper resistant type receptacles. When connected to an Essential Electrical System, all “Hospital Grade” receptacles shall be illuminated.

G. Weatherproof Receptacle Enclosures shall be NEMA 3R rated for rain-tight while-in-use, gasketed, impact resistant thermoplastic with hinged gasketed device cover.

H. Provide extension rings to bring outlet boxes flush with finished surface. Clean debris from outlet boxes. Install devices plumb and level. Install receptacles with grounding pole on top. Connect wiring device grounding terminal to branch circuit equipment grounding conductor. Use jumbo size plates for outlets installed in masonry walls. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface mounted outlets.

I. Install wall switch 48 inches above finished floor to top of handle. On position, shall be up. Install convenience receptacles 18-inches above finished floor. Install convenience receptacle 6-inches above backsplash of counter. Install dimmer switches 48 inches above finished floor to top.

J. Verify that each receptacle device is energized. Test each receptacle device for proper polarity. Test each GFCI receptacle device for proper operation.

2.8 CABINETS & ENCLOSURES

A. Cabinets shall be as follows: Boxes: Galvanized steel. Box Size: As required and/or indicated on plans. Backboard: Provide 3/4-inch thick plywood backboard for mounting terminal blocks. Paint matte white. Fronts: Steel, flush type with concealed trim clamps, door with concealed hinge, and flush lock keyed to match branch circuit panelboard. Finish with gray baked enamel. Knockouts: As required and/or indicated on plans. Provide metal barriers to form separate compartments wiring of different systems and voltages. Provide accessory feet for free-standing equipment.
B. Hinged Cover Enclosures shall be as follows: Construction: NEMA 250, Type 1, 3R, or 4 steel enclosure, as required and/or indicated on plans. Covers: Continuous hinge, held closed by flush latch operable by key or hasp and staple for padlock. Provide interior plywood panel for mounting terminal blocks and electrical components; finish with white enamel. Enclosure Finish: Manufacturer's standard enamel.
C. Install in accordance with NECA "Standard of Installation." Install enclosures and boxes plumb. Anchor securely to wall and structural supports at each corner under the provisions of Division 16190. Install cabinet fronts plumb.
D. Clean electrical parts to remove conductive and harmful materials. Remove dirt and debris from enclosure. Clean finishes and touch up damage.
E. ICS 4 - Terminal blocks for industrial control equipment and systems. Power Terminals: Unit construction type with closed back and tubular pressure screw connectors, rated 600 volts. Signal and Control Terminals: Modular construction type, suitable for channel mounting, with tubular pressure screw connectors, rated 300 volts. Provide ground bus terminal block, with each connector bonded to enclosure.
F. Provide grounding provisions for all cabinets/enclosures and bond to grounding system as required per Code.

2.9 GROUNDING & BONDING

A. Ground all systems and equipment in accordance with best industry practice, the requirements of NFPA 70 and the following:
   1. The ground bus of the main switchboard shall be connected to the main grounding electrode specified below by means of insulated conductors run in conduit.
   2. The main grounding electrode shall be an accessible point on the nearest metallic main water service pipe. Connection shall be made on the street side of the main valve utilizing a ground clamp of a type specifically manufactured for the purpose. Bonding jumpers shall be provided around the water meters and around insulating joints and/or sections.
   3. Establish a ground bonding connection from the effectively grounded structural building steel to each cold-water main entering the building. Each bonding connection shall consist of insulated conductors run in conduit.
   4. The water pipe ground shall be supplemented by an additional electrode consisting of three (3) buried 3/4" diameter by 10’-0” long copperweld ground rods spaced 10’-0” apart, and provided in sufficient quantity so as to have measured resistance to ground of not more than 10 ohms. Provide independent certification confirming this. Establish a bonding connection from the electrode consisting of green insulated conductors run in conduit and sized as indicated hereinafter for main and supply side of service bonding jumpers.
   5. Provide grounding bonds between all metallic conduits of the light and power system which enter and leave cable chambers or other non-metallic cable pulling and splicing boxes. Accomplish this by equipping the conduits with bushings of the grounding type individually cross connected.
   6. Bond metallic conduits containing grounding electrode conductors and main bonding conductors to the ground bus service enclosure and/or grounding electrode at both ends of each run utilizing grounding bushings and jumpers.

7. Provide grounding bonds for all metallic conduits of the light and power system which terminate in pits below equipment for which a ground bus is specified. Accomplish this by equipping the conduits with bushings of the grounding type connected individually to the ground bus.
8. Provide supplementary ground bonding where metallic conduits terminate at metal clad equipment (or at the metal pull box of equipment) for which a ground bus is specified. Accomplish this be equipping the conduits with bushings of the grounding type connected individually by means of jumpers to the ground bus. Exclude the jumpers where directed. This exclusion will be required where an isolated ground for electronic equipment is to be maintained.
9. Each grounding type bushing shall have the maximum ground wire accommodation available in standard manufacture for the particular conduit size. Connection to bushing shall be with wire of this maximum size.
10. Bonding conductors on the load size of the service device and equipment grounding conductors shall be sized in relation to the fuses or trip size of the overcurrent device supplying the circuit.
11. The central equipment for the fire protective alarm system and telephone system shall have its grounding terminal connected to the grounding electrode by means of a No. 6 green coded insulated conductor, run in 3/4" conduit. Utilize a ground clamp of a type specifically manufactured for the purpose.
12. Install rod electrodes per this Division & in compliance with Code. Install additional rod electrodes as required to achieve specified resistance to ground. Install 4/0 AWG bare copper wire in foundation footing as required. Provide isolated grounding conductor for circuits supplying personal computers as indicated on the plans. Equipment Grounding Conductor: Provide separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing. Provide a 3/4” raceway with #6 AWG ground wire from main telephone terminal board to the service ground.
13. Perform inspections and tests listed in NETA ATS, Section 7.13. Document test results in Record Documents.
14. Swimming Pools, fountains & similar installations: Refer to NEC 680 for requirements for grounding and bonding. Provide all grounding and bonding per NEC 680 and 250.
15. Grounding means shall never exceed 10 ohms when located outdoors, or 5 ohms when located indoors.
16. An acceptable means of grounding is to provide an underground 2” thick, concrete-encased electrode of either ½” diameter, electrically conductive reinforcing bar of #4/0 bare copper conductor (minimum of 20-feet in length) per NEC 250.52(A)(3).

2.10 <u>EQUIPMENT WIRING SYSTEM</u>

A. Cords & Caps: Manufacturers: Hubbel, Pass & Seymour or Arrow Hart. Attachment Plug Construction: Conform to NEMA WD 1. Configuration: NEMA WD 6; match receptacle configuration at outlet provided for equipment. Cord Construction: ANSI/NFPA 70, Type SO multiconductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit overcurrent protection.
B. Motor Control Equipment: Each motor shall have a starter furnished under this Section where it is not being supplied by other sections. Wire and installed under this Section, unless otherwise noted herein or on the drawings.
   1. Connect the motor starting devices for all motors, except where otherwise specifically provided for under other sections, furnish all necessary connections between controllers and motors, in conduit and leave motors ready to start. Change connections, if necessary, to secure proper rotation of motors.
   2. Perform all the necessary wiring in connection with the motor starting and remote control equipment, where so designated, furnished under other sections. Where control or starting equipment is sent to the job as individual units, they shall be installed, wired up complete and left ready for operation under work of this section.

3. Wiring to motor shall be in rigid conduit with watertight flexible conduit from wall to motor only.

C. Included in the general requirements for motor control equipment wiring and connections, the following specified items shall be performed:
   1. Installation and connection of motor controls which will be furnished under the heating, ventilating and air conditioning section and the plumbing section.

D. Starters by This Contractor: Where starters are not provided under other sections, this Contractor shall furnish starters for motors 1/2 HP and larger and where required by the control sequence for smaller motors and shall be magnetic across the line starters with adjustable overload protection in each phase line, all in NEMA 1 enclosures. Starters shall be solid state or acceptable substitute. Combination starters shall be with fused or non-fusible disconnect as required.
   1. Magnetic starters shall have 120 volt holding circuits, integral transformers, auxiliary contacts as required by the control sequence and integral selector switches with push-to-test pilot lights. One side of each pilot light shall be connected on the load side of the motor starter.
   2. Integral transformers shall have overload protection on the secondary section and, also, the secondary neutral shall be grounded.
   3. Starters shall be as manufactured by Square D Company or General Electric.

E. Temperature control wiring shall be by others as indicated under the heating, ventilating and air conditioning section.

F. Provide a suitable plywood backboard on a wall and/or angle iron or unistrut framework with plywood for all starters. Starters will be installed and wired under this section.

G. All starters shall be located next to the panel feeding same, if panel is in a closet or utility space, unless noted otherwise on the drawings. If panel is located in a finished space (i.e. corridor, gymnasium, etc.) starters shall be located in nearby utility closet or space acceptable to the Engineer.

H. Nameplates: Each starter shall have a 1.0" x 2.5" hot stamped nameplate identifying the unit and panel it is fed from. The lettering shall be white 1/2" high in a black background.

I. Connections to systems: Make electrical connections in accordance with equipment manufacturer's instructions. Make conduit connections to equipment using flexible conduit. Use liquid-tight flexible conduit with watertight connectors in damp or wet locations. Make wiring connections using wire and cable with insulation suitable for temperatures encountered in heat producing equipment. Provide receptacle outlet where connection with attachment plug is indicated. Provide cord and cap where field-supplied attachment plug is indicated. Provide suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes. Install disconnect switches, controllers, control stations, and control devices as indicated. Modify equipment control wiring with terminal block jumpers as indicated. Provide interconnecting conduit and wiring between devices and equipment where indicated

2.11 SUPPORTING DEVICES

A. Materials and Finishes: Provide adequate corrosion resistance. Provide materials, sizes, and types of anchors, fasteners and supports to carry the loads of equipment and conduit. Consider weight of wire in conduit when selecting products. Steel channel shall be galvanized.

B. Anchors and Fasteners:
   1. Concrete Structural Elements: Use precast insert system, expansion anchors.
   2. Steel Structural Elements: Use beam clamps, or welded fasteners.
   3. Concrete Surfaces: Use self-drilling anchors or expansion anchors.
   4. Hollow Masonry, Plaster, and Gypsum Board Partitions: Use toggle bolts or hollow wall fasteners.
   5. Solid Masonry Walls: Use expansion anchors or preset inserts.
   6. Sheet Metal: Use sheet metal screws.
   7. Wood Elements: Use wood screws.

C. Installation: Install products in accordance with manufacturer's instructions. Provide anchors, fasteners, and supports in accordance with NECA "Standard of Installation". Do not fasten supports to pipes, ducts, mechanical equipment, and conduit. Do not use spring steel clips and clamps. Do not

use powder-actuated anchors. Do no drill or cut structural members. Fabricate supports from structural steel or steel channel. Rigidly weld members or use hexagon head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts. Install surface-mounted cabinets and panelboards with minimum of four anchors. In wet and damp locations use steel channel supports to stand cabinets and panelboards one inch off wall. Use sheet metal channel to bridge studs above and below cabinets and panelboards recessed in hollow partitions.

2.12 ELECTRICAL IDENTIFICATION

A. Nameplates: Engraved three-layer laminated plastic, black letters on white background. Locations: Each electrical distribution and control equipment enclosure, communication cabinets. Letter Size: Use 1/8 inch letters for identifying individual equipment and loads. Use 1/4 inch letters for identifying grouped equipment and loads.
B. Labels: Embossed adhesive tape, with 3/16 inch white letters on black background. Use for identification of individual power receptacle faceplates indicating panel & circuit number the outlet is fed from and control device stations. In addition to nameplates as described above, use labels on all panelboards, disconnect switches and enclosed circuit breakers to identify where the equipment is fed from, voltage & phase.
C. Wire markers: Tape, or tubing type wire markers. Locations: Each conductor at panelboard gutters, pull boxes, outlet and junction boxes, and each load connection. Power and Lighting Circuits shall be marked with panel and branch circuit or feeder number as indicated on drawings. Control Circuits shall be marked with control wire number indicated on schematic and interconnection diagrams on drawings
D. Conduit markers: Corrosion and abrasion resistant. Location: Furnish markers for each conduit longer than 6 feet (2 m). Spacing: 20 foot on center. Indicate voltage and phase.
E. All panelboards shall be provided with a typed (hand written is not allowed) circuit directory indicating the load fed by each circuit breaker and it's location in the building.

2.13 ENCLOSED SWITCHES

A. Fusible Switch Assemblies shall be provided in accordance with the following. Description: NEMA KS 1, Type GD with externally operable handle interlocked to prevent opening front cover with switch in ON position, enclosed load interrupter knife switch. Handle lockable in OFF position. Fuse clips: Designed to accommodate NEMA FU1, Class R fuses. Provide NEMA 3R where located outdoors, kitchens or other interior wet areas.
B. Non-fusible switch assemblies shall be provided in accordance with following. Description: NEMA KS 1, Type GD with externally operable handle interlocked to prevent opening front cover with switch in ON position enclosed load interrupter knife switch. Handle lockable in OFF position. Provide NEMA 3R where located outdoors, kitchens or other interior wet areas.
C. Install in accordance with NECA "Standard of Installation". Install fuses in fusible disconnect switches. Apply adhesive tag on inside door of each fused switch indicating NEMA fuse class and size installed.

2.14 PANELBOARDS

A. Description: NEMA PB1, circuit breaker type, lighting and appliance branch circuit panelboard.
B. Panelboard Bussing: Bus bars shall be copper. Provide copper ground bus bar in all panelboards.
C. Minimum Integrated Short Circuit Rating: 10,000 amperes RMS symmetrical for 240 volt panelboards; 65,000 amperes RMS symmetrical for 480 volt panelboards, or as indicated.
D. Molded Case Circuit Breakers: NEMA AB 1, bolt-on type thermal magnetic trip circuit breakers, with common trip handle for all poles, listed as Type SWD for lighting circuits, Type HACR for air

conditioning equipment circuits, Class A ground fault interrupter circuit breakers where scheduled. Do not use tandem circuit breakers.

E. Enclosure: NEMA PB 1, Type 1.
F. Cabinet Box: 6 inches deep, 20 inches wide for 240 volt and less panelboards, 20 inches wide for 480 volt panelboards.
G. Cabinet Front: Flush or Surface cabinet front as scheduled with concealed trim clamps, concealed hinge, metal directory frame, and flush lock all keyed alike. Finish in manufacturer's standard ANSI 49 enamel.

2.15 ENCLOSED CIRCUIT BREAKERS

A. Enclosed Molded Case Circuit Breaker: Comply with NEMA AB 1. Include provisions for padlocking. Provide insulated grounding lug in each enclosure. Provide Products suitable for use as service entrance equipment where so applied. Fabricate enclosure from steel.
B. Install enclosed circuit breakers where indicated, in accordance with manufacturer's instructions. Install enclosed circuit breakers plumb. Provide supports in accordance with these specifications. Height: 5 ft (1.6 M) to operating handle. Provide engraved plastic nameplates.
C. Inspect each circuit breaker visually. Perform several mechanical ON-OFF operations on each circuit breaker. Verify circuit continuity on each pole in closed position. Determine that circuit breaker will trip on overcurrent condition, with tripping time to NEMA AB 1 requirements. Include description of testing and results in test report.

2.16 FUSES

A. All fuses shall be rated for proper voltage in which they are applied. Interrupting ratings shall be greater than the short circuit current available at the terminals of the switch.
B. Fuse types:
   1. Fuses for branch circuits shall be time delay class J.
   2. Fuses for equipment other than motor loads shall be general fast acting RK-5 or Class J.
   3. Control power transformers for motor controller circuits shall be as recommended by motor starter and motor control center manufacturer.
   4. Fuses for motors shall be sized at 250% of the motor FLA.
   5. Fuses for non-motor loads shall be sized at 125% of the rated FLA of equipment served.
   6. Fuses for elevator lifts shall be dual element type and sized in accordance with the elevator manufacturer’s recommendations.
C. Spare Fuses
   1. Provide spare fuses in the amount of 20% (not less than three (3) nor more than nine (9) of all sizes and types).
   2. Spare fuses shall include general purpose fuses, motor fuses, and control fuses used in motor control centers, starters etc.
   3. A complete list and quantity of spare fuses shall be submitted with record drawings for review.

2.17 ENCLOSED MOTOR CONTROLLERS

A. The Electrical Contractor shall review the mechanical drawings and coordinate with the Mechanical Contractor for electrical components of the mechanical equipment and systems such as motors, factory mounted motor starters, factory mounted disconnect switches, variable frequency drives and controls to be provided under Division 15 (by the Mechanical Contractor).
B. The Electrical Contractor shall provide motor starters, variable frequency drives and disconnect switches for equipment shown on the drawings where the Mechanical Contractor is not providing such equipment.

C. The electrical contractor shall provide all power wiring for all HVAC equipment.
D. Manual Motor Controller: NEMA ICS 2, AC general-purpose Class A manually operated, full-voltage controller with thermal overload elements on each phase, red pilot light, NO, NC auxiliary contact, and push button or toggle operator.
E. Fractional Horsepower Manual Controller: NEMA ICS 2, AC general-purpose Class A manually operated, full-voltage controller for fractional horsepower induction motors, with thermal overload elements on each phase, red pilot light, and toggle operator.
F. Motor Starting Switch: NEMA ICS 2, AC general-purpose Class A manually operated, full-voltage controller for fractional horsepower induction motors, without thermal overload elements on each phase, with red pilot light and toggle operator.
G. Enclosures: NEMA ICS 6; Type 1 for indoors and Type 3R for outdoors and wet/damp locations (kitchens, mechanical rooms, pool equipment rooms, etc...).
H. Automatic Magnetic Motor Controllers: NEMA ICS 2, AC general-purpose Class A magnetic controller for induction motors rated in horsepower. Reversing Controllers: Include electrical interlock and integral time delay transition between FORWARD and REVERSE rotation. Two Speed Controllers: Include integral time delay transition between FAST and SLOW speeds. Coil operating voltage: 120volts, 60 Hertz. Overload Relay: NEMA ICS; bimetal or melting alloy. Enclosure: NEMA ICS 6, Type 1 for indoors or Type 3R for outdoors and wet/damp locations (kitchens, mechanical rooms, pool equipment rooms, etc...).
I. Product Options and Features as follows. Auxiliary Contacts: NEMA ICS 2, 2 each normally open and closed contacts in addition to seal-in contact. Cover Mounted Pilot Devices: NEMA ICS 2, standard duty type. Pilot Device Contacts: NEMA ICS 2, Form Z, rated A150. Pushbuttons: Recessed type. Indicating Lights: LED type. Selector Switches: Rotary type. Relays: NEMA ICS 2. Control Power Transformers: 120 volt secondary, in each motor starter. Provide fused primary and secondary, and bond un-fused leg of secondary to enclosure.
J. Installation Requirements: Install enclosed controllers where indicated, in accordance with manufacturer's instructions. Install enclosed controllers plumb. Provide supports in accordance with these specifications. Height: 5 feet to operating handle. Install fuses in fusible switches. Select and install overload heater elements in motor controllers to match installed motor characteristics. Provide engraved plastic nameplates under these specifications. Provide neatly typed label inside each motor controller door identifying motor served, nameplate horsepower, full load amperes, code letter, service factor, and voltage/phase rating.

2.18 <u>ENCLOSED CONTACTORS</u>

A. General purpose contactors: NEMA ICS 2, AC general purpose magnetic contactor. Coil Voltage as indicated. Poles as indicated. Size as indicated. Enclosure per ANSI/NEMA ICS 6, Type as scheduled.
B. Lighting contactors: NEMA ICS 2, magnetic lighting contactor. Coil Voltage as indicated. Poles as indicated. Size as indicated. Contact Rating shall match branch circuit overcurrent protection, considering de-rating for continuous loads.
C. Accessories: Provide Pushbuttons and Selector Switches per NEMA ICS 2, heavy duty type. Provide indicating lights per NEMA ICS 2, push-to-test type. Provide auxiliary contacts per NEMA ICS 2, Class A300 or A600 as required per equipment served.
A.

2.19 <u>FIRE ALARM SYSTEM</u>

A. GENERAL
   1. The contractor shall submit complete documentation for the Fire Alarm/Life Safety System Data Sheets for all items to ensure compliance with these specifications. Copies of this information

shall be submitted as required to the Engineer prior to award of this work and shall be subject to the approval of the Engineer.

2. The contractor shall submit, as part of the complete bid documentation package, certification that the engineered system distributor is a fully authorized factory trained and certified distributor of the system detailed within this specification.
3. All equipment and material shall be new and unused, and listed by Underwriter's Laboratories for the specific intended purpose. All control panel components, field peripherals and interactive computer peripherals shall be designed for continuous duty operation without degradation of function or performance.
4. All equipment covered by this specification or noted on installation drawings shall be the best equipment suited for the application and shall be provided by a single manufacturer.
5. Provide all equipment and accessories and compatible devices for a complete and fully functioning fire alarm system. The fire alarm system shall be coordinated with and inspected by the local fire department, and any inconsistency mentioned during any inspection shall be corrected by contractor at no additional cost to owner.
6. The control panel shall contain a microprocessor with 10/100 ethernet media access controller (MAC). The system shall be designed specifically for fire detection, and notification applications.
7. The installing contractor shall coordinate master-box, radio-box, and/or dialer requirements with local fire department.

B. FIRE ALARM LIFE SAFETY SYSTEM SEQUENCE OF OPERATION

1. The operation of a manual station or activation of any automatic alarm initiating device (system smoke, heat, waterflow) shall automatically:
   a. Initiate the transmission of the alarm to the Municipal Fire Station or approved Central Station via the Local Energy or Radio Master-box.
   b. Sound a code 3 temporal evacuation signal over all audio circuits, except in designated areas of assembly. In designated areas of assembly (sound a pre-recorded voice message) and/or conduct manual voice evacuation from the system microphone(s) located at the FACP or remote location(s) in accordance with the local requirements.
   c. Flash all visual signals throughout the building in a synchronized manner.
   d. Flash an alarm LED and sound an audible signal at the FACP. Upon acknowledgement, the alarm LED shall light steadily and the audible shall silence. Subsequent alarms shall re-initiate this sequence.
   e. Upon alarm initiation by an elevator lobby smoke detector or other designated recall device, recall all elevators that serve the floor of initialization to the main egress level. If the alarm initiates on the main egress level, return the elevator to the alternate floor as directed by the local authority having jurisdiction.
   f. Visually indicate the alarm initiating device type and location via the LCD display located at the FACP (and at any remote annunciators) and (illuminate the appropriate alarm zone LED at the remote annunciator).
   g. Automatically shut down or control HVAC equipment to initiate smoke control functions as required. Manual override controls and programmable relay interface shall serve as an interface to the Building Automation System.
   h. Operate prioritized outputs to release all magnetically held smoke doors and magnetically locked doors throughout the building.
   i. Activate the exterior weatherproof beacon.

C. WIRING

1. Provide in accordance with manufacturer’s instructions all wiring, conduit and outlet boxes required for the installation of complete system as described herein and as shown on the drawings. Wiring shall be Class A.
2. Installation and fire alarm system wiring shall be installed in metal raceway. An equipment bonding conductor shall be provided in all flexible metallic raceways.
3. Color code for fire alarm systems shall be per the State Fire Alarm code.

4. DC supply to the main fire alarm panel shall be white and black. Fire alarm primary power source shall be on dedicated branch circuit. Circuit breaker locks shall be used. If a separate feed is required for the battery charger it shall be black and white unless the main fire alarm panel required only AC feed. In this case the conductors to the battery charger shall be red and white and shall be on a circuit breaker of fits own.
5. Conductors shall be minimum #14-gauge solid copper type THHN/THWN. Conductor's size shall be increased as required to maintain voltage drop to a maximum of 3%. All AC and DC portions of the system shall be installed in separate raceway. Addressable loop wiring may be #16 providing manufacturer's recommended distance is observed. Systems requiring shielded wiring for addressable loops shall not be acceptable.
6. Red painted terminal cabinets with hinged local covers shall be provided at all junction points. All conductor splices shall be made on screw type terminal blocks, wire nuts shall not be used. All terminals within terminal cabinet shall be properly labeled. Provide terminal cabinet at each building cable entrance and at other locations as required.
7. All fire alarm initiating zone and signal wiring shall be wired Class A.
8. Final connections between the equipment and the wiring system shall be made under the direct supervision of a representative of the manufacturer.
9. Upon completion of the installation of fire alarm equipment, the electrical contractor shall provide to the engineer a signed statement substantially in the form as follows:
   a. The undersigned having been engaged as the electrical contractor on this project confirms the fire alarm equipment was installed in accordance with the specifications and in accordance with wiring diagrams, instructions, and directions provided to us by the manufacturer.

D. GUARANTEE AND FINAL TEST
1. All testing (pre-testing, final testing, quarterly testing and program change testing) to be coordinated with the owner and scheduled in advance so that owners and personnel can be present during testing. Contractor to certify that all tests comply with the "State Fire Code", latest edition.
2. Before this installation shall be considered complete and acceptable to the awarding authorities, a complete test on the system shall be performed as follows:
   a. A pre-test will be held by the electrical contractor with the manufacturer's authorized representative present. After certification of a complete pre-test, the installing contractor shall inform the authority having jurisdiction of the outcome of the test and will re-inspect in the presence of the authority having jurisdiction and the manufacturer's authorized representative.
   b. Final test: The electrical contractor in the presence of authorized representative of the manufacturer and the fire department shall operate every manual station, smoke detector, and thermodetector. Each station/detector circuit and horn circuit shall be opened in at least two locations to check for the presence of correct supervisory circuitry. When this testing ahs been completed to the satisfaction of both the electrical contractor's job foreman and the representative of the manufacturer, a letter from the contractor cosigned by the manufacturer attesting t the satisfactory completion of said testing, shall be forwarded to the owner.
3. The electrical contractor shall guarantee all equipment and wiring to be free from inherent mechanical and electrical defects for a period of one year from the date of final acceptance.
4. The contractor shall provide the Owner with a formal written equipment guarantee upon completion of the installation and testing of the system. The guarantee period shall begin on the day of acceptance of the system by the Owner and shall provide for a period of <u>one</u> year. This guarantee shall be indicated in the manufacturer's submission prior to approval. This guarantee shall be as normal policy by the equipment manufacturer.
5. The manufacturer shall maintain a full-time service and parts facility, with seven days per week, 24 hour per day service available.
6. All service technicians shall be licensed by the State Fire Code covering service and maintenance of systems.

7. Include as part of the contract, the four quarterly tests following the final acceptance test. Provide quarterly testing in conformance with the State Fire Code latest addition.

E. ALARM PROGRAM
1. Electrical Contractor shall provide the owner the alarm program on a “jump drive”.

F. CONSTRUCTION SUPPORT AND ADMINISTRATION
1. The Electrical Contractor shall provide support and coordinate fire alarm shutdowns and other related fire alarm activities throughout the duration of the project as necessary as well as required in the Division 1 specifications.

PART 3 – EXECUTION

3.1 BASIC REQUIREMENTS

A. Adhere to best industry practice and the following:
1. All work shall be concealed.
2. Route circuitry runs embedded in concrete to coordinate with structural requirements.
3. Equip each raceway intended for the future installation of wire or cable with a nylon pulling cord 3/16” in diameter and clearly identify both ends of the raceway.
4. Provide all outlet boxes, junction boxes, and pull boxes for proper wire pulling and device installation. Include those omitted from the drawings due to symbolic methods of notation.
5. Utilize lugs of the limited type to make connections at both ends of cables installed on the line side of main service overcurrent and switching devices. Provide cable limiters for each end of each service entrance cable.
6. Beyond the termination of raceways, fireproof the following:
   a. All wires and cables within pad-mounted transformer enclosure.
   b. All service feeder cables ahead of main service overcurrent protection devices, and elsewhere where not in raceways.
7. Fireproofing of wires and cables shall be by means of a half-lapped layer of arcproof or by means of sleeving of a type specifically manufactured for the purpose. Ends of tape or sleeving shall be severed with twine. Fireproofing shall be extended up into raceways. After conductors have been finally shaped into their permanent configuration, fireproofing tape or sleeving shall be coated with silicate of soda (water glass). Fireproofing shall be applied in an overall manner to raceway groupings of conductors.
8. Provide all sleeves through fireproof and waterproof slabs, walls, etc., required for electric work.
9. Provide waterproof sealing for the sleeves through waterproof slabs, walls, etc.
10. Provide fireproof sealing for the sleeves through fireproof walls, slabs, etc.
11. Provide fireproof sealing for the openings in fireproof walls, slabs, etc., resulting from removal of existing electrical sleeves, conduits, poke-thru’s etc.
12. No splicing of wires will be permitted in the Fire Alarm System.
13. Bundle wiring passing through pull boxes and panelboards in a neat and orderly manner with plastic cable ties. Cable ties shall be by Ty-Raps as manufactured by Thomas & Betts, Holub Industries Inc., Quick Wrap, Bundy Unirap, or equal.
14. Turn branch circuits and auxiliary system wiring out of wiring gutters at 90 degrees to circuit breakers and terminal lugs.

3.2 TESTING REQUIREMENTS & INSTRUCTIONS

A. Where any repairs, modifications, adjustments, tests or checks are to be made, the Contractor shall contact the Engineer to determine if the work should be performed by or with the Manufacturer’s Representative.

B. Tests are to:
1. Provide initial equipment/system acceptance.

2. Provide recorded data for future routine maintenance and trouble-shooting.
3. Provide assurance that each system component is installed satisfactorily and can be expected to perform, and continue to perform its specified function with reasonable reliability throughout the life of the facility.

C. At any stage of construction and when observed, any electrical equipment or system determined to be damaged, or faulty, is to be reported to the Engineer. Corrective action by the Contractor requires prior Engineer approval, retesting, and inspection.

D. When the electrical tests and inspections specified or required within Division 16 are completed and results reported, reviewed, and approved by the Engineer, the Contractor may consider that portion of the electrical equipment system or installation electrically complete. The Contractor will then affix appropriate, approved, and dated completion or calibration labels to the tested equipment and notify the Engineer of electrical completion. If the Engineer finds completed work unacceptable, he will notify the Contractor in writing of the unfinished or deficient work, with the reason for his rejection, to be corrected by the Contractor. The Contractor will notify the Engineer in writing when exceptions have been corrected. The Contractor will prepare a "Notification or Substantial Electrical Completion" for approval by the Engineer following Engineer's acceptance of electrical completion. If later in-service operation or further testing identified problems attributable to the Contractor, these will be corrected by the Contractor, at no additional cost to the Authority.

E. Grounding Systems:
1. Test main building loops and major equipment grounds to remote earth, directly referenced to an extremely low resistance (approximately 1 ohm) reference ground benchmark. Perform a visual inspection of the systems, raceway and equipment grounds to determine the adequacy and integrity of the grounding. Ground testing results shall be recorded, witnesses, and submitted to the Engineer.
2. Perform ground tests using a low resistance, null-balance type ground testing ohmmeter, with test lead resistance compensated for. Use the type of test instrument which compensates for potential and current rod resistances.
3. Test each ground rod and measure ground resistance. If resistance is not 10 ohms or less, drive additional rods to obtain a resistance of 10 ohms or less. Submit tabulation of results to Engineer. Include identification of electrode, date of reading and ground resistance valve in the test reports.
4. Test each building and major equipment grounding system for continuity of connections and for resistance. Ground resistance of conduits, equipment cases, and supporting frames, shall not exceed 5 ohms to ground. Submit all readings to the Engineer.
5. Where ground test results identify the need for additional grounding conductors or rods that are not indicated or specified, design changes will be initiated to obtain the acceptable values. The Contractor is responsible for the proper installation of the grounding indicated and specified.
6. Operating Instructions: Furnish operating instructions to Owner's designated representative with respect to operations, functions and maintenance procedures for equipment and systems installed. Cost of such instruction up to a full five (5) days of Electrical Subcontractor's time shall be included in contract. Cost of providing a Manufacturer's Representative at site for instructional purposes shall also be included.

3.3 BRANCH CIRCUITRY

A. For all lighting and appliance branch circuitry, raceway sizes shall conform to industry standard maximum permissible occupancy requirements except where these are exceeded by other requirements specified elsewhere.

B. Circuits shall be balanced on phases at their supply as evenly as possible.

C. Feeder connections shall be in the phase rotation which establishes proper operation for all equipment supplied.

D. Reduced size conductors indicated for any feeders shall be taken as their grounding conductors.

E. Feeders consisting of multiple cables and raceways shall be arranged such that each raceway of the feeder contains one (1) cable for each leg and one (1) neutral cable, if any.
F. For circuitry indicated as being protected at 20 Amps or less, abide by the following:
   1. All 20 amp, 120/208 volt, 3-phase, 4-wire combined branch circuit homeruns shall be provided with a #8 AWG neutral conductor.
   2. Minimum conductor size shall be No. 12 AWG cooper.
   3. Conductors operating at 120 volts extending in excess of 100 ft. or at 277 volts extending in excess of 200 ft., or the last outlet or fixture tap shall be No. 10 AWG cooper throughout.
   4. Lighting fixtures and receptacles shall not be connected to the same circuit.
G. Type MC Cable Installation:
   1. Where cable is permitted under the products section, the installation of same shall be done in accordance with code and the following:
      a. Cable shall be supported in accordance with code. Tie wire is not an acceptable means of support. Cable supports such as Caddy WMX-6, MX-3, and clamps such as Caddy 449 shall be used. Where cables are supported by the structure and only need securing in place, then ty-raps will be acceptable. Ty-raps are not acceptable as a means of support. All fittings, hangers, and clamps for support and termination of cables shall be of type specifically designed for use with cable, i.e., romex connectors not acceptable.
      b. Armor of cable shall be removed with rotary cutter device equal to roto-split by Seatek Co.; not with a hacksaw.
      c. Use split “Insuliner” sleeves at terminations.

3.4 <u>REQUIREMENTS GOVERNING ELECTRICAL WORK IN DAMP OR WET LOCATIONS</u>

A. Outlets and outlet size boxes shall be of galvanized cast ferrous metal only.
B. The finish of threaded steel conduit shall be galvanized only.
C. Wires for pulling into raceways for lighting and appliance branch circuitry shall be limited to “THWN”.
D. Wires for pulling into raceways for feeders shall be limited to “THWN”.
E. Plates for toggle switches and receptacles shall have gasketed snap shut covers suitable for wet locations while in use.
F. Final connections of flexible conduit shall be neoprene sheathed.
G. Apply one (1) layer of half looped plastic electric insulating tape over wire nuts used for joining the conductors of wires.
H. Enclosures, junction boxes, pull boxes, cabinets, cabinet trims, wiring troughs and the like, shall be fabricated of galvanized sheet metal, shall conform to the following:
   1. They shall be constructed with continuously welded joints and seams.
   2. Their edges and weld spots shall be factory treated with cold galvanizing compound.
   3. Their connection to circuitry shall be by means of watertight hub connectors with sealing rings.
I. Enclosures for individually mounted switching and overcurrent devices shall be NEMA Class IV weatherproof construction.
J. The covers, doors and plates and trims used in conjunction with all enclosures, pull boxes, outlet boxes, junction boxes, cabinets and the like shall be equipped with gaskets.
K. Panels shall be equipped with doors without exception.
L. The following shall be interpreted as damp or wet locations within building confines:
   1. Spaces where any designations indicating weatherproof (WP) or vapor proof appear on the drawings.
   2. Below waterproofing in slabs applied directly on grade.
   3. Spaces defined as wet or damp locations by Article 100 of the National Electric Code.
   4. Parking garage.

3.5 <u>REQUIREMENTS GOVERNING ELECTRIC WORK IN AIR HANDLING SPACES</u>

A. Within air handling ductwork or plenums (other than spaces within suspended ceilings used for air handling purposes), Area "B" and the media shall comply with requirements for return air plenums.
B. Abide by the requirements specified for electric work in damp locations within building confines.
C. Where circuitry passes through duct walls, include, in accordance with instructions issued in the field, airtight sealing provisions which allow for a relative movement between the circuitry and the duct walls.
D. Exclude the installation of type NM or NMC cable.
E. In spaces within suspended ceilings used for air handling purposes, abide by the requirements specified for normal electric work conditions except:
F. Lighting fixtures recessed into the ceilings shall be certified as being suitable for this purpose.

3.6 UNDERGROUND CONDUIT DUCT BANKS

A. The electrical work required in conjunction with underground conduit banks shall include providing all conduits.
B. Conduits for underground banks shall be:
   1. Trade diameter size as indicated but in no case less than one inch.
   2. Polyvinyl chloride Schedule 40 (approved for encased burial) duct, rigid steel conduit for vertical elbows and straight sections used to penetrate equipment pads, building foundation walls and concrete slabs.
C. All conduits indicated as being incorporated into conduit banks unless specifically noted as rigid steel conduits shall be encased in a concrete envelope which accommodates the indicated configuration of conduits and which encompasses dimensions as follows:
   1. Outside surfaces of conduits to outside surface of envelope where reinforcement of encasement is required – 6" minimum.
   2. Outside surfaces of conduits to outside surface of envelope where no reinforcement of encasement is required – 3" minimum.
   3. Spacing between centerlines of conduits assigned to different categories of use primary feeders, secondary feeders, communications and signaling – 10-1/2" minimum.
   4. Spacing between centerlines of conduits assigned to the same category of use – 7-1/2" minimum.
D. Reinforcement of the concrete encasement for conduit banks where required shall consist of No. 4 longitudinal reinforcing bars located 3" from the outside surface of the envelope and spaced 6" on centers all around. No. 8 wire reinforcing hoops set 8" apart shall be used to tie the longitudinal bars together.
E. Install conduit in such a manner as to provide a minimum cover of 30 inches after final grading except the cover may be reduced to a minimum of 18 inches to:
   1. Tie into existing work.
   2. Pass over other underground utilities.
   3. Pass over underground obstructions.
   4. Assist in the avoidance of low points.
F. Increase the minimum cover where required by field conditions.
G. Lay conduit to avoid low points during run. Pitch at a minimum of 3 inches per 100 feet away from building.
H. Provide reinforcement for the concrete encasement of a conduit bank where:
   1. It passes under or over underground utilities.
   2. It passes under or over underground obstructions.
   3. Its cover is reduced to less than 30 inches.
   4. It runs through foundation walls and other building construction.
I. Concrete encasement reinforcing shall extend in each case 5 feet beyond the points at which the determining conditions terminate.
J. Bends in conduit shall have minimum radii as follows:
   1. For primary feeder 15'-0" except where specifically indicated otherwise or where turning up at termination point.

2. For primary feeder turning up at termination point – 4'-0".

K. Install conduit so that adjacent joints are staggered at least 6 inches from one another.
L. Offsets to accommodate field conditions shall be accomplished with two (2) bends of not more than ten (10) degrees each.
M. Plug both ends of all conduit stubs.
N. Seal the end of each conduit run terminating inside a building utilizing a water and gas-tight sealant manufactured specifically for the purpose.
O. After conduit has been installed with concrete encasement completed, clear each conduit of all obstructions and foreign matter by pulling a flexible mandrel (12" minimum length and a diameter 1/4" less than that of the conduit) and brush through it. In the event that obstructions are encountered in any conduit which will not permit the mandrel to pass, remove and replace the blocked section. Include in the electric work all excavation, backfilling, repair of concrete encasement and restoration of surface at grade involved in the conduit replacement.
P. Provide a nylon cord for the pulling of cable in each conduit in which no cable is to be installed as part of the electric work.
Q. The Electrical Sub-Contractor shall provide all insulated racks as required for proper support of all cables and wires.
R. Provide a continuous nylon warning tape above each full length of duct bank 12 inches below grade.

3.7 LIMITING NOISE PRODUCED BY ELECTRICAL INSTALLATION

A. Perform the following work, in accordance with field instructions issued by the Architect to assure that minimal noise is produced by electrical installations due to equipment furnished as part of the electrical work.
B. Check and tighten the fastenings of sheet metal plates, covers, doors and trims used in the enclosures of electrical equipment.
C. Remove and replace any individual device containing one or more magnetic flux path metallic cores (e.g., discharge lamp ballast, transformer, reactor, dimmer, and solenoid) which is found to have a noise output exceeding that of other identical devices installed at the project.

3.8 SUPPORTS AND FASTENINGS

A. Support work in accordance with best industry standards, and Local Electric Code.
B. Include supporting frames or racks for equipment, intended for vertical surface mounting, which is required in a free standing position.
C. Supporting frames or racks shall be of standard angle, standard channel or specialty support system steel members. They shall be rigidly bolted or welded together and adequately braces to form a substantial structure. Racks shall be of ample size to assure a workmanlike arrangement of all equipment mounted on them.
D. No work intended for exposed installation shall be mounted directly on any building surface. In such locations, flat bar members or spaces shall be used to create a minimum of ¼" air space between the building surfaces and the work. Provide ¾" thick exterior grade plywood painted with two (2) coats of fire-retardant gray paint for mounting of panelboards.
E. Nothing (including outlet, pull and junction boxes and fittings) shall depend on electric conduits, raceways or cables for support.
F. Nothing shall rest on, or depend for support on, suspended ceiling media.
G. Support less than 2" trade size, vertically run, conduits at intervals no greater than 8'. Support such conduits, 2-1/2" trade size or larger, at intervals no greater than they story height, or 15', whichever is smaller.
H. Where they are not embedded in concrete, support less than 1" trade size, horizontally run, conduits at intervals no greater than 7'. Support such conduits, 1" trade size or larger, at intervals no greater than 10'.
I. Support all lighting fixtures directly from structural slab, deck or framing member.

J. Where fixtures and ceilings are such as to require fixture support from ceiling openings frames, include in the electric work the members necessary to tie back the ceiling opening frames to ceiling suspension members or slabs so as to provide actual support for the fixtures noted above.
K. As a minimum procedure, in suspended ceilings support smalls runs of circuitry (e.g., conduit not in excess of 1" trade size) from ceiling suspension members as defined above. Support larger runs of circuitry directly from structural slabs, decks or framing members.
L. Fasten electric work to building structure in accordance with the best industry practice.
M. Floor mounted equipment shall not be held in place solely by its own dead weight. Include floor anchor fastenings in all cases.
N. For items which are shown as being ceiling mounted at locations where fastenings to the building construction element above is not possible, provide suitably auxiliary channel or angle iron bridging tying to building structural elements.
O. As a minimum procedure, where weight applied to the attachment points is 100 lbs. or less, fasten to concrete and solid masonry with bolts and expansion shields.
P. As a minimum procedure, where weight applied to building attachment points exceed 100 lbs., but is 300 lbs. or less, conform to the following:
   1. At field poured concrete slabs, utilize inserts with 20' minimum length slip-through steel rods, set transverse to reinforcing steel.

3.9 SPLICING AND TERMINATING WIRES AND CABLES

A. Maintain all splices and joints in removable cover boxes or cabinets where they may be easily inspected.
B. Locate each completed conductor splice or joint in the outlet box, junction box, or pull box containing it, so that it is accessible from the removal cover side of the box.
C. Join solid conductors No. 8 AWG and smaller by securely twisting them together and soldering, or by using insulated coiled steel spring "wire nut" type connectors. Exclude "wire nuts" employing non-expandable springs. Terminate conductors No. 8 AWG and smaller by means of a neat and fast holding application of the conductors directly to the binding screws or terminals of the equipment or devices to be connected.
D. Join, tap and terminate standard conductors No. 6 AWG and larger by means of solder sleeves, taps, and lugs with applied solder or by means of bolted saddle type or pressure indent type connectors, taps and lugs. Exclude connectors and lugs of the types which apply set screws directly to conductors. Where equipment or devices are equipped with set screw type terminals which are impossible to change, replace the factory supplied set screws with a type having a ball bearing tip. Apply pressure indent type connectors, taps and lugs utilizing tools manufactured specifically for the purpose and having features preventing their release until the full pressure has been exerted on the lug or connector.
E. Except where wire nuts are used, build up insulation over conductor joints to a value, equal both in thickness and dielectric strength, to that of the factory applied conductor insulation. Insulation of conductor taps and joints shall be by means of half-lapped layers of rubber tape, with an outer layer of friction tape; by means of half-lapped layers of approved plastic electric insulating tape; or by a means of split insulating casings manufactured specifically to insulate the particular connector and conductor, and fastened with stainless steel or non-metallic snaps or clips.

3.10 PULLING WIRES INTO CONDUITS AND RACEWAYS

A. Delay pulling wires or cables in until the project has progressed to a point when general construction procedures are not liable to injure wires and cables, and when moisture is excluded from raceways.
B. Utilize nylon snakes or metallic fish tapes with ball type heads to set up for pulling. In raceways 2" trade size and larger, utilize a pulling assembly ahead of wires consisting of a suitable brush followed by a 3-1/2" diameter ball mandrel.

C. Leave sufficient slack on all runs of wire and cable to permit the secure connection of devices and equipment.
D. Include circular wedge-type cable supports for wires and cables at the top of any vertical raceway longer than 20 feet. Also include additional supports spaced at intervals which are no greater than 10'. Supports shall be located in accessible pull boxes. Supports shall be of a non-deteriorating insulating material manufactured specifically for the purpose.
E. Pulling lubricants shall be used. They shall be products manufactured specifically for the purpose.

3.11 REQUIREMENTS FOR THE INSTALLATION OF JUNCTION BOXES, OUTLET BOXES AND PULL BOXES

A. Flush wall-mounted outlet boxes shall not be set back to back but shall be offset at least 12" horizontally regardless of any indication on the drawings.
B. Locate all boxes so that their removable covers are accessible without necessitating the removal of parts of permanent building structure, including piping, ductwork, and other permanent mechanical elements.
C. In conjunction with concealed circuitry, abide by one of the following instructions (as may be applicable to the conditions) in order to assure the aforementioned accessibility. (Not required for circuitry concealed by removable suspended ceiling tiles.)
D. For a small (outlet size) box on circuitry concealed in a partition or wall, locate box or fitting so that its removable cover side, (or the face of any applied raised cover) penetrates through to within 1/8" of the exposed surface of the building materials concealing the circuitry and apply a blank or device plate to suit the functional requirements.
E. For a large box on circuitry concealed in a partition, suspended ceiling, or wall, locate box totally hidden but with its removable cover directly behind an architectural access door or panel (included for the purpose, separate from the electric work) in the building construction which conceals the circuitry.
F. Include all required junction and pull boxes regardless of indications on the drawings (which, due to symbolic methods of notation, may omit to show some of them).
G. Unless noted below or otherwise specifically indicated, include a separate outlet box for each individual wiring device, lighting fixture and signal or communication system outlet component. Outlet boxes supplied attached to lighting fixtures shall not be used as replacements for the boxes specified herein.
H. Utilize an outlet box no smaller than 5" square by 2-1/2" deep.
I. Allow no fixture to be supplied from an outlet box in another room.
J. Multiple local switches indicated at a single location shall be gang-mounted in a single outlet box.
K. Install junction boxes, pull boxes and outlet boxes in conjunction with concealed circuitry.
L. Close up all unused circuitry openings in outlet boxes. Unused openings in cast boxes shall be closed with approved cast metal threaded plugs. Unused openings in sheet metal boxes shall be closed with sheet metal knock-out plugs.
M. Outlet boxes for switches shall be located at the strike side of doors. Indicate door swings are subject to field change. Outlet boxes shall be located on the basis of final door swing arrangements.
N. Boxes and plaster covers for duplex receptacles shall be arranged for vertical mounting of the receptacle.
O. Equip outlet boxes used for devices which are connected to wires of systems supplied by more than one set of voltage characteristics with barriers to separate the different systems.
P. Barriers in junction and pull boxes of outlet size shall be of the same metal as the box.
Q. Barriers in junction and pull boxes which are larger than outlet size shall be of the polyester resin fiberglass of adequate thickness for mechanical strength, but in no case less than 1/4" thick. Each barrier shall be mounted, without fastenings, between angle iron guides so that they may be readily removed.

3.12 LOCATING AND ROUTING OF CIRCUITRY

A. In general, all circuitry shall be run concealed except that it shall be run exposed where the following conditions occur:
   1. Horizontally at the ceiling of permanently unfinished spaces which are not assigned to mechanical or electrical equipment.
   2. Horizontally and vertically in mechanical equipment spaces.
   3. Horizontally and vertically in electric equipment rooms.
B. Concealed circuitry shall be so located that building construction materials can be applied over its thickest elements without being subject to spalling or cracking.
C. All circuitry and raceways shall not be run within slabs. If field conditions requires raceways to be embedded in field-poured structural building construction concrete fill or slab shall conform to the following:
   1. Where turned up or down into a wall or partition they shall, before entering same, be routed parallel for a long enough distance to assure that no relocation of the wall or partition will be necessary to conceal the required bend.
   2. They shall be routed in such a manner as to coordinate with the structural requirements of the building.
   3. They shall be routed in accordance with field instructions issued by the Architect where such instructions differ from specifications set forth herein.
D. Circuitry run exposed shall be routed parallel to building walls and column lines.
E. Circuitry shall be routed so as to prevent electric conductors from being subject to high ambient temperature. Minimum clearances from heated lines or surfaces shall be maintained as follows:
   1. Crossing where uninsulated: 3".
   2. Crossing where insulated: 1"
   3. Running parallel where uninsulated: 36".
   4. Running parallel where insulated: 6".
F. Circuitry shall not be run in elevator shafts, hoistways, and the like. Where outlets for trail cables, pit lights, run be level lights, and the like, are involved, only the "final connection" outlet boxes themselves shall be located within or open into, the confines of the shaft.

3.13 INSTALLING CIRCUITRY

A. The outside surface of circuitry, which is to be embedded in cinder concrete, shall be coated with asphaltum paint.
B. In runs of conduit or raceway including flexible limit the number of bends between cable access points to a total which does not exceed the maximum specified for the particular system. Where no such maximum is specified, limit the number to four (4) right angle bends or the equivalent thereof.
C. In each conduit or raceway assigned for the future pulling in of wires, include a nylon drag cord. In raceways 2" trade size and larger, the cord shall be pulled in utilizing a suitable brush, followed by an 85% diameter ball mandrel ahead of the cord in the pulling assembly. In the event that obstructions are encountered, which will not permit the drag cord to be installed, the blocked section of raceway shall be replaced and any cutting and patching of the structure involved in such replacement shall be included as part of the electric work.
D. Circuitry shall be arranged such that conductors of one feeder or circuitry carrying "going" current are not separated from conductors of the same feeder or circuitry carrying "return" current by any ferrous or other metal. Where not within raceways, all "going" and "return" current conductors of one feeder or circuit shall be laced together so as to minimize induction heating of adjacent metal components.
E. Sleeves used where circuitry is to penetrate waterproof slabs, decks and walls, shall be of a type selected to suit the water condition encountered in the field.

END OF DIVISION