PROJECT MANUAL

SEPTEMBER 26, 2018

ELEVATOR MODERNIZATION

AT THE

RHODE ISLAND STATE HOUSE

SACCOCCIO & ASSOCIATES
ARCHITECTS

1085 PARK AVENUE
CRANSTON, RHODE ISLAND

PROJECT NUMBER 18028

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   Various suspected asbestos containing materials and paint have been tested throughout the elevator machine room included in this project.
   Lead paint has been detected and existing pipe insulation has been determined to contain asbestos within this area. The pipe insulation will remain in place, untouched by this project.

   The Hazardous Materials Inspection Report is included following this page.

END OF DOCUMENT

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HAZARDOUS BUILDING MATERIALS SURVEY REPORT
RHODE ISLAND STATE HOUSE – ELEVATOR RENOVATION PROJECT
82 SMITH STREET, PROVIDENCE, RI

PREPARED FOR:

SACCOCCIO & ASSOCIATES ARCHITECTS
1085 PARK AVENUE
CRANSTON, RI 02910

PREPARED BY:

AXIOM PARTNERS, INC.
ONE PLEASURE ISLAND ROAD, SUITE #2C
WAKEFIELD, MA 01880

AXIOM PROJECT NUMBER 01334.001

OCTOBER 18, 2018

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CERTIFICATION OF RESULTS

This report has been prepared for the exclusive use of AXIOM's Client, Saccoccio & Associates Architects. Photocopying of this document by parties other than those designated by the Client, or use of this document for purposes other than it is intended, is strictly prohibited.

Respectfully submitted this 18th day of October 2018

Prepared by:

Jesse A. DeGeorge
Inspector

Matthew Buccella
Inspector (ACC-0817)

Edward K. Kearney, CIH
Project Manager/Principal

1.0 PURPOSE AND SCOPE OF WORK

Axiom Partners, Inc. (AXIOM) was retained by Saccoccio & Associates Architects to perform a hazardous building materials survey at Rhode Island State House, 82 Smith Street, Providence, RI in advance of the main elevator renovation project (herein referred as "the building").

The purpose of this investigation was to identify Asbestos-Containing Materials (ACMs), Lead-Containing Paint (LCP), Polychlorinated Biphenyls (PCBs), Mercury (Hg), Chlorofluorocarbons (CFCs) and other miscellaneous hazardous materials and wastes for abatement prior to or in conjunction with the main elevator renovation project. In addition, AXIOM collected moisture readings to determine if water/moisture was present in the elevator renovation space.

2.0 SITE DESCRIPTION

The elevator machine room is located within the Rhode Island State house building. The room, with two levels (e.g., upper & lower), is approximately 700 square feet in size. The room consists of concrete ceilings, walls and floors with some walls being constructed of terra cotta. The room has a flat roof with presumed asbestos-containing asphaltic roofing materials over concrete decking.

The interior consisted primarily of various building materials including, but are not limited to, suspended fiberboard ceiling tiles and light weight concrete ceiling panels, floors consist of concrete floors and concrete and terra cotta walls.

3.0 INSPECTION PERSONNEL, METHODS AND LABORATORY

3.1 Inspection Personnel and Process

3.1.1 Inspection Personnel

The investigative survey was conducted on October 3, 2018 by experienced Asbestos Inspector, Jesse A. DeGeorge and Matthew Buccella (License #ACC-0817).

3.1.2 Inspection Process

The inspection for ACMs and hazardous building materials (HBMs) was conducted using AXIOM's standard safety procedures and inspection protocols including:

1. Review available reports or data (no previous reports or documents were available).

2. A visual inspection of the building interiors, exterior to locate, quantify and assess the condition of materials suspected to contain asbestos, lead, PCBs, CFCs, Mercury and other hazardous chemicals, materials and wastes. The roof was not part of the survey.

3. Collection and analysis of materials as described herein to determine their composition.

3.2 Asbestos-Containing Materials (ACM) Investigation

3.2.1 Methodology

The inspection for suspect ACMs included:

1. Collection of representative bulk samples of each homogeneous application of suspect material in sufficient numbers to comply with EPA/AHERA criteria (see Chart A below).

2. To prevent release of any airborne asbestos, samples of suspect friable materials were collected by wetting the suspect materials and then removing a small full-thickness sample and placing it in a sealed plastic bag labeled with a unique sample identification number.

3. Chain-of-custody documentation was used to ensure sample integrity.

4. Analysis of the bulk samples by an accredited laboratory using the EPA-approved Polarized Light Microscopy (PLM) method.

5. A review of the inspection findings and lab results to ensure proper and consistent identification and characterization of all confirmed and presumed ACMs.

Chart A

Minimum Asbestos Bulk Sampling Criteria

Type of Suspect Material[1]	Minimum Sampling Criteria
Surfacing	EPA/AHERA mandated statistically random criteria (Min. of 3 samples; Max. of 7 samples)
Miscellaneous	A sufficient number of samples to determine if material is an ACM (typically 2 samples of each homogeneous application)
Thermal System Insulations	Three random samples of each homogeneous material

3.2.2 *Definition of Key Inspection Terms*

Given the specific purposes and objectives of this inspection, the following definitions were used for the terms:

1. Suspect Materials: Installed building materials that were either pre-formed (i.e., manufactured off-site) or were prepared and installed on-site. All building materials are considered to be suspect ACMs except as noted in #2 below.

2. Non-Suspect Materials: For the purposes of this inspection, the following materials were considered non-suspect and were not assessed or sampled if observed:

   - Plastic
   - Glass
   - Wood or Wood Composite Materials
   - Brick, Granite, Marble, Other Stonework
   - Clay or Ceramic Tiles
   - Rubber or Synthetic Foam
   - Paint (unless textured)
   - Concrete or Mortar (except Gyp-Crete)

[1] Per homogeneous material or area

- Pink or Yellow Fiberglass Insulation on Pipes or Other Mechanical Components
- Carpeting, Curtains, Wallpaper, and Other Paper/Natural Fiber, Fabric, or Synthetics

3. Homogeneous Applications or Areas: Are suspect materials which serve the same function or purpose (e.g., floor or ceiling tiles), have similar color and texture and were likely installed at the same time. Note that the homogeneity of certain materials such as plaster and wallboard joint compound assemblies at times cannot be readily determined.

4. Inaccessible Building Areas: Building areas, systems, structural components, or surfaces which could not be observed because it was unsafe or impractical to disassemble or remove systems or coverings or because a human being cannot physically enter or observe the area or components. These areas include some of the spaces behind hard walls and ceilings, buried portions of building footings or foundations, buried pipes, pipe chases, underground electrical vaults, man holes and inside any type of enclosed or sealed storage tanks or vessels, boilers or tanks.

5. Confirmed ACMs: Suspect materials where at least one of the bulk samples contains an asbestos concentration greater than 1%. According to the EPA AHERA criteria, if all bulk samples of a homogeneous area of material are found to contain less than 1% asbestos, the material may be classified as a non-asbestos material.

3.3 Asbestos Laboratory Services

3.3.1 PLM Bulk Sample Analysis

Bulk samples collected during the inspection were submitted to and analyzed by EMSL Analytical, Inc. (EMSL) located in Woburn, MA. EMSL is a Rhode Island licensed laboratory for asbestos bulk sample analysis and is accredited for asbestos bulk sample analysis under the National Voluntary Laboratory Accreditation Program (NVLAP) administered by the National Institute of Standards and Technology (NIST). Bulk samples were analyzed for asbestos content using EPA Method 600/R-93/116. A chain-of-custody form was used to ensure sample integrity.

The entire inventory of collected samples may not have required analysis. Initially, one sample per material was analyzed. If the first sample was found to contain asbestos, the remaining samples were not analyzed (*Positive Stop* protocol). If the first sample was determined not to contain asbestos, however, the remaining samples were analyzed until >1% asbestos was detected or until the entire sample set was analyzed. The laboratory analysis results are included in Appendix A.

3.4 Lead Containing Paint (LCP) Investigations

Representative testing of paints for the presence of lead was performed in accessible interior and exterior areas of the building as part of AXIOM's scope of work. Detailed survey data is presented in Appendix B.

3.4.1 Introduction

Historically, lead was added to paint because its color stability properties made it a desirable pigment and because it enhances durability. Lead-Containing Paint (LCP) becomes harmful when ingested or inhaled as dust or fumes. Once lead was proven to be a health hazard, it was officially banned in 1978 from paints used in residences.

In an occupational setting, if lead-based painted surfaces are to be impacted by renovation or demolition activities, contractor personnel exposure (per OSHA compliance) and waste disposal (per EPA compliance) issues must be addressed and factored into the cost of the project.

3.4.2 Testing Methodology

AXIOM utilized a Portable X-Ray Fluorescence Analyzer (XRF) to perform the lead paint survey. The XRF is a hand-held instrument that contains a radioisotopic source and operates on the principle of X-ray fluorescence. The depression of a spring-loaded trigger mechanism on the XRF unit opens a shutter in the face-plate that allows radiation from an isotopic source to stimulate the lead atoms in the paint. This stimulation causes the atoms to emit (fluoresce) X-rays which the unit detects and converts into electrical pulses which are then processed, and the result is read through a digital display on the instrument.

AXIOM used a NITON Model XLp300 which analyzes surfaces quickly, accurately and non-destructively. Surface levels of lead are measured in milligrams per square centimeter (mg/cm^2). This unit can measure the concentration of LCP on surfaces as little as 0.01 mg of lead/cm^2.

3.4.3 XRF Testing Procedures

Upon arrival at the site, a "validation test" was performed to ensure that the XRF instrument was operating properly. The validation test was performed on a calibration test sheet supplied by the manufacturer to determine if the instrument is consistently measuring lead content. During this survey, the XRF was functioning properly as defined by the manufacturer.

In conducting the LCP survey, representative tests were performed on homogeneous (similar color and use) painted surfaces. Results were related to other surfaces possessing similar homogeneous characteristics. By following this sampling protocol, every painted surface did not have to be tested. Representative testing was performed for the presence of lead-based paint (LBP) and lead-containing paint (LCP) on accessible interior and exterior painted surfaces.

3.5 Polychlorinated Biphenyls (PCBs) and DEHP Investigations

AXIOM conducted an inspection of the building and grounds to identify suspect PCB-containing fluorescent light fixture ballasts, electrical transformers and bulk products. The survey was conducted in a systematic manner that included:

1. Performing a detailed walk-through to inspect and categorize the various types of accessible fluorescent light fixtures and electrical transformers.

2. Preparing an inventory of electrical light ballasts and transformers known or suspected to contain PCBs. Nameplate data was recorded if it was present and legible.

3.6 Mercury Light Tubes and Thermostats Investigations

AXIOM inspected the building to identify suspect Mercury-containing equipment as follows:

1. Preparing an inventory of fluorescent light bulbs that contain Mercury vapor in conjunction with the light ballast inspection described in Section 3.5.

2. Performing a walkthrough to identify and inventory thermostats, switches, actuators and other equipment that contain liquid Mercury.

3.7 Chlorofluorocarbons (CFCs) Investigations

AXIOM inspected the building to identify suspect chlorofluorocarbons (CFCs) associated with refrigeration and air conditioning equipment and prepared an inventory of equipment including an estimate of CFC quantities. Nameplate data was recorded if it was present and legible. Assumptions were made if the unit was inaccessible or if the nameplate was not present or illegible.

3.8 Miscellaneous Hazardous Building Materials Investigations

AXIOM inspected the building and grounds for miscellaneous hazardous building materials and chemical wastes including oil-containing devices (e.g. boilers, generators, elevators, motors, grease traps, etc.) and miscellaneous items such as lead acid batteries, paints, cleaners and other chemicals.

3.9 Moisture Testing

AXIOM used a moisture meter to determine if water/moisture was present in various building materials in the affected elevator machine room renovation areas. Refer to Section 4.6 for the results.

4.0 FINDINGS AND RECOMMENDATIONS

4.1 Asbestos-Containing Materials

4.1.1 Asbestos-Containing Materials (ACMs)

Materials confirmed to contain asbestos by AXIOM are listed in Table 1 below:

TABLE 1 - CONFIRMED ACMS

Sample Reference	Material	Location(s)	Estimated Quantity[2]	Results
100318-95-02A - 02C	Pipe Insulation (w/ heat pipes)	Elevator Machine Room, Lower & Upper Levels	35 LF	2% AMO 15% CHR
100318-95-03A - 03C	Pipe Fitting Insulation (w/ heat pipes)	Elevator Machine Room, Lower & Upper Levels	20 EA	15% CHR

4.1.2 Presumed Asbestos-Containing Materials (PACMs)

The following presumed ACMs (PACMs) may be present in or on the building or at the site that could not be investigated or tested due to inaccessibility:

TABLE 2 - PRESUMED ACMS

[2] LF = Linear Feet; EA = Each; CHR = Chrysotile Asbestos; AMO = Amosite Asbestos

Material	Location	Estimated Quantity	Friability
Asphaltic Roofing Materials	Main Roof Field & Flashing	TBD	Non-Friable

4.1.3 Non-Asbestos-Containing Materials

Materials that are non-ACMs based on AXIOM's most recent survey are listed in Table 3 below:

TABLE 3 - CONFIRMED NON-ACMS

Sample Reference	Material	Location(s)
100318-95-01A & 01B	Fiberboard Ceiling Panels	Elevator Machine Room, Upper Level
100318-95-04A & 04B	Light Weight Concrete Ceiling Panels	Elevator Machine Room, Upper Level
100318-95-05A	Exterior Window Glazing Compound (w/ metal window)	Exterior, Rear Side of Elevator Machine Room
100318-95-06B	Exterior Window Caulking (w/ metal window)	Exterior, Rear Side of Elevator Machine Room
100318-95-07A & 07B	Cementitious Coating of EFOS Siding	Exterior, All Sides of Elevator Machine Room
100318-95-08A & 08B	Exterior Seam Caulking	Exterior, All Sides of Elevator Machine Room

4.1.4 Discussion and Recommendations

All confirmed ACMs that will be impacted by the demolition activities must be removed by a Rhode Island-licensed Asbestos Removal Contractor. Removal of ACMs must be clearly defined in a project specification which is used to obtain competitive bids for the work. There are several friable ACMs in this building. The condition of these ACMs is generally good.

As required by governing regulations, completion of each asbestos removal task must include a visual inspection by a Rhode Island-licensed Asbestos Project Monitor. If asbestos removal is performed inside a negative pressure enclosure (containment), final clearance air testing must also be performed by a Rhode Island-licensed Asbestos Project Monitor.

Removal of ACMs, PACMs and other HBMs should be clearly defined in a project specification which is used to obtain competitive bids for the work.

A detailed cost estimate for removal of the above-referenced HBMs is present in Appendix E.

4.2 Lead–Containing Paints (LCP)

The HUD[3] lead paint standard classifies Lead Based Paint (LBP) as paint having $\geq$1.0 mg/cm^2 as measured by the XRF or $\geq$0.5% of lead by weight as analyzed by Atomic Absorption. With respect to renovation and demolition work, OSHA defines a lead-containing paint (LCP) as paint containing detectable amounts of lead.

[3] U.S. Department of Housing and Urban Development

Testing revealed several paints at the building are LBPs. A complete listing of the testing results can be found in Appendix B; however, Table 4 provides a summary of the highest LBP levels found at the building.

TABLE 4
SUMMARY OF LBPS

Description	Location	XRF Reading (mg/cm^2)
Light Gray Paint on Metal Door Casing	Exterior, Front Side of Bldg.	10.1
Brown Paint on Metal Window Casing	Exterior, Front Side of Bldg.	14.5
Gray Paint on Metal Structural Support Beam	Elevator Machine Room, Lower & Upper Levels	3.1 – 3.8
Gray/Dark Gray Paint on Terra Cotta Wall	Elevator Machine Room, Lower & Upper Levels	2.2 – 3.1
Gray Paint on Metal Stair Stringer	Elevator Machine Room, Lower & Upper Levels	4.9
Gray Paint on Metal Hand Rail	Elevator Machine Room, Lower & Upper Levels	2.9

Based on testing, several paints were found to contain detectable lead, however, the paints listed in Table 4 have significant lead levels and are therefore characterized as LBPs. The paints are generally in good condition.

Contractors should be made aware of the presence of lead paint testing results to satisfy the hazard communication requirements set forth by OSHA regulations. Specifically, contractors and subcontractors should be required to comply with OSHA regulation 29 CFR 1926.62 for lead exposure in construction and 29 CFR 1926.59, *Hazard Communication for the Construction Industry*. This could be accomplished by providing the affected contractors with a copy of this report. The General Contractor is responsible for informing and managing their employees and subcontractors.

The current interpretation of the EPA's Resource Conservation and Recovery Act (RCRA) requires that waste generated during projects where LCPs are present and will be disposed of is tested for the toxicity characteristic of lead in the waste stream. TCLP[4] testing is performed to determine whether waste (construction/demolition debris) must be classified as hazardous because of its lead content or if it can be disposed in a conventional construction and demolition (C&D) landfill. The regulatory limit for lead toxicity is 5.0 milligrams per liter (mg/L) using the EPA Method SW846-7420 for Atomic Absorption Spectroscopy (AAS). Since the need for TCLP testing is typically determine by the disposal facility/landfill, AXIOM recommends that pre-disposal testing is the contractor's responsibility.

4.3 Polychlorinated Biphenyls (PCBs) and Mercury in Electrical Equipment

4.3.1 Fluorescent Light Fixtures

[4] Toxicity Characteristic Leachate Procedure (TCLP)

AXIOM identified one (1) type of fluorescent light fixture in the building. AXIOM was unable to dismantle and inspect some of the light fixtures due to height/site restraints. Therefore, the ballasts are presumed to contain PCBs. All ballasts labeled "No PCBs" are presumed to contain di (2-ethylhexyl) phthalate (DEHP). A summary of fluorescent light fixtures is provided in Appendix C.

Handling and disposal of fluorescent light ballasts that contain PCBs should be performed in accordance with the Massachusetts Universal Waste Management Standard (310 CMR 30.1034) and EPA's Resource Conservation and Recovery Act (RCRA) and other governing regulations and requirements. There are two methods currently available for disposal of PCB-containing ballasts including incineration and disposal. Incineration is typically more expensive. Regardless of the method, documentation must be provided that verifies the proper removal, transportation, and disposal (destruction/incineration) at an approved facility. In general, PCB ballasts must be placed in 55-gallon drums which once filled, the drums must be closed and properly labeled for temporary storage, transport, and disposal in accordance with all applicable regulations. Drums containing PCB ballasts must be transported to an EPA-approved disposal facility (landfill or incinerator). Documentation must be provided that verifies the proper removal, transportation, and disposal (or destruction/incineration) at the approved facility. Drums containing non-PCB fluids, ballasts or capacitors shall be disposed of at a legally permitted disposal facility. There is presently no regulatory mandate for special handling and disposal of DEHP-containing ballasts, however, since there are a number of regulations that may be indirectly applicable[5] and since the disposal cost is not significant, AXIOM recommends disposing of DEHP-containing ballasts similarly.

4.3.2 Transformers

AXIOM did not observe any transformers in the building and/or at the site.

4.3.3 Mercury-Containing Items

There are approximately ten (10) fluorescent light bulbs associated with actual light fixtures. No other mercury-containing items were observed during the survey in the building and/or at the site.

Handling and disposal of fluorescent light bulbs that contain Mercury should be performed in accordance with the Massachusetts Universal Waste Management Standard (310 CMR 30.1034) and EPA's Resource Conservation and Recovery Act (RCRA) and other governing regulations and requirements. Guidance documents are also available from the EPA (e.g. the 1994 Green Lights Program for Lighting Waste Disposal). If fluorescent lamps become broken or damaged during removal, the broken lamps should be managed as hazardous waste. Note that fluorescent light tubes may be reused.

Mercury-containing devices must be properly recycled in accordance with 310 CMR 30.1034.

4.4 Chlorofluorocarbons (CFCs)

AXIOM did not observe any CFC-containing items in the building and/or at the site.

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[5] Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or "Superfund"), Solid Waste Disposal Act, the Clean Water Act, Safe Drinking Water Act and the Toxic Substances Control Act.

4.5 Miscellaneous Hazardous Wastes

4.5.1 Miscellaneous Hazardous Materials/Wastes

AXIOM identified other hazardous materials/wastes including, but are not limited to, elevator machines (w/ lubricating oils), AC/DC generators (w/ lubricating oils), metal containers with lubricating oils, miscellaneous painting supplies, fire extinguishers and computer monitors. These items as well as other items are also listed in Appendix C.

The above listed materials/components are not typically considered hazardous wastes while in use. However, those that are left behind must be properly characterized and disposed of in compliance with governing regulations.

Intact, non-leaking batteries should be handled and disposed of in accordance with the Universal Waste Management Standard 310 CMR 30.1034. If batteries are damaged or become damaged or leak during removal and/or handling, they should be managed as hazardous waste.

4.6 Moisture Testing

AXIOM used a moisture meter to determine if water/moisture was present in various building materials in the affected elevator machine room renovation areas. The moisture meter is a portable hand-held device that was used to determine the presence of moisture in building materials. It has a percent scale which measures moisture in building materials with a range of 6 to 90%. In general, moisture readings from 0% to 16% are considered low, moisture readings from 17 to 20% are considered moderate and moisture readings above 20% are considered high. Mold and fungi can typically grow on building materials where moisture readings are greater than 20%.

Table 5 below provides a summary of moisture meter readings collected on October 3, 2018.

TABLE 5

MOISTURE METER READINGS

Location/Description	Moisture Meter Reading (%)
Exterior Front Side of Elevator Machine Room / EFOS Siding	6.0-6.5%
Upper Level, Elevator Machine Room at Ceiling / Fiberboard Ceiling Panels	8.9-20.7%
Upper Level, Elevator Machine Room at Ceiling / Light Weight Concrete Ceiling Panels	14.0-14.8%
Lower Level, Elevator Machine Room at Exterior Wall / Terra Cotta Walls	11.0-21.5%

As indicated by the moisture meter readings presented above, the moisture levels in the fiberboard ceiling panels and the exterior terra cotta walls for tested materials are all considered in the moderate to slightly high range (>20%) with the exception of readings from exterior siding (<6.5%).

It must be noted that no mold growth was observed in the surveyed areas.

5.0 LIMITATIONS AND EXCLUSIONS

5.1 Limitations and Conditions of This Investigation

5.1.1 Asbestos Survey

This survey involved an investigation for ACMs in preparation for building demolition. Although this investigation attempted to identify and sample inaccessible building materials, the potential remains that concealed ACMs may be encountered in the building or at the site.

5.1.2 Inaccessible Materials and Locations

Inaccessible building areas, systems, structural components, or surfaces which may not have been observed because it was unsafe or impractical to demolish, disassemble, or remove systems or coverings, or because a human being cannot physically enter or observe the area or component. Unless specifically noted, inaccessible materials or areas may include:

- buried or otherwise concealed pipe trenches and utility vaults/corridors;
- electrical equipment/wire;
- most pipe and vessel gaskets;
- inside ductwork and air handling equipment;
- enclosed wall and ceiling cavities;
- fire door cores;
- remnant window and door caulking that have been replaced or in-filled;
- loose fill insulation concealed in walls;
- pipe and pipe fitting insulation concealed behind walls and above hard ceilings in some of the interior spaces; and,
- asphaltic roof field/flashing materials.

AXIOM made every reasonable effort to address these potential ACMs. However, the potential remains that concealed ACMs could be encountered during demolition work.

5.1.3 Other Environmental Exclusions

1. This investigation did not include an assessment of air quality or analysis of soil, surface water or groundwater. Furthermore, this study did not include any subsurface exploration, testing or assessment for wetlands.

2. This investigation did not include assessments for the presence of pesticides, herbicides, urea-formaldehyde, PCBs in sealants/caulkings or Radon, nor any air quality monitoring, or any chemical analysis of soil, surface water, or groundwater at the Site.

3. No attempt was made to check the compliance of present or past owners of the Site with Federal, State, or local laws.

4. The testing for lead paint was performed by an experienced Industrial Hygienist. It is intended only to satisfy the requirements of OSHA regulations including 29 CFR 1926.62, *Lead Exposure*

in Construction: Interim Final Rule and 29 CFR 1926.59, *Hazard Communication for the Construction Industry*. This investigation was not performed by an EPA HUD[6] or state accredited/licensed Lead Inspector which is often required for residential structures where children under the age of six live.

. *5.1.4 Project Specifications*

Users are cautioned that this document is an inspection report, not a project specification. Although it is often feasible to use a report such as this to obtain bids for asbestos and related abatement work, it does not provide a proper and/or complete document for defining the scope of work and specifying contractual obligations.

6 US Department of Housing and Urban Development

APPENDIX A

Asbestos Bulk Sample Results

EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

http://www.EMSL.com / bostonlab@emsl.com

EMSL Order: 131807125
Customer ID: AXIO80
Customer PO: 01334.001
Project ID:

Attention: Jesse A DeGeorge
Axiom Partners, Inc.
One Pleasure Island Road
Suite 2C
Wakefield, MA 01880

Phone: (603) 970-1135
Fax: (781) 213-6992
Received Date: 10/03/2018 3:05 PM
Analysis Date: 10/11/2018
Collected Date: 10/03/2018

Project: Elevator Renovation Project, Rhode Island State House, 82 Smith St., Providence, RI P#: 01334.001

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
100318-95-01A *131807125-0001*	Elevator Machine Room, Upper Level - Fiberboard Ceiling Panels	Brown/White Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
100318-95-01B *131807125-0002*	Elevator Machine Room, Upper Level - Fiberboard Ceiling Panels	Brown Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
100318-95-02A *131807125-0003*	Elevator Machine Room, Upper Level - Pipe insulation (w/heat pipes)	White Fibrous Homogeneous		83% Non-fibrous (Other)	2% Amosite 15% Chrysotile
100318-95-02B *131807125-0004*	Elevator Machine Room, Lower Level - Pipe insulation (w/heat pipes)				Positive Stop (Not Analyzed)
100318-95-02C *131807125-0005*	Elevator Machine Room, Lower Level - Pipe insulation (w/heat pipes)				Positive Stop (Not Analyzed)
100318-95-03A *131807125-0006*	Elevator Machine Room, Upper Level - Pipe fitting insulation (w/ heat pipes)	White Fibrous Homogeneous		85% Non-fibrous (Other)	15% Chrysotile
100318-95-03B *131807125-0007*	Elevator Machine Room, Lower Level - Pipe fitting insulation (w/ heat pipes)				Positive Stop (Not Analyzed)
100318-95-03C *131807125-0008*	Elevator Machine Room, Lower Level - Pipe fitting insulation (w/ heat pipes)				Positive Stop (Not Analyzed)
100318-95-04A *131807125-0009*	Elevator Machine Room, Upper Level - Light weight concrete ceiling panels	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
100318-95-04B *131807125-0010*	Elevator Machine Room, Upper Level - Light weight concrete ceiling panels	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
100318-95-05A *131807125-0011*	Exterior, Rear side of elevator machine room - exterior window glazing compound (w/ metal window)	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 10/11/2018 08:08:57

EMSL Analytical, Inc.
5 Constitution Way, Unit A Woburn, MA 01801
Tel/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com / bostonlab@emsl.com

EMSL Order: 131807125
Customer ID: AXIO80
Customer PO: 01334.001
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
100318-95-06B *131807125-0012*	Exterior, Rear side of elevator machine room - exterior window caulking (w/ metal window)	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
100318-95-07A *131807125-0013*	Exterior, front side of elevator machine room - Cementitious coating of EFOS Siding	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
100318-95-07B *131807125-0014*	Exterior, right side of elevator machine room - Cementitious coating of EFOS Siding	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
100318-95-08A *131807125-0015*	Exterior, front side of elevator machine room - Exterior seam caulking	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
100318-95-08B *131807125-0016*	Exterior, right side of elevator machine room - Exterior seam caulking	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)
Elizabeth Stutts (12)

Steve Grise, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-139, VT AL998919, Maine Bulk Asbestos LB-0039

Initial report from: 10/11/2018 08:08:57

OrderID: 131807125

AXIOM PARTNERS
1 PLEASURE ISLAND ROAD
SUITE 2C
WAKEFIELD, MA 01880
PHONE: 781.213.9198
FAX: 781.213.6992

LABORATORY ORDER #: 131807125
Sample(s) received in good condition? [Y] [N]
Discernable field blank submitted? [Y] [N]

Asbestos Analysis – Chain of Custody Form

Sampled by:	*Jesse A. DeGeorge*	**Date Collected:**	*10-03-18*
Project Name:	*Elevator Renovation Project*		
Project Site:	*Rhode Island State House, 82 Smith St., Providence, RI*		
Project ID/Number:	*01334.001*		
Special Lab Instructions:	***POSITIVE STOP**; email results to ekearney@axiomenv.com and jesse.degeorge@gmail.com*		

TURNAROUND TIME – If turnaround time is not chosen standard turnaround time applies (6 + Days)

☐ 3 Hours	☐ 6 Hours	☐ 12 Hours	☐ 24 Hours	☐ 48 Hours	☐ 72 Hours	☐ 4 Days	☒ 5 Days	☐ 6-10 Days

TYPE OF ASBESTOS ANALYSIS: EPA 600/R-93/116

SAMPLE NO.	SAMPLE DESCRIPTION	SAMPLE LOCATION	COMMENTS
100318-95-01A	Fiberboard Ceiling Panels	Elevator Machine Room, Upper Level	
100318-95-01B	"	"	
100318-95-02A	Pipe Insulation (w/ heat pipes)	Elevator Machine Room, Upper Level	
100318-95-02B	"	Elevator Machine Room, Lower Level	
100318-95-02C	"	Elevator Machine Room, Lower Level	
100318-95-03A	Pipe Fitting Insulation (w/ heat pipes)	Elevator Machine Room, Upper Level	
100318-95-03B	"	Elevator Machine Room, Lower Level	
100318-95-03C	"	Elevator Machine Room, Lower Level	
100318-95-04A	Light Weight Concrete Ceiling Panels	Elevator Machine Room, Upper Level	
100318-95-04B	"	"	
100318-95-05A	Exterior Window Glazing Compound (w/ metal window)	Exterior, Rear Side of Elevator Machine Room	
100318-95-06B	Exterior Window Caulking (w/ metal window)	Exterior, Rear Side of Elevator Machine Room	
100318-95-07A	Cementitious Coating of EFOS Siding	Exterior, Front Side of Elevator Machine Room	
100318-95-07B	"	Exterior, Right Side of Elevator Machine Room	
100318-95-08A	Exterior Seam Caulking	Exterior, Front Side of Elevator Machine Room	
100318-95-08B	"	Exterior, Right Side of Elevator Machine Room	

Relinquished:	Jesse A. DeGeorge *Jesse A. DeGeorge*	**Date:**	10-03-18	**Time:**	~ 1500
Received:		**Date:**		**Time:**	

REC'D AF 3:05 pm
EMSL-BOSTON OCT 03 2018 WI

APPENDIX B

Lead Paint Testing Results and Bulk Sample Analysis Results for Lead in Paints

XRF PAINT TESTING RESULTS

Elevator Renovation Project
Rhode Island State House
82 Smith Street, Providence, RI

Location	Sample Code	Substrate	Condition	XRF Reading (mg/cm^2)	Color
Exterior, Front Side of Elevator Machine Room	D	M	1	0.00	Lt. Gray
"	**DC**	**M**	**1**	**10.1**	**Lt. Gray**
"	Door Step	M	2 - 3	0.00	Lt. Gray
Exterior, Rear Side of Elevator Machine Room	WSH	M	1 - 2	0.00	Brown
"	**WC**	**M**	**1**	**14.5**	**Brown**
Elevator Machine Room, Lower & Upper Levels	CL	C	1 - 2	0.04	Gray
"	**STB**	**M**	**1 - 2**	**3.1 – 3.8**	**Gray**
"	FL	C	2 - 3	0.00	Red
"	FL	B	3 - 4	0.00 – 0.01	Gray/Dark Gray
"	**W**	**Terra Cotta**	**3 - 4**	**2.2 – 3.1**	**Gray/Dark Gray**
"	Steam Radiator	M	1 - 2	0.03	White
"	D	M	1	0.01	Gray
"	DC	M	1	0.03	Gray
"	**SS**	**M**	**1**	**4.9**	**Gray**
"	**HR**	**M**	**1 - 2**	**2.9**	**Gray**
"	Elevator Machine (for elevator cable)	M	1	0.02	Blue
"	AC/DC Generator	M	1	0.00	Blue

SAMPLE CODE:
BB-Baseboard; B-Bollards/Bumpers; C/T-Casing/Trim; CL-Ceiling; CR-Chair Rail; D-Door; DC-Door Casing; DJ-Door Jamb; DW-Duct Work; E-Equipment; FL-Floor; HR- Handrail; HVAC-Fans/Air Handlers; P-Piping; R-Railing; RD-Radiator; RC-Radiator Cover; SB-Stair Balusters; SH-Shingles/Siding; SR-Stair Riser; SS-Stair Stringer; SR-Stair Railing; ST, Stair Tread; STC-Structural Column; STB-Structural Beam; STM-Structure Misc; W-Wall; UW-Upper Wall; LW-Lower Wall; WSH-Window Sash; WC-Window Casing; WSL-Window Sill

SUBSTRATE TYPE:
W-Wood; G-Gypsum Board; P-Plaster; C-Concrete; CB- Concrete Block; PA-Paneling; T-Tile; M-Metal; B-Brick; U-Unknown

PAINT CONDITION:
1 to 5; 1 = Undamaged (< 5% damage); 2 = Slight Damage (6-15% Damage); 3 = Moderate Damage (16-25% Damage); 4 = Extensive Damage (26-50% Damage); 5 = Severe Damage (>50% Damage)

APPENDIX C

Hazardous Building Materials Tables

HBM INVENTORY

Elevator Renovation Project
Rhode Island State House
82 Smith Street, Providence, RI

Fluorescent Light Bulbs & Ballasts

Description	Qty	Location	Manufacturer	PCB Content
8', 2 Bulbs Hanging	5	Elevator Machine Room, Lower & Upper Levels	Unknown	Assumed PCBs

Miscellaneous White Goods

Description / Location	Manufacturer	Quantity
Fire Extinguishers / Elevator Machine Room, Lower Level	Unknown	2
Computer Monitor / Elevator Machine Room, Lower Level	Unknown	1
Lubricating Oil Assoc. w/ Gearless Elevator Machines / Elevator Machine Room, Upper Level	Unknown	2
Lubricating Oil Assoc. w/ AC/DC Generators / Elevator Machine Room, Lower Level	Unknown	2
Lubricating Oil Metal Containers (capacity: 1-gallon / contents: lubricating oil) Elevator Machine Room, Lower Level	Unknown	5
Paint Cans (capacity: 1-gallon / contents: paint) Elevator Machine Room, Lower Level	Unknown	3

APPENDIX D

Photographs

PHOTO 1

Asbestos-Containing Pipe/Fitting Insulation (w/ heat pipes), Lower & Upper Levels of Elevator Machine Room

PHOTO 2

Presumed Asbestos-Containing Asphaltic Roofing Materials, Main Roof Field & Flashings

PHOTO 3

Containers w/ Lubricating Oils, Lower Level of Elevator Machine Room

PHOTO 4

Elevator Machines w/ Lubricating Oils, Upper Level of Elevator Machine Room

APPENDIX E

Hazardous Building Materials
Abatement Cost Estimate

Hazardous Building Materials Abatement Cost Estimate
Rhode Island State House Building – Elevator Renovation Project
82 Smith Street, Providence, RI

Asbestos Removal – Confirmed ACMs

Material	Location(s)	Estimated Quantity	Estimated Removal Cost
Pipe Insulation (w/ heat pipes)	Elevator Machine Room, Lower & Upper Levels	35 LF	$ 550
Pipe Fitting Insulation (w/ heat pipes)	Elevator Machine Room, Lower & Upper Levels	20 EA	$ 450
		Subtotal, Asbestos Removal (Confirmed ACMs)	**$ 1,000**

Asbestos Removal - PACMs

Material	Location	Quantity	Removal Cost
Asphaltic Roofing Materials	Main Roof Field & Flashing	TBD	N/A*
		Subtotal, PACM Removal (Recommended Allowance)	**$ 10,000**

*N/A – Not applicable at this time.

Abatement Cost Estimate Summary

Description	Estimated Removal Cost
Asbestos Removal, Confirmed ACMs	$ 1,000
Asbestos Removal, Presumed ACMs (Contingency)	$ 10,000
Miscellaneous Hazardous Building Materials	$ 3,000
~10% Contingency	$ 1,400
Total Hazardous Building Materials Abatement	**$ 15,400**

Cost Estimate Assumptions

- Based on current market conditions by a non-union contractor.
- Power, water and heat provided by the Owner.
- Does not include demolition to access concealed ACMs.
- Includes materials, labor, equipment, notifications/permits, transportation and disposal.
- Excludes the cost for removal of any other hazardous materials or conditions not identified herein.

DOCUMENT 00 45 13

CONTRACTOR'S QUALIFICATION STATEMENT

AIA Document A305, Contractor's Qualification Statement - Electronic Format, 1986 Edition, is included, following this page, as an integral part of the Bid documents, for use in evaluating the qualifications of Contractors.

The numerical low bidder will be required to complete and submit this form for evaluation.

END OF DOCUMENT

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AIA® Document A305™ – 1986

Contractor's Qualification Statement

The Undersigned certifies under oath that the information provided herein is true and sufficiently complete so as not to be misleading.

SUBMITTED TO:

ADDRESS:

SUBMITTED BY:

NAME:

ADDRESS:

PRINCIPAL OFFICE:

[ ] Corporation
[ ] Partnership
[ ] Individual
[ ] Joint Venture
[ ] Other

NAME OF PROJECT: *(if applicable)* State House Elevator Modernization

TYPE OF WORK: *(file separate form for each Classification of Work)*

[ ] General Construction
[ ] HVAC
[ ] Electrical
[ ] Plumbing
[ ] Other: *(Specify)*

§ 1 ORGANIZATION

§ 1.1 How many years has your organization been in business as a Contractor?

§ 1.2 How many years has your organization been in business under its present business name?

§ 1.2.1 Under what other or former names has your organization operated?

§ 1.3 If your organization is a corporation, answer the following:

§ 1.3.1 Date of incorporation:
§ 1.3.2 State of incorporation:
§ 1.3.3 President's name:
§ 1.3.4 Vice-president's name(s)

§ 1.3.5 Secretary's name:

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.

This form is approved and recommended by the American Institute of Architects (AIA) and The Associated General Contractors of America (AGC) for use in evaluating the qualifications of contractors. No endorsement of the submitting party or verification of the information is made by AIA or AGC.

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User Notes: (3B9ADA2D)

§ 1.3.6 Treasurer's name:

§ 1.4 If your organization is a partnership, answer the following:

§ 1.4.1 Date of organization:

§ 1.4.2 Type of partnership (if applicable):

§ 1.4.3 Name(s) of general partner(s)

§ 1.5 If your organization is individually owned, answer the following:

§ 1.5.1 Date of organization:

§ 1.5.2 Name of owner:

§ 1.6 If the form of your organization is other than those listed above, describe it and name the principals:

§ 2 LICENSING

§ 2.1 List jurisdictions and trade categories in which your organization is legally qualified to do business, and indicate registration or license numbers, if applicable.

§ 2.2 List jurisdictions in which your organization's partnership or trade name is filed.

§ 3 EXPERIENCE

§ 3.1 List the categories of work that your organization normally performs with its own forces.

§ 3.2 Claims and Suits. (If the answer to any of the questions below is yes, please attach details.)

§ 3.2.1 Has your organization ever failed to complete any work awarded to it?

§ 3.2.2 Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against your organization or its officers?

§ 3.2.3 Has your organization filed any law suits or requested arbitration with regard to construction contracts within the last five years?

§ 3.3 Within the last five years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a construction contract? (If the answer is yes, please attach details.)

§ 3.4 On a separate sheet, list major construction projects your organization has in progress, giving the name of project, owner, architect, contract amount, percent complete and scheduled completion date.

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User Notes: (3B9ADA2D)

§ 3.4.1 State total worth of work in progress and under contract:

§ 3.5 On a separate sheet, list the major projects your organization has completed in the past five years, giving the name of project, owner, architect, contract amount, date of completion and percentage of the cost of the work performed with your own forces.

§ 3.5.1 State average annual amount of construction work performed during the past five years:

§ 3.6 On a separate sheet, list the construction experience and present commitments of the key individuals of your organization.

§ 4 REFERENCES

§ 4.1 Trade References:

§ 4.2 Bank References:

§ 4.3 Surety:

§ 4.3.1 Name of bonding company:

§ 4.3.2 Name and address of agent:

§ 5 FINANCING

§ 5.1 Financial Statement.

§ 5.1.1 Attach a financial statement, preferably audited, including your organization's latest balance sheet and income statement showing the following items:

Current Assets (e.g., cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory and prepaid expenses);

Net Fixed Assets;

Other Assets;

Current Liabilities (e.g., accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries and accrued payroll taxes);

Other Liabilities (e.g., capital, capital stock, authorized and outstanding shares par values, earned surplus and retained earnings).

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§ 5.1.2 Name and address of firm preparing attached financial statement, and date thereof:

§ 5.1.3 Is the attached financial statement for the identical organization named on page one?

§ 5.1.4 If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g., parent-subsidiary).

§ 5.2 Will the organization whose financial statement is attached act as guarantor of the contract for construction?

§ 6 SIGNATURE

§ 6.1 Dated at this day of

Name of Organization:

By:

Title:

§ 6.2

M being duly sworn deposes and says that the information provided herein is true and sufficiently complete so as not to be misleading.

Subscribed and sworn before me this day of

Notary Public:

My Commission Expires:

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DOCUMENT 00 52 13

AGREEMENT FORM

AIA Document A101 Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum - 2017 Edition, and as amended, forms the basis of Contract between the Owner and Contractor, and is included, following this page, as an integral part of the Bid documents. Provisions that are not amended or supplemented remain in full force and effect.

END OF DOCUMENT

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DRAFT AIA® Document A101™ – 2017
Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

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.

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

The parties should complete A101™–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201™–2017, 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.

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AGREEMENT made as of the « » day of « » in the year « »
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address, telephone and facsimile numbers, and website)

«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»
«401.578.8100 (telephone); 401.574.8387 (facsimile)»
«www.puchasing.ri.gov»

on behalf of the User Agency:
(Name, legal status, address, telephone and facsimile numbers, and website)

«R.I. State House, Division of Purchases on behalf of the User Agency»
«82 Smith Street»
«Providence RI 02908»
«Tel. 401 574-8100»
Fax. 401 574-8387
«www.purchasing.ri.gov»

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

« »
« »
« »
« »
« »

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

«State House Elevators Modernization»
«82 Smith Street, Providence, RI 02908»
«Complete Modernization of the two elevators»

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

«Saccoccio & Associates Architects»
«1085 Park Ave, Cranston, RI 02910»
«Tel. 401 942-7970 »
«Fax. 401 942-7975»
«www.sa-architects.com »

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User Notes: (3B9ADA24)

The Owner and Contractor agree as follows.

DRAFT

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User Notes: (3B9ADA24)

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

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General Conditions, Supplementary Conditions (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 shall be the later of: (i) the issuance of the Purchase Order by the Owner; and (ii) the date set forth in a notice to proceed issued by the User Agency.

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

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:
(Check one of the following boxes and complete the necessary information.)

[« »] Not later than « » (« ») calendar days from the date of commencement of the Work.

[« »] By the following date: « »

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

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Portion of Work	Substantial Completion Date
« »	

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

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. Subject to additions and deductions as provided in the Contract Documents, the Contract Sum shall be: $_____.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price
« »	

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance
« »		

§ 4.3 Allowances, if any, are specified in the Bid Proposal Form and are included in the Contract Sum.

§ 4.4 Unit prices, if any, are specified in the Bid Proposal Form and include all costs, including without limitation, labor, materials, services, regulatory compliance, overhead, and profit necessary for the completion of the Work. Unit prices shall be used for both additions to, and deletions from the Work.

§ 4.5 Liquidated damages, if any:
(Insert terms and conditions for liquidated damages, if any.)

«**.1** In the event that there is one date for Substantial Completion of the Work, the Contractor shall pay the Owner the sum stipulated in this Section 4.5.1 as liquidated damages, and not as a penalty, for each calendar day of delay until the Work is substantially complete: $_____.

.2 In the event that the Project is scheduled to be completed in phases, and there is more than one date for Substantial Completion of the Work, the Contractor shall pay the Owner an aggregate amount equal to the sums stipulated in this Section 4.5.2 as liquidated damages, and not as a penalty, for each calendar day of delay until the Work for each phase is substantially complete:

Phase	Liquidated Damages Sum

.3 The Owner and the Contractor have reasonably determined the sums set forth in this Section 4.5 to be a fair estimate of the Owner' actual damages which are difficult to ascertain in the event of delay.»

§ 4.6 Other:

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.

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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.

§ 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, less retainage, 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 and approved by the Design Agent and the Owner 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 the Owner may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 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 In accordance with AIA Document A201™–2007, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- **.1** That portion of the Contract Sum properly allocable to completed Work;
- **.2** 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; and
- **.3** That portion of Construction Change Directives that the Design Agent determines, in the Design Agent's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- **.1** The aggregate of any amounts previously paid by the Owner;
- **.2** The amount, if any, for Work that remains uncorrected and for which the Design Agent has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2007;
- **.3** For Work performed or defects discovered since the last payment application, any amount for which the Design Agent may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2007; and
- **.4** Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due: five (5%) percent.

§ 5.1.7.1.1 Deleted.

§ 5.1.7.2 Deleted.

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:

(Insert any other conditions for release of retainage upon Substantial Completion.)

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The amount of five (5%) percent shall be retained by the Owner until the first anniversary of final completion of the Work.

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2007.

§ 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.

§ 5.1.10 Within 10 working days of receipt of any progress payment from the Owner, the Contractor must pay its Subcontractors the full amount included for each such Subcontractor within the Contractor's Application for Payment in accordance with the provisions of AIA A201 – 2007, General Conditions of the Contract for Construction.

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, less the amount withheld pursuant to § 5.1.7.3, 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 Article 12 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment; and
- **.2** a final Certificate for Payment has been issued by the Design Agent and approved in writing by the Owner;
- **.3** the Contractor has submitted its final release and final releases 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.

§ 5.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due in accordance with the provisions of "Prompt Payment by Department of Administration," R.I. Gen. Laws §§ 42-11.1-1 et seq.

§ 5.4 Owner's Rights

§ 5.4.1 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, the amount of any claim against the Contractor arising out of this Agreement, or any amount on account of any other reason permitted by applicable law.

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

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 6.1. An initial decision shall be required as a condition precedent to binding dispute resolution pursuant to Section 6.3 of any Claim arising prior to the date final payment is due.

§ 6.2 Mediation

For any Claim not resolved by the Initial Decision Maker procedures set forth in Section 6.1, and prior to the implementation of the binding dispute resolution procedures set forth in Section 6.3, the Contractor shall have the option to pursue mediation, exercisable by written notice to the Owner within 30 calendar days of an Initial Decision. In the event of the exercise of such option by the Contractor, the Owner and the Contractor shall attempt to select a mediator, and in the event that the Owner and the Contractor cannot agree on a mediator, either party may apply in writing to the Presiding Justice of the Providence County Superior Court, with a copy to the other, with a request for the court to appoint a mediator, and the costs of the mediator shall be borne equally by both parties.

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§ 6.3 Binding Dispute Resolution
For any Claim not resolved by the Initial Decision Maker procedures set forth in Section 6.1, or mediation at the option of the Contractor pursuant to Section 6.2, the method of binding dispute resolution shall be determined in accordance with the provisions of the "Public Works Arbitration Act," R.I. Gen. Laws §§ 37-16-1 et seq.

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.

§ 7.1.1 Deleted.

§ 7.2 The Work may be suspended by the Owner as provided in: (i) the State of Rhode Island General Conditions of Purchase Regulation or other applicable law; or (ii) 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: (i) the AIA Document A201 – 2007 or other Contract Document as modified by the Owner; and (ii) that provision in the AIA Document A201 – 2007 or other Contract Document as amended or supplemented by other provisions of the Contract Documents.

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

« **Simidele Mabray**
Project Manager »
«Department of Administration »
«Division of Capital Asset Management and Maintenance»
«1 Capitol Hill»
«Providence, RI 02908-5853»
Tel: (401) 222 3913
Cell: (401) 626 1585
Simidele.Mabray@doa.ri.gov

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

Armindo Goncalves»
«Chief of Planning & Design »
«Rhode Island Department of Administration »
«Division of Capital Asset Management and Maintenance»
«One Capitol Hill, providence, RI 02908»
«Tel: (401) 222 5716
Cell: (401) 302 4347
Fax: (401`) 345 4199

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

Steve Guglielmo »
Principal
Saccoccio & Assocciates Architects
1085 Park Avenue
Cranston. RI 02910

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Tel.: 401-942-7970
Fax.: 401-942-7975»
«steve@sa-architects.com»

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

« »
« »
« »
« »
« »
« »

§ 8.4 Neither the Owner's nor the Contractor's representative nor the Design Agent's representative shall be changed without 10 working days' prior notice to the other party.

§ 8.5 Insurance and Bonds
§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in the Solicitation and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in the Solicitation and elsewhere in the Contract Documents.

§ 8.6 Deleted.

§ 8.7 Other provisions:
§ 8.7.1 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 possess sufficient working capital to perform their obligations under the Contract Documents.
.2 The Contractor and its Subcontractors are each able to furnish the tools, materials, equipment, and labor required to complete the Project as required under the Contract Documents.
.3 The Contractor and each Subcontractor are authorized to do business in the State of Rhode Island and are properly licensed by all necessary governmental authorities having jurisdiction over them and over the Work and the Project.
.4 The execution of this Agreement and its performance is within its duly authorized powers.
.5 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.
.6 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 a contractor possessing such experience and expertise.

§ 8.7.2 The representations and warranties of the Contractor in this Section 8.7 and elsewhere in the Contract Documents will survive the execution and delivery of this Agreement, any termination of this Agreement, and the final completion of the Work.

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

§ 8.7.4 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 This Agreement is comprised of the following documents:

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.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, as modified by the Owner

.2 **Deleted.**

.3 AIA Document A201™–2007, General Conditions of the Contract for Construction, as modified by the Owner.

.4 **Deleted.**

.5 Drawings

The Drawings are included in the Solicitation and are available on the Division of Purchases website at www.purchasing.ri.gov.

.6 Specifications

The Specifications are included in the Solicitation and are available on the Division of Purchases website at www.purchasing.ri.gov.

.7 Addenda, if any, issued pursuant to the Solicitation form a part of the Solicitation and are available on the Division of Purchases website at www.purchasing.ri.gov.

.8 Supplementary and other Conditions of the Contract, including without limitation, the State of Rhode Island General Conditions of Purchase Regulation.

.9 Other documents listed below:

.1 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.

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

.3 The Purchase Order issued by the Owner.

§ 9.2 This Agreement and the Contract Documents are subject to, and governed by, the laws of the State of Rhode Island, including all procurement statutes and regulations (available at www.purchasing.ri.gov), and applicable federal and local law, all of which are fully incorporated into this Agreement by this reference.

§ 9.3 In the event of any conflict between or among the Contract Documents, or any Contract Documents and any provision of the State of Rhode Island Procurement Regulations and/or any other provision of the Rhode Island General Laws, the State of Rhode Island Procurement Regulations and the Rhode Island General Laws shall control.

ARTICLE 10 BENEFITS OF AGREEMENT

§ 10.1 The User Agency is a disclosed third-party beneficiary of this Agreement and shall have all of the rights and benefits hereunder to which such a party is entitled. Nothing contained in this Agreement shall create a contractual relationship with, or a cause of action in favor of, any other third party against the Owner or the User Agency.

§ 10.2 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 entered into as of the day and year first written above; provided, however, that this Agreement shall not become a valid, binding, and enforceable contract unless and until the Owner shall have issued a Purchase Order.

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«**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)*

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DOCUMENT 00 65 19.16

WAIVER OF LIEN FORM

The 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.

WAIVER OF LIEN FORM
Material or Labor

Construction Project Title: _____

General Contractor: _____

Subcontractor/Supplier: _____

General Contractor's previous Application No: _____
General Contractor's previous Application Date: _____

Schedule of Values Line Item No.: _____

DESCRIPTION OF WORK Heading: _____

Total payment Received to Date:
$ _____

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 and dated Application and Certificate for Payment.

Signed this month of _____ day of _____, 20___.

_____
(signature)

_____
(company/firm name)

END OF DOCUMENT

DOCUMENT 00 65 19.18

AFFIDAVIT OF GENERAL CONTRACTOR THAT ALL SUBCONTRACTORS. SUPPLIERS AND LABORERS HAVE BEEN PAID AND HOLD HARMLESS CLAUSE

The affidavit is included, following this page, as an integral part of the bid documents, for submittal with all applications for payment.

DOCUMENT 00815

AFFIDAVIT OF GENERAL CONTRACTOR
THAT ALL SUBCONTRACTORS. SUPPLIERS AND LABORERS
HAVE BEEN PAID: AND HOLD HARMLESS CLAUSE

To: State of Rhode Island

The undersigned hereby deposes, says and makes affidavit under oath that he/she is _____ of _____ and further certifies that as of today's date all monies previously advanced pursuant to requisitions of the Contractor in connection with the Project known as the Rhode Island State House Elevator Modernization have been paid to or are being held for and will be paid to the subcontractors, laborers, or suppliers: that there are no further amounts owing to the knowledge of the undersigned other than as set forth in the current requisition, a copy of which is attached hereto, and that only materials, fixtures, and equipment to which undersigned has absolute title have been used in the project. Further, the undersigned HEREBY HOLDS HARMLESS THE State of Rhode Island, AND ALL COMMITTEES, BOARDS, DEPARTMENTS AND AGENCIES THEREUNDER, AND AGREES TO INDEMNIFY SAME FOR ANY ACTION OR SUIT BROUGHT BY ANY SUBCONTRACTOR, LABORER, OR SUPPLIER FOR THE PAYMENT OF ANY SUMS DUE RELATIVE TO THE AFORESAID PROJECT. Said Hold Harmless Clause and Indemnification shall cause the undersigned to shield the State of Rhode Island and all committees, boards, departments and agencies from all attachments, chattel mortgages, and all liens, whatsoever, sought by subcontractors, laborers and/or suppliers for collection of monies allegedly due said parties for work performed on the aforesaid Project.

On the _____ day of _____, 20___, before me appeared_____, where upon oath said property executed the foregoing Affidavit as their free act and deed.

NOTARY

My commission expires:

DOCUMENT 00 72 13

GENERAL CONDITIONS

AIA Document A201, General Conditions of the Contract for Construction - 2007 Edition, is included, following this page, as an integral part of the Bidding and Contract Documents. Provisions that are not amended or supplemented remain in full force and effect.

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AIA® Document A201™ – 2007

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)
«State House Elevators Modernization»
«82 Smith Street, Providence, RI 02908»

THE OWNER:
(Name, legal status and address)
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, address, telephone and facsimile numbers, and web address)
The RI State House»
«82, Smith Street »
«Providence RI 02908
(401) 222- 3983 »

THE Design Agent:
(Name, legal status, address, telephone and facsimile numbers, and web address)
«Saccoccio and Associates Architects »
«1085 Park Ave »
«Cranston RI 02910
Tel.-(401) 942-7970
Fax- (401)942- 7975
sa-architects.com »

TABLE OF ARTICLES

1 GENERAL PROVISIONS

2 OWNER

3 CONTRACTOR

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5 SUBCONTRACTORS

6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

7 CHANGES IN THE WORK

8 TIME

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.

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

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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

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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 Conditions, Supplementary Conditions, 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 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.

§ 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.

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§ 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.

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner 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 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.

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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 Deleted.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER
§ 2.2.1 Deleted.

§ 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 Deleted.

§ 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 10 working-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. 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.

§ 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, or by tests, inspections, or approvals required or performed by persons or entities other than the Contractor.

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§ 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 Owner and 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, 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 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

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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 the 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 the 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, 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 30 calendar days after Final Completion and compliance by the Contractor with the requirements of such section.

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§ 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 working 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.

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§ 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 working 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 working-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 working 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 working 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 Owner's and the Design Agent's approval. The Owner's and 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 Owner and 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

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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 Owner and 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.

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

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§ 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, and 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, and administrative body of the state, and any political subdivision thereof, including without limitation, any department, division, agency, commission, board, office, bureau, committee, authority, educational institution, school, water, and fire district, and other agency of Rhode Island state, municipal, and local government that exercises governmental functions, any other governmental authority, and any quasi-public corporation and/or body corporate and politic, including without limitation, the User Agency, their elected and appointed officials, members, employees, and agents , the Design Agent, the Design Agent's Consultants, Subconsultants, and Subcontractors, and agents and employees and any of them from and against any and all claims, demands, damages, liabilities, judgments, losses and expenses, including but not limited to attorneys' fees and costs of mediation, arbitration, and/or litigation, arising out of or resulting from performance of the Work, and/or the obligations of the 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 any such claim, demand, damage, liability, judgment, 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.

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§ 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.

§ 3.18.3 Without limiting the generality of the foregoing, the defense and indemnity set forth in this Section 3.18 includes, without limitation, all liabilities, damages, losses, claims, demands, and actions on account of bodily injury, death, or property loss to a person or entity indemnified hereunder or any other persons or entities, whether based upon statutory (including, without limitation, workers compensation), contractual, tort, or other liability of any person or entity so indemnified.

§ 3.18.4 The remedies set forth herein shall not deprive any person indemnified hereunder of any other indemnity action, right, or remedy otherwise available to any such person or entity at common law or otherwise.

§ 3.18.5 The Contractor will include the indemnity set forth in this Section 3.18, without modification, in each Subcontract with any Subcontractor.

§ 3.18.6 Notwithstanding any other language in the Contract Documents to the contrary, the indemnity hereunder shall survive Final Completion of the Work and final payment under the Agreement and shall survive any termination of the Agreement.

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 Owner with assistance from 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 Section 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.

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§ 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.

§ 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 Payment pursuant 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.

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§ 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 and approved by the Owner.

§ 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.

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 and 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 Owner may reply within 14 working 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 Owner or Design Agent requires additional time for review.

§ 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 working days after the date of commencement of the Work, the Contractor shall furnish in writing to the Owner and 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 Owner may reply within 14 working 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 Owner or Design Agent requires additional time to review.

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§ 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.

§ 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.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 working 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

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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.

§ 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 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 between the Owner and the Contractor; a Construction Change Directive requires agreement by the Owner 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.

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Contractor 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.

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§ 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.

§ 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, 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.
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§ 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 Deleted.

§ 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 amount for overhead and profit as set forth in Section 7.3.1. 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, exclusive of hand tools; or
- **.4** Costs of premiums for all bonds and insurance and permit fees related to the Work..

§ 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

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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.

§ 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 Contractor will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.3.11 The combined overhead and profit included in the total cost to the Owner for a change in the Work shall be based on the following schedule:

.1 For the Contractor, for work performed by the Contractor's own forces, an amount not to exceed ten (10%) percent of the cost.

.2 For the Contractor, for work performed by the Contractor's Subcontractors, an amount not to exceed five (5%) of the amount due to the Subcontractors.

.3 For each Subcontractor, for work performed by the Subcontractor's own forces, an amount not to exceed ten (10%) percent of the cost.

.4 Where the Work represents both additions and deletions and results in a net increase, the allowable overhead and profit shall be in accordance with this Section 7.3.11, but in no event shall the amount exceed fifteen (15%) percent of the net increase in the cost of the Work.

§ 7.3.12 All proposals with an aggregate cost equal to or in excess of $500.00 shall be accompanied by a detailed itemization of costs, including labor, materials (quantities and prices), and Subcontracts, in a form acceptable to the Owner. In no event will a change order request reflecting an aggregate cost equal to or in excess of $500.00 be approved without such itemization.

§ 7.4 MINOR CHANGES IN THE WORK

The Design Agent with the prior written approval of the Owner 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 affected 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.

The date of commencement of the Work is the date established in Section 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 Deleted.

§ 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

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causes beyond the Contractor's control, then the Contract Time shall be extended by Change Order for such reasonable time as the Owner 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 working 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 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 the 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 working 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 the 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 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.

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§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Design Agent will, within 7 working 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, 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, 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 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.

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§ 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 10 working 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 7 working 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 working days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within 7 working 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 working days' written notice to the Owner and Design Agent, make a claim for payment as provided under the provisions of applicable law.

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§ 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.

§ 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

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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 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.

§ 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 less the amount of five (5%) percent to be retained by the Owner until the first anniversary of Final Completion of the Work. 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 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.

§ 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

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canceled or allowed to expire until at least 30 working 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, (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, and (6) all other close-out documents required by the Owner, including without limitation, all as-built plans, warranties, manuals, and other materials set forth in the Contract Documents. 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 General Conditions of Purchase Regulation.

§ 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, or if completed, the amount set forth in Section 3.4 of the Agreement.

§ 9.12 Warranties required by the Contract Documents shall commence on the date of Final Completion of the Work.

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.

§ 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.

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§ 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. 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 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

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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 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

§ 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.

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§ 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 working 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 negligent 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.

§ 11.2.1 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.

§ 11.2.2 If the Owner engages separate contractors to perform work for, or in or around, the Project, it shall require in its contracts with each separate contractor that Contractor and its officers, directors, partners, members, employees, and agents shall be: (i) named as additional insureds on a primary, noncontributory basis to any commercial general liability, pollution liability, and excess liability insurance policies; and (ii) provided a waiver of subrogation on all workers compensation and professional liability insurance policies.

§ 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 state of Rhode Island, 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.

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§ 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.

§ 11.3.1.2 Deleted.

§ 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 Deleted.

§ 11.3.3 Deleted.

§ 11.3.4 Deleted.

§ 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 working 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 Design Agent, Design Agent'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 Design Agent, Design Agent'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

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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 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 5 working 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.

§ 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 Final 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. If the Contractor fails to correct nonconforming Work within a reasonable time after receipt of notice from the Owner or Design Agent, the Owner may correct it in accordance with Section 2.4.

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§ 12.2.2.2.2 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.

§ 12.2.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.2.2.4 Upon request by the Owner and prior to the expiration of one year from the date of Final Completion, the Design Agent will conduct and the Contractor shall attend 2 meetings 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.

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§ 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. 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 calendar days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other

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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

§ 14.1.2 Deleted.

§ 14.1.3 If one of the reasons described in Section 14.1.1 exists, the Contractor may, upon 7 working 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 calendar 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 7 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;

.4 otherwise is guilty of breach of a provision of the Contract Documents; or

.5 cancels or the Contractor or the Owner receives notice of cancellation or nonrenewal of any insurance required under 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, 7 working 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.

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§ 14.3.2 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 in accordance with the provisions of Section 8.3.1.

§ 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. Such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly serviced if delivered in person, by mail, by courier, or by electronic transmission. Claims by either party must be initiated within 21 working days after occurrence of the event giving rise to such Claim or within 21 working 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 each cause of delay ceased to affect the progress of the Work and the number of days' increase in the Contract Time

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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 Deleted.

§ 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 15.2.1. An initial decision shall be required as a condition precedent to binding dispute resolution pursuant to Section 15.3.1 of any Claim arising prior to the date final payment is due.

§ 15.2.2 Deleted.

§ 15.2.3 Deleted.

§ 15.2.4 Deleted.

§ 15.2.5 Deleted.

§ 15.2.6 Deleted.

§ 15.2.6.1 Deleted.

§ 15.2.7 Deleted.

§ 15.2.8 Deleted.

§ 15.3 MEDIATION

§ 15.3.1 For any Claim not resolved by the Initial Decision Maker procedures set forth in Section 15.2.1, and prior to the implementation of the binding dispute resolution procedures set forth in Section 15.4.1, the Contractor or the Architect shall have the option to pursue mediation, exercisable by written notice to the Owner within 30 calendar days of an Initial Decision. In the event of the exercise of such option by the Contractor or the Architect, the Owner and the Contractor or the Architect shall attempt to select a mediator, and in the event that the Owner and the Contractor or the Architect cannot agree on a mediator, either party may apply in writing to the Presiding Justice of the Providence County Superior Court, with a copy to the other, with a request for the court to appoint a mediator, and the costs of the mediator shall be borne equally by both parties.

§ 15.3.2 Deleted.

§ 15.3.3 Deleted.

§ 15.4 BINDING DISPUTE RESOLUTION

§ 15.4.1 For any Claim not resolved by the Initial Decision Maker procedures set forth in Section 15.2.1, or mediation at the option of the Contractor pursuant to Section 15.3.1, the method of binding dispute resolution shall be determined in accordance with the provisions of the "Public Works Arbitration Act," R.I. Gen. Laws §§ 37-16-1 et seq.

§ 15.4.4 Deleted.

§ 15.4.4.1 Deleted.

§ 15.4.4.2 Deleted.

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§ 15.4.4.3 Deleted.

§ 16 COMPLIANCE WITH APPLICABLE LAW

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

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SECTION 00 80 00

SUPPLEMENTARY CONDITIONS

PART 1 - GENERAL

The following supplements further modify the Modified AIA Document A201, General Conditions of the Contract for Construction, 2007 Edition. Where a portion of the General Conditions is modified or deleted by these Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

PART 2 - ARTICLES

ARTICLE 13…MISCELLANEOUS PROVISIONS

Add the following Paragraph 13.10 to Article 13

13.10 Equal Opportunity

13.10.1 The Contractor shall maintain policies of employment as follows:

13.10.1.1 The Contractor and the Contractor's Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, sexual preference or national origins. The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex, sexual preference, or national origin.

Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of nondiscrimination.

13.10.1.2 The Contractor and the Contractor's Subcontractors shall in all solicitations or advertisements for employees placed by them or on their behalf; state that all qualified applicants will receive considerations for employment without regard to race, religion, color, sex, sexual, or national origin.

13.10.1.3 The Contractor shall be a signatory to the requirements of the Rhode Island Equal Employment Office.

The Contractor must provide to the Owner the approved records that the Contractor, all subcontractors and their associates and individual that visit the project site, have passed a (State) Rhode Island Bureau of Criminal Identification (BCI) check before entry onto the site and an equivalent State criminal identification check in the State they reside.

Add the following Paragraph 13.11 to Article 13:

13.11 Prevailing Wage Scales on Public Works Projects

13.11.1 Prevailing Wages shall be paid in accordance with Chapter 37-13 et seq. of the General Laws of Rhode Island, as amended and in accordance with the Rules and Regulations of the Department of Labor. Violators are subject to and responsible for all penalties, fines, and adjustments in wage and benefit payments as prescribed in Chapter 37-13 of the Rhode Island General Laws entitled "Labor and Payment of Debts by Contractors." This law shall be considered incorporated herein as if attached and written in full. Specific attention is called to Chapter 37-13-8 regarding the requirement that that "*each contractor awarded a public works contract after July 1, 2007 shall contact the department of labor and training on or before July first of each year, for the duration of such contract to ascertain the prevailing wage rate of wages on a hourly basis and the amount of payment or contributions paid or payable on behalf of each mechanic, laborer or worker employed upon the work contracted to be done each year and shall make any necessary adjustments to such prevailing rate of wages and such payment or contributions paid or payable on behalf of each such employee every July first.*"

13.11.2 The wage rates as ascertained by the Department of Labor shall apply. Information concerning wage rates prevailing in the construction industry in Rhode Island may be obtained from the Office of the State Department of Labor, 1511 Pontiac Avenue, Cranston, Rhode Island and are also available by accessing the following web site, http://www.purchasing.ri.gov. Under no condition shall the wages paid, be less than those designated in the general classification and the base bids shall be prepared taking into consideration the requirement for the annual adjustments.

13.11.3 The Contractor shall meet all the requirements prescribed by the State Labor Laws and regulation, issued by the Rhode Island Department of Labor, pertaining to Public Works Projects General Laws of Rhode Island. The laws are hereby made part of this Project as if attached and written in full. These laws include, but are not limited to:

1. Weekly payment of employees;
2. Provisions applicable to Public Works Contracts;
3. Payment of Prevailing Wages;
4. Posting of Prevailing Wage Rates and;
5. Overtime Compensation

It is the contractor's responsibility to use the current prevailing wage table. The table may be obtained at the RI Division of Purchases Home Page at www.purchasing.ri.gov .

Add the following Paragraphs to Article 13

13.12 SHUTDOWNS

While every effort should be made to minimize disruptions to communications, data, mechanical and/or electrical shutdowns affecting the existing operations and facilities at the Work Site and on campus with the work, the following criteria has been established in the event shutdowns are required to carry out the work scope of the project and/or in the event of emergency conditions.

The Contractor shall make provisions to assure that closure and/or disruption to roadways, driveways, sidewalks and other site access is minimized and scheduled well in advance if partial closure is required. Partial closure will be requested in writing by the Contractor and approved in writing by the Owner. At no time shall site access be permitted to be fully closed. The Contractor shall assure that traffic flow is maximized during peak hours of operation at the facility and at roadways affecting not only access to the site but the community as well. When traffic on these roadways is disrupted, the Contractor shall provide Police protection to assure public safety and movement of traffic as part of the base bid costs.

Additionally, these conditions shall be used regarding Public Ways such as streets and sidewalks and adjacent businesses as they may be affected by the project. It is the Contractors responsibility to provide and pay for all permits, temporary facilities, police protection, and details required to carry out the project scope. A detailed accounting and plan of the work to be performed during the shutdown shall be provided that includes the reason and duration of the shutdown, and any operations that will be affected by the shutdown. Plans shall be prepared by the Contractor and submitted to the Architect and Owner for review and then submitted to the appropriate authorities such as but not limited to State, State and Local Police, State and Local Public Works, Local Fire Departments and other agencies having jurisdiction.

Furthermore, the Contractor shall work with the Owner in maintaining the integrity of all systems at the Work Site because the Rhode Island State House is the seat of the Governor and the state legislature. The Contractor must coordinate and minimize any and all shutdowns of building systems as follows:

1. Assure that the Owner is provided with proper notice when making shutdowns and pay any fees as may be required and make any accommodations necessary to maintain operations and employee and resident comfort.
2. Ensure that the building and State House operations can continue in a secure manner and employee and resident comfort is maintained throughout the day, seven days a week.

The Contractor shall clearly define through the submittal process (before an exposure to disruptions in services can be triggered) complete and comprehensive protocols and procedures which will establish the notification procedure and specific details for permanent and/or temporary conditions to be implemented by the Contractor and accommodations for building operations and employee comfort. The submittals shall be provided to the Owner and Architect for the Owner's approval and at a minimum defines a procedure for the following:

01- Pre-notification Scheduled shutdowns (a minimum of not less than seven (7) calendar days notification for disruptions and shut downs to issues such as but not limited to the following:

Power
Data
Communications
Mechanical Systems
Fire Protection
Emergency Egress as may be required
Water
Roadways
Driveways
Parking
Employee and Public Entrances and Egress
Building Spaces
Handicap parking and handicap building access

All costs associated with these activities and accommodations for maintaining building operations and employee comfort are considered part of the Base Bid and Base Project Schedule.
The protocol submitted to the Owner and Architect shall establish the Contractor's written notification procedure and the Contractor's plans on making either permanent work around solutions and/or temporary solutions to assure that the facility and/or facilities continue with productive and safe business operations as usual, unless otherwise approved in writing by the Owner.

02- It is understood that certain circumstances and conditions sometimes require disruptions and shut downs that were planned for but however, may not have had the precise timing pre-planned, schedule acceleration has impacted the timing, extraordinary circumstances dictate that the work be performed out of sequence to allow the Project to continue. These disruptions/ shut downs shall be permitted with proper notification and in accordance with the protocols established by the Contractor as approved by the Owner provided notification is provided within seven (7) days of the scheduled work and, as long as accommodations are provided for continued building operations and maintaining employee comfort. All costs associated with these activities are considered part of the Base Bid and Base Project Schedule.

Illustrative examples include but are not limited to:

Power
Data
Communications
Mechanical Systems
Fire Protection
Emergency Egress as may be required
Water
Roadways
Driveways
Parking
Employee and Public Entrances and Egress
Building Spaces
Handicap parking and handicap building access

The Owner reserves the right to reject and/or request modification to these disruptions/ shut down requests, if it is determined that the request cannot be carried out in a manner that protects the interest of the Owner. In the event the request is rejected and/or otherwise modified the Contractor shall not be compensated for additional costs and/ or provided additional time for the Project provided the modification and timing is for just cause.

003- A protocol for Emergency and/or Accidental Shutdowns that require an Immediate Response Action shall be established for the Project.

The Contractor shall clearly provide details as to how they intent to minimize and/or otherwise correct or make alternate provisions to minimize the impact of the disruption to the Owner for issues pertaining to items such as but not limited to…

Power
Data

Communications
Mechanical Systems
Fire Protection
Emergency Egress as may be required
Water
Roadways
Driveways
Parking
Employee and Public Entrances and Egress
Building Spaces
Handicap parking and handicap building access

The costs for Emergency and/or Accidental disruptions and/or shut downs shall be borne by the Contractor.

004- The Contractor acknowledges that any and, all cost borne by the Owner and Architect due to shutdowns of systems due to poor planning by the Contractor shall be paid for by the Contractor and shall be appropriately deducted by a deductive change order affecting the next payment requisition.

Additionally, the Contractor shall not be eligible for time extensions due to rejection of a shutdown, rejected for failure to comply with this section or due to poor planning by the Contractor.

005- Not used.

006- Perform any duties required by Owner when making a shut down.

007- Provide appropriate fire watch during shutdowns which may affect fire alarm and or sprinklers system operations.

008- Duration of shutdowns shall be kept to a minimum.

009- All systems shall be returned to normal operating conditions at end of work day, unless otherwise planned and provided for and approved by the Owner in writing.

13.13 ZERO PUNCH LIST ITEM OBJECTIVES

The Contractor shall promptly correct conditions pointed out as being deficient at the time of the discovery and notification of such conditions and shall not defer the correction of work to the punch list or close-out phases of the project. Upon notification of deficient work the Contractor shall take action to correct the existing Work and not continue with new/additional Work in the manner that has been identified as being deficient. Deviation from this project approach shall be grounds for a Stop Work Order on the Project and the Owner and Architect will not be responsible for delays and/or additional costs due to the Stop Work Order.

All punch list and deficient work shall be performed by workmen skilled in the trade of the item damaged or improperly installed and in no cases shall repair work be performed by anyone other than the original installing Contractor without the written approval of the Owner and/or Architect, unless said Contractor is determined incompetent to continue such work at which time the Contractor will submit an alternative Contractor to the Owner in writing for approval at no additional costs to the Owner.

13.14 ADDITIONAL CONTRACT DOCUMENTS

Additional Consultant Reports included are to be considered part of the Contract Documents as Reference Materials. Consultant reports are complementary. They are as follows:

- None other than those included in the Drawings and Project Manual.

13.15 Quantity of Drawings and Specifications due the Contractor

The Owner shall furnish to the Contractor one (1) electronic file which includes drawings in CAD format for the purposes of producing As Built Documents.

13.16 Energy Rebates

When dealing with the utilities and other vendors in which the Owner is eligible for Energy Rebates or other forms of rebates, credits, discounts and etc., the Contractor shall assure that all applications are filled out and executed in a manner that rebate checks, credits and or/other forms of reimbursement are paid directly to the Owner with no exception unless otherwise noted and/or approved in writing.

13.17 Liquidated Damages

Damages are defined and delineated in the Bid Form

Add the following Paragraph 13.18 to Article 13

13.18 Special Warranties, Warranty Response Time, Service Contracts

The Contractor shall provide and pay for all the requirements outlined in this section (13.18) as part of the Project Base Bid.

Service Contracts will be captured in the Project Schedule of Values. The costs associated with the Service Contract Work will not be subject to retainage and will be billed quarterly for the duration of the Service Contract period, unless otherwise approved in writing by the Owner.

Warranty Provisions:

As prescribed in Paragraph 12.2.2.1 of AIA Document A201- 2017 as amended by the Contract Agreement the Contractor shall provide a minimum of a **two (2) year** warranty period on all systems, repairs, materials and workmanship incorporated in the project. Systems, repairs, materials and workmanship that has been prescribed as having warranties for periods greater than **two (2) years** by the individual specification sections shall be carried at the warranty period prescribed by that individual reference provided a minimum of **two (2) years** are provided in all aspects of the warranty/guarantee provisions.

Additionally, as prescribed in 12.2.2.2 of AIA Document A201-2017 as amended by the Contract Agreement, the **two (2) 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 performance of Work[1].

Furthermore, as provided in 12.2.2.3 of AIA Document A201-2017 as amended by the Contract Agreement states upon completion of any Work under or pursuant to Paragraph 12.2 that **the two (2) year** correction period in connection with the Work requiring correction shall be renewed and recommence. The obligations under Paragraph 12.2 shall cover any repairs and replacement to any part of the Work or other property that is damaged by the defective Work and Work impacted by such corrective action.

The Contractor is hereby notified that no warranty period of less than **two (2) years** is acceptable on the project and any and all contradictions to this **two (2) year** period in the individual specification sections shall be considered edited to read **two (2) years** in the event those specification sections indicate otherwise with the exception of those items that provide warranty/guarantee periods that are prescribed for a period of greater than **two (2) years**. Those periods shall remain for the period that has been prescribed, as greater than **two (2) years** as published and established in the Contract Documents.

Response Time Pertaining to Warranty Work:

The Contractor shall be prepared to respond to various warranty claims in accordance with the following schedule.

Schedule One, One Hour Response*:

The Contractor will respond to the Owner's request for service and have **qualified personnel on site** for:

- Significant[2] wall, and other building envelope system leaks (weather or non-weather related),
- Blockage of drainage systems
- Water infiltration resulting in total or partial failure of heating, cooling, and/or ventilation systems,
- Water infiltration resulting in total or partial loss of electrical power not related to service provider,
- Water infiltration resulting in partial or total loss of security systems, including but not limited to video surveillance, scanners, locking and arming of security systems and building locking,
- Water infiltration resulting in partial or total loss of data and telecommunications not related to service provider,
- Or, water infiltration resulting in any other failure of systems that could potentially cause significant damage to property and/or person.

Within One (1) Hour [twenty four hours a day seven days a week three hundred sixty five days or three hundred sixty six days a year, (24x7x365, 366)] of initial attempt to notify the Contractor, or applicable assigned/approved Subcontractor or Designee of the Contractor of the emergency condition.

Failure to respond within this prescribed period allows the Owner to obtain services by others to stabilize and/or correct the failed system to protect the building, equipment, and/or occupants. Should correction by others be necessary due to the failure of the Contractor to respond in accordance with the

[1] Punch List Completion and Acceptance
[2] "Significant" is defined as "Causing or Creating Damage and/or Danger to any of the Building Systems, Finishes, and/or Occupants."

time prescribed herein, the Owner reserves the right to charge the Contractor for all services rendered to correct the condition including but not limited to direct fees, administrative fees and Work associated with cleanup and disposal of damaged materials. Work performed by others does not cancel or render applicable existing and/or extended warranties by the Contractor null and void as this work has been performed by others as the Contractor failed to respond to the warranty claim in accordance with the appropriate times prescribed herein.

Telephonic Communication will be the prime means of notification followed by written communication.

The "Initial Attempt to Notify the Contractor" for a response action to Warranty Claims shall be defined as the initial call placed to the Contractors Legal Place of Business, messages left with answering services, answering machines, electronic voice mail systems, messages with staff answering call at the place of business, messages with secretaries, calls placed to pagers, mobile phones and etc. E-Mails shall not be considered appropriate notification.

Schedule Two, Four Hour Response:

The Contractor will respond to and have **qualified personnel on site** for:

- Minor, roof, wall, window and other envelope areas of the Work or caused by the Work (weather or non-weather related),
- Minor blockage of drainage systems and mechanical system leaks in the Work or caused by the Work.

Within Four (4) Hours [twentyfour hours a day seven days a week three hundred sixty five days or three hundred sixty six days a year, (24x7x365, 366)] of initial attempt to notify the Contractor, or applicable assigned/approved Subcontractor or Designee of the Contractor of the emergency condition.

Failure to respond within this prescribed period allows the Owner to obtain services by others to stabilize and/or correct the failed system to protect the building, equipment, and/or occupants. Should correction by others be necessary due to the failure of the Contractor to respond in accordance with the time prescribed herein, the Owner reserves the right to charge the Contractor for all services rendered to correct the condition including but not limited to direct fees, administrative fees and Work associated with cleanup and disposal of damaged materials. Work performed by others does not cancel or render applicable existing and/or extended warranties by the Contractor null and void as this work has been performed by others as the Contractor failed to respond to the warranty claim in accordance with the appropriate times prescribed herein.

Telephonic Communication will be the prime means of notification followed by written communication.

The "Initial Attempt to Notify the Contractor" for a response action to Warranty Claims shall be defined as the initial call placed to the Contractors Legal Place of Business, messages left with answering services, answering machines, electronic voice mail systems, messages with staff answering call at the place of business, messages with secretaries, calls placed to pagers, mobile phones and etc. E-Mails shall not be considered appropriate notification.

Schedule Three, Twenty Four Hour Response:

The Contractor will respond to and have **qualified personnel on site** for:

ALL OTHER EMERGENCY TYPE CLAIMS that present safety issues, discomfort, and/or otherwise affects the well-being of the building occupants within Twenty Four (24) hours [twenty four hours a day seven days a week three hundred sixty five days or three hundred sixty six days a year, (24x7x365,366)] of initial attempt to notify the Contractor of the building condition.

Failure to respond within this prescribed period allows the Owner to obtain services by others to stabilize and/or correct the failed system to protect the building, equipment, and/or occupants. Should correction by others be necessary due to the failure of the Contractor to respond in accordance with the time prescribed herein, the Owner reserves the right to charge the Contractor for all services rendered to correct the condition including but not limited to direct fees, administrative fees and Work associated with cleanup and disposal of damaged materials. Work performed by others does not cancel or render applicable existing and/or extended warranties by the Contractor null and void as this work has been performed by others as the Contractor failed to respond to the warranty claim in accordance with the appropriate times prescribed herein.

Telephonic Communication will be the prime means of notification followed by written communication.

The "Initial Attempt to Notify the Contractor" for a response action to Warranty Claims shall be defined as the initial call placed to the Contractors Legal Place of Business, messages left with answering services, answering machines, electronic voice mail systems, messages with staff answering call at the place of business, messages with secretaries, calls placed to pagers, mobile phones and etc. E-Mails shall not be considered appropriate notification.

Schedule Four, Ten Day Response:

The Contractor will respond to and have **qualified personnel on site** for:

GENERAL WARRANTY CLAIMS within Ten calendar (10) days of the initial attempt to notify the Contractor of the need for action.

Failure to respond within this prescribed period allows the Owner to obtain services by others to stabilize and/or correct the failed system to protect the building, equipment, and/or occupants. Should correction by others be necessary due to the failure of the Contractor to respond in accordance with the time prescribed herein, the Owner reserves the right to charge the Contractor for all services rendered to correct the condition including but not limited to direct fees, administrative fees and Work associated with cleanup and disposal of damaged materials. Work performed by others does not cancel or render applicable existing and/or extended warranties by the Contractor null and void as this work has been performed by others as the Contractor failed to respond to the warranty claim in accordance with the appropriate times prescribed herein.

Telephonic Communication will be the prime means of notification followed by written communication.

The "Initial Attempt to Notify the Contractor" for a response action to Warranty Claims shall be defined as the initial call placed to the Contractors Legal Place of Business, messages left with answering services, answering machines, electronic voice mail systems, messages with staff answering call at the

place of business, messages with secretaries, calls placed to pagers, mobile phones and etc. E-Mails shall not be considered appropriate notification.

Service and Mandatory Contract Requirements:

The Work shall be carried out by the Contractor or Sub-Contractors that provided and installed the original systems, assemblies, components, and etc. unless otherwise approved in writing by the Owner and Architect, or the regulatory requirements mandate another source of service. In such instances **where the service company has to be other than the original installing Contractor**, the firm proposed by the Contractor shall be submitted to the Owner for approval. The Owner reserves the right to reject a proposed Service Provider if it is determined to be in the best interest of the Owner to do so, and a new provider shall be submitted to the Owner for consideration at no additional cost to the Owner. All service companies shall be licensed to perform services in the State of Rhode Island and be in good standing with any and all regulatory agency(s) governing their licenses and/or trade.

The relation of Service Provider shall be established by a service contract established by the Service Provider between the Contractor, the Service Provider, and the building end user (appropriate name and contacts will be provided to the Contractor) as applicable which clearly outlines services to be provided. Payments for services shall be made to the Service Provider by the Contractor.

The Service Provider shall make all arrangements for the scheduling and timing of any and all preventative, predictive, and scheduled maintenance service calls, testing, seasonal system closure and startup and other requirements through the Rhode Island State House Facilities Management responsible for oversight (manager contact information will be submitted to the Contractor) and/or persons designated by the Owner. It shall be the responsibility of the Contractor through its Service Provider to assure that timely and on schedule maintenance takes place in accordance with all system requirements.

The following systems, as applicable to this project, shall be fully covered by programs that allow for legally prescribed testing, services, adjustments and etc. required to continue operations of the building system, in full compliance with any and all local, state, federal and miscellaneous requirements for continuous and uninterrupted building operations.

PREVENTATIVE, PREDICTIVE, SCHEDULED and REGULATORY
The following categories will require Service Contracts for those items provided per contract

13.19 Technical Expertise and Quality Expectations

The Contractor is herein advised that it is the Owner's intent to assure that all persons working on the project provide workmanship to the highest degree of all standards applicable in the industries in which they practice.

As such the Contractor is hereby notified that the selection of their project management teams, sub-contractors and their project management teams are fully compatible, properly trained and licensed and have a track-record in performing work in strict accordance with the required degree of quality to assure a fully functional facility on opening day. It shall be noted that access to the building is limited and systems are critical and opportunity to perform corrective work is extremely limited and disruptive to the facilities operation.

13.20 INDOOR AIR QUALITY PROGRAM

It is the Owners goal on this project to be proactive in maintaining the environmental comfort of the facility for the workers, visitors, staff, and future occupants.

As it is a known fact, many short and long-term Indoor Air Quality (IAQ) issues with occupied buildings during construction work are a result of poor construction practices, the Contractor shall submit to the Owner and Architect an IAQ Management Plan prior to the start of construction. This plan shall address procedures and programs to be carried out during **ALL phases** of construction beginning on day one and continued through the punch list and final-completion phases of Work including initial occupancy as required and anticipated in the Construction Milestone Schedule. All costs associated with the development of the IAQ Management Plan, implementing the plan, performing, and supervising the work necessary to meet the objective of the IAQ Management Plan, and services required to enforce and monitor the program shall be part of the Base Bid provided by the Contractor.

The following areas and procedures have been identified and shall be incorporated in the plan, in addition to those items that have been identified in throughout the technical sections of the agreement and those areas otherwise customarily established in an IAQ Management Plan for new, existing, and occupied construction through organizations such as but not limited to the Sheet Metal And Air Conditioning Contractors National Association (SMACNA), and the United States Environmental Protection Agency (EPA).

General Concerns during Construction and Post Partial Occupancy are illustrated below and shall be addressed as part of the Indoor Air Quality Program:

- Maintain overall cleanliness of the job site and frequent housekeeping in all areas to eliminate dust and other debris during the Work.

- Assure that all products (i.e. flashing, masonry, drywall, insulation, and etc.) are not installed prior to proper weather protection and are fully protected from any sources of moisture throughout the entire construction process including receipt of the product.

- Promptly and thoroughly clean spills of materials that can be absorbed into the building substrate. Document areas, of such spills in the record drawings.

- Accelerate emissions of wet products by using high ventilation.

- Do not unnecessarily cut materials that create dust and other fine debris once the finish process has commenced in a specific area.

- Use dust recovery systems to minimize dust.

- No smoking shall be permitted on the project site.

- Properly dispose of food throughout the construction process at all times. Do not allow food or beverages to accumulate at any time and under no circumstances shall food and drink be permitted to be disposed of on the roof, in walls and other building cavities.

- Protect ducts from construction dust and debris. Keep ducts clean at all times.

- Establish a complete physical enclosure to any construction zone and or/ activity to protect any finished work when addressing punch lists and/or other corrective work.

- Seal all return ducts to ensure that contaminants do not enter the HVAC system.

- Insure that exhausted contaminants do not re-enter the building through open windows or the air intake of the HVAC system.

13.21 <u>Noise Control</u>

- The Contractor shall provide methods, means, and facilities to minimize noise produced by the Construction operations.

- The Contractor shall abide by State House noise ordinances especially when the legislatures are in session in their chambers.

- The Contractor is permitted to work on site from Monday through Friday 7 a.m. until 7 p.m. unless local ordinances or other regulations otherwise prohibit work during these hours. It is the Contractor's responsibility to ensure that it is working with in the hours permitted by the local and state laws and regulations. The Contractor is fully responsible for obtaining and paying all permit fees to work on weekends and holidays as may be required by local or state authorities and the payment of any fees associated with work outside the ordinances for weekday work.

- Work shall be permitted on Saturdays between the hours of 7 a.m. to 5 p.m. and Sundays between the hours of 8 a.m. and 5 p.m., unless local ordinances or other regulations otherwise prohibit work during these hours. It is the Contractor's responsibility to ensure that it is working within the hours permitted by the local and state laws and regulations. The Contractor is fully responsible for obtaining and paying all permits fees to work on weekends and holidays as may be required by local or state authorities and any fees associated with work outside the ordinances for weekday work.

- All requests to Work outside the delineated hours shall be submitted to the Architect in writing a minimum of one (1) calendar week (168 hours) in advance. The Architect and Owner reserves the right to reject such requests and rejection of request does not entitle the Contractor to an extension

of Contract time and/or additional funds, unless those dates were clearly scheduled in the original Project Schedule.

Work required and/or directed outside the hours and conditions prescribed above to meet the scheduled project deadlines are subject to all the conditions prescribed within this section.

13.22 Dust Control

- The Contractor shall execute the Work by methods to minimize raising dust from construction operations on a continuous basis and provide effective dust control on a continuous and as needed basis as Work progresses. This is a critical requirement and shall be appropriately budgeted for as enforcement of this requirement is essential.

- The Contractor shall provide positive means to prevent significant amounts of air-borne dust from dispersing into the atmosphere.

- The Contractor shall fully comply with all applicable sections of the latest version of the Clean Air Act as enforced by the Environmental Protection Agency, The Rhode Island Department of Environmental Management, the Rhode Island Department of Health, OSHA, and any other agencies involved in its enforcement. Additionally, the Contractor shall fully comply with rules, regulations, laws, and standards governed at the state and local level that are related to the Clean Air Act and/or are otherwise extensions of the enforcement of the Clean Air Act. These acts are to be considered part of this Contract as if written in full and attached herein. The Contractor is responsible for and shall plan accordingly for all costs associated with the enforcement of these requirements.

13.23 Pest Control

The Contractor shall provide methods, means, and facilities to prevent pests and insects from entering the State House facilities, project trailers, storage facilities and/or any other temporary amenities due to the contractor's Work and operations on campus. The contractor shall also prevent pests and insects from becoming a nuisance to neighboring properties. This is a critical objective; As such the Contractor shall provide a narrative as to the procedures that will be implemented to meet this objective. This narrative can be addressed in the Indoor Air Quality Program.

13.24 Notice of Technology Use for Documents

Contractors are here-in notified that the Project Team utilizes E-Mail, and Software to process RFI's, Payment Requisitions, Submittals and other critical project documents. As such the Contractor shall be prepared to utilize these methods of posting various documents through E-Mail and utilizing software such as but not limited to Microsoft Office, Adobe Acrobat, and AutoDesk AutoCAD.

13.26 Not used

13.27 Testing

INSTRUCTIONS FOR TECHNICAL INSPECTIONS:

The Owner shall direct the Contractor as to the firm or firms to be used for testing in each of the categories identified in the schedule below. The Owner shall pay for these testing services. Scheduling and other arrangements for testing shall be arranged through the Contractor with the Written Approval of the Owners on Site Representative and/or Architect and costs for coordination and administration of testing shall be part of the Contractors Base Bid.

Costs associated with testing for areas of construction, overall monitoring and/or system installations that are **NOT** identified in the following schedule that require testing, certification and/or other forms of quality control including testing prescribed as part of product application procedures and confirmation, specialized systems testing, and additional quality control related to paint; grout; air quality testing; water quality testing, noise/acoustics; shall be carried as part of the Base Bid Cost by the Contractor as a Contractor Cost, **regardless of the specifications direction to carry the cost otherwise**.

The following Testing Services will be paid for by the Owner as delineated in the schedule that follows the exceptions noted below:

- Retesting being performed as a result of the Contractors failure to properly perform or execute the original work.
- Retesting required due to failure of original test.
- Required retesting to reconfirm or otherwise determine course of action required for remediation of a system or assembly not meeting the specifications or other prescribed and/or required standard (s).
- Testing associated with the progress of rework as may be required to bring a system or systems into compliance with the applicable standards.
- Testing confirming that corrective action has been performed properly.
- Additional costs for testing premiums required due to the Contractors failure to properly schedule or otherwise have a system or assembly tested at the appropriate time.

IDENTIFIED TESTING CATEGORY
Paid for by the Owner

The Contractor shall note that while the Owner is paying for the following tests, that the Contractor and Contractors' Subcontractors are obligated under the Base Bid to provide all required documentation, and certifications required to support the Owner and Architect required as part of the Special Inspections Chapter 17 of the Rhode Island State Building Code (RISBC). These documents are required to achieve the Certificate of Occupancy for the Facility and the timeliness of the documents are critical and all the costs associated with the administration, scheduling and procurement of required documents to support the Owner and Architect are part of the Contractors Base Bid Cost. Additionally, this work effort includes providing the Contractors Statement of Responsibility as required by the RISBC.

- All Structural Tests and Special Inspections required of IBC Chapter 17
- All testing required of the Technical Specifications Division 01 through Division 32
- Concrete slabs foundations & footings

- Site concrete sidewalks, slabs and paving.
- Structural Steel
- Masonry Construction
- Compaction Testing below Footings, Slabs, Exterior sidewalks, slabs and bituminous paving

13.28 On Site Water Use

In preparing the cost of the Project the Contractor shall take notice that on-site water (provided by Providence Water Supply) can be made available at a hydrant connection point approved by the State House Property Manager. It is paramount that this water source be established with backflow prevention and not be allowed to run when not in use. The Contractor shall install a meter and a backflow preventer as new use points may potentially disturb the water supply and result in dis-coloration. In the event the system is not used as intended and/or otherwise abused, the Owner will terminate the service at the expense of the Contractor. The Contractor may also choose to provide water from an off-site source.

The Contractor shall make provisions to provide water to be used in all construction operations, including but not limited to masonry work, concrete, temporary fire protection, construction housekeeping operations including rinsing of vehicles and concrete trucks, all dust control, drinking water for construction team members, testing of systems and any and all other operations requiring water. All costs associated with providing and maintaining the required on-site and/or off-site water shall be included as part of the Base Bid Costs for the Project.

13.29 Field Reports/Actions

The Contractor acknowledges that action items outlined in field reports prepared by the Project Architect, Project Engineer and the Owner's Project Manager that call out or otherwise identify deficiencies in construction and/or other project requirements shall be corrected as noted. Field reports delineating issues shall be considered part of the project document path and if the Contractor disagrees with the noted reported deficiency, the Contractor shall promptly document such disagreement for review by the Architect and the Owner's Representative.

13.30 Loading

Do not load any part of the Work involved in this Contract, during construction, with a load greater than that calculated to carry with safety. Should any accidents or damage occur through any violation of this requirement, the Contractor shall be held responsible under his Contract and Bond. When, in the opinion of the Architect, portions of the structure appear to be overloaded, it shall be the Contractor's responsibility to prove otherwise, or the Contractor shall follow the instructions of the Architect in connection with reduction of the loads.

Additionally, provide as required proper matting and supporting engineering data for matting required for the erection and operations of Cranes.

13.31 Working Conditions

The Contractor must confer with the Owner and coordinate the Work of the project so as to ensure campus activities can continue during the 24 hour per day, seven day per week operations, especially as required in sections 13.12, 13.20, 13.21, 13.22, 13.23. The Contractor must coordinate the Work in accordance with building operations.

END OF SECTION

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SECTION 01 11 00

SUMMARY OF WORK

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Contract description.

B. Contractor's use of site and premises.

C. Work sequence.

D. Owner occupancy.

E. Hazardous Material Suspicion.

1.02 CONTRACT DESCRIPTION

A. Work of the Project includes the modernization of the existing two Rhode Island State House elevators. The interiors of the elevator cabs are to be restored to like-new condition.

B. Perform the Work of the Contract under a stipulated sum Contract with the Owner in accordance with the Conditions of Contract.

C. The Work of the Contract is identified in the Project Manual and on the Drawings.

D. NOTE: The General Contractor is to include in their Base Bid all costs related to compensating the elevator company subcontractor for a technician to be present at the site during any non-elevator related work if required by state authorities.

1.03 CONTRACTOR'S USE OF SITE AND PREMISES

A. Limit use of the site and premises to allow:
   1. Owner occupancy throughout construction.
   2. Use of the site and premises by the public.

B. Construction Personnel Conduct
   1. The following conduct by construction personnel will not be tolerated on the Owner’s property, violators may be ejected from the site.
      a. NO SMOKING is allowed. The Contractor will erect signs noting such at all entrances.
      b. No drugs or alcohol are allowed
      c. No firearms or weapons are allowed.
      d. No foul language will be tolerated.
      e. No fighting. All involved will be subject to being removed from the site.

C. On-Site Work Hours:
1. Work shall generally be performed during normal business working hours of 6:00 A.M. to 7:00 P.M., Monday through Friday, except otherwise indicated.
2. Additional Hours: 6:00 A.M. to 7:00 P.M. Saturday, Sunday or Holidays with written permission from the Owner.
3. Any other hours may be allowed with written permission from the Owner.
4. Hours for Shutdowns: Shutdowns which may have an impact on the operation of the building shall not be allowed without prior written permission and approval from the Owner.

D. NOTE: See Allowance No. 5 for unanticipated afterhours work mandated by the Owner for convenience.

1.04 WORK SEQUENCE

A. Construct Work in stages to accommodate the Owner's occupancy requirements during the construction period, coordinate construction schedule and operations with the Architect.

NOTE:
One elevator must be in operation at all times throughout construction. The Contractor will recondition one elevator, while the other existing elevator continues operation. Then the completed elevator will handle traffic while the remaining existing elevator is refurbished.

If both elevators have to be shut down at the same time, this MUST be done during hours when the state offices are not open for business, the state Senate or House are not in session and no public events are scheduled. This afterhours work is considered included under the Base Bid, not included under Allowance No. 5.
The request for these overnight or weekend work periods must be submitted in writing and reviewed and approved by the Owner.
This is very important!

NOTE:
Contractor is required to confirm at the beginning of the project that the existing elevator controls will allow one elevator to be shut down, out of service, and the other elevator can remain in service. If the existing controls do not allow this, the Contractor is to submit a plan of action to accomplish the work without such capability. This plan must be reviewed and approved by the Owner.

B. The Contractor must coordinate the schedule as required to maintain one elevator in full working condition for the duration of the contract. The State House is open 24 hours a day, 7 days a week.

1.05 OWNER OCCUPANCY

A. The Owner will occupy the site and premises during the entire period of construction.
B. Cooperate with the Owner to minimize conflict, and to facilitate the Owner's operations.
C. Schedule the Work to accommodate Owner occupancy.

1.06 HAZARDOUS MATERIAL SUSPICION

A. If, during the course of construction, the Contractor suspects a material to contain asbestos, all work involving the material is to be stopped and the Architect notified immediately of the suspicion. Until the material is confirmed to be safe or tested and determined to be an asbestos containing material, the Contractor is to assume it contains asbestos and is to avoid contact. Upon notification of its composition the Architect will determine the course of action and inform the Contractor accordingly.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

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SECTION 01 20 00

PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Schedule of values.

B. Applications for payment.

C. Sales Tax Exemption

D. Change procedures.

E. Defect assessment.

F. Unit Prices

1.02 SCHEDULE OF VALUES

A. Submit a printed schedule on AIA Form G703 - Application and Certificate for Payment Continuation Sheet

B. Submit Schedule of Values in duplicate, one copyrighted original and one copy, within fifteen (15) days after date of receipt of a Purchase Order from RI State Department of Administration, Division of Purchases.

C. 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 and insurance.

D. Include in each line item, the amount of Allowances specified in Section 01 21 00 if occurring. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by the unit cost to achieve the total for the item.

E. Include separately from each line item, a direct proportional amount of Contractor's overhead and profit.

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

1.03 APPLICATIONS FOR PAYMENT

A. Submit each application on an original copyrighted AIA Form G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet, accompanied by three copies.
   1. Individually sign and notarize, and emboss with notary's official seal, the original and each of the three copies.
   2. Applications not including original copyrighted AIA G702, and G703 Forms, will be rejected, and returned for resubmittal.

3. Applications not properly signed and notarized will be rejected, and returned for resubmittal.

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

C. Provide one copy of the updated construction schedule with each Application for Payment submission.
   1. Provide a statement signed by the Contractor's firm principal certifying that there are no unidentified outstanding claims for delay.

D. Include with each monthly Application for Payment, following the first application, one copy of the Certified Monthly Payroll Record for the previous month's pay period.

E. Payment Period: Submit at intervals stipulated in the Agreement.

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 Waiver of Lien Form included in Document 00 65 19.16 - Waiver of Lien Form in this Project Manual, that payment monies due, less retainage not exceeding ten 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 Architect requires substantiating information, submit data justifying dollar amounts in question. Include the following with the Application for Payment :
   1. Current construction photographs specified in Section 01 33 00.
   2. Record Documents as specified in Section 01 78 00, for review by the Owner which will be returned to the Contractor.
   3. Affidavits attesting to off-site stored products.
   4. Construction progress schedules, revised and current as specified in Section 01 33 00.

1.06 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.

1.04 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 Architect 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 Architect 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 fifteen (15) days.

D. The Contractor may propose changes by submitting a request for change to the Architect, 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 Architect.

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 that 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: Architect 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, within the time limits indicated in the Conditions of the Contract. The Architect will determine the change allowable in the Contract Sum and Contract Time as provided in the Contract Documents.

I. Maintain detailed records of work done on a Time and Material basis. 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. Execution of Change Orders: The Architect will issue Change Orders for signatures of the parties as provided in the Conditions of the Contract.

M. 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.

2. 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.
3. Promptly enter changes in the Project Record Documents.

1.05 DEFECT ASSESSMENT

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

B. If, in the opinion of the Architect, it is not practical to remove and replace the Work, the Architect 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 Architect.

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

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

F. The authority of the Architect 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.

1.06 UNIT PRICES

A. Authority: Measurement methods are delineated in the individual specification Sections.

B. Measurement methods delineated in the individual specification Sections complement the criteria of this section. In case of conflict, the requirements of the individual specification Section govern.

C. Take measurements and compute quantities. The Architect will verify measurements and quantities.

D. Unit Quantities: The quantities and measurements indicated in the Bid Form are for contract purposes only. The quantities and measurements supplied or placed in the Work shall determine payment.
1. When the actual Work requires more or fewer quantities than those quantities indicated, provide the required quantities at the unit sum contracted.
2. When the actual Work requires a 25 percent or greater change in quantity than those quantities indicated, the Owner or Contractor may claim for a Contract Price adjustment.

E. Unit Price amount includes: Full compensation for required labor, products, tools, equipment, plant and facilities, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

F. Final payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the Architect multiplied by the unit sum for Work which is incorporated in or made necessary by the Work.

G. Measurement of Quantities:
1. Weigh Scales: Inspected, tested and certified by the applicable state Weights and Measures department within the past year.
2. Platform Scales: Of sufficient size and capacity to accommodate the conveying vehicle.
3. Metering Devices: Inspected, tested and certified by the applicable State department within the past year.
4. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
5. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
6. Measurement by Area: Measured by square dimension using mean length and width or radius.
7. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
8. Stipulated Sum Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work.

H. See Bid Form for schedule of Unit Prices if any.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

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SECTION 01 21 00

ALLOWANCES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Allowances.

B. Testing Allowance

1.02 ALLOWANCES

A. Costs Included in Cash Allowances: Cost of product to Contractor or Subcontractor, labor for installation and finishing, less applicable trade discounts; delivery to site, and applicable taxes

B. Costs Not Included in Cash Allowances But Included in the Contract Sum: Product delivery to site and handling at the site, including unloading, uncrating, and storage; protection of products from elements and from damage.

C. Architect Responsibilities:
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.

D. Contractor Responsibilities:
1. Assist Architect in selection of products, suppliers and installers.
2. Obtain proposals from suppliers and installers and offer recommendations.
3. On notification of selection by Architect, 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.

E. Differences in costs will be adjusted by Change Order.

F. Allowances Schedule:

1. **Allowance No. 1: Elevator Machine Room & Shaft Modifications:**
Modifications necessary to new construction due to unforeseen conditions.
Include the sum of **fifty thousand dollars ($ 50,000.00)** for modified new construction and repairs required due to unforeseen conditions

2. **Allowance No. 2: Elevator Cab & Entrance Modifications:**
For modifications to the elevator cab and entrances due to unforeseen conditions, include the sum of **twenty thousand dollars ($ 20,000.00).**

3. **Allowance No. 3: Roof Repairs:**
   Include the sum of **ten thousand dollars ($10,000.00)** for repairs to the existing copper flashing and Kemper roofing system as required to investigate and repair leaks.

4. **Allowance No. 4: Contamination Cleanup:**
   For demolition and disposal of any contaminated materials discovered during construction include the sum of **five thousand dollars ($ 5,000.00).**

5. **Allowance No. 5: Afterhours Work Mandated by Owner**
   Include the sum of **ten thousand dollars ($ 10,000.00)** for unanticipated afterhours work mandated by the owner for convenience.

1.03 TESTING AND INSPECTION ALLOWANCE

A. Costs included in Testing and Inspecting Allowance: Cost of engaging a testing and inspecting agency; execution of tests and inspecting; and reporting results.

B. Costs not included in the Testing and Inspecting Allowance but included in the Contract Sum:
   1. Costs of incidental labor and facilities required to assist testing or inspecting agency.
   2. Costs of testing services used by Contractor separate from Contract Document requirements.
   3. Costs of retesting upon failure of previous tests as determined by Architect.

C. Payment Procedures:
   1. Submit one copy of the inspecting or testing firm's invoice with each copy of the next application for payment.
   2. Pay invoice on approval by Architect.

D. Testing and Inspecting Allowances Schedule:

   Allowance No. 6: Testing & Inspection Allowance:
   Include the sum of **five thousand dollars ($ 5,000.00)** for payment of testing, or inspecting, laboratory services for concrete and structural welds as required by the pertinent specification sections.

E. Differences in cost will be adjusted by Change Order.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 01 31 00

ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Coordination and project conditions.

B. Preconstruction meeting.

C. Site mobilization meeting.

D. Progress meetings.

E. Preinstallation meetings.

1.02 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 with provisions for accommodating the items installed later.

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, plumbing 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.

1. The Contractor is to provide coordination drawings indicating size and locations of all mechanical, plumbing, fire protection and electrical work to confirm conflicts do not exist between systems. Submit four hard copies to the Architect for review prior to purchasing and fabrication of materials.

D. In finished areas except as otherwise indicated, conceal the pipes, ducts, and wiring within the construction. Coordinate the locations of fixtures and outlets with the finish elements.

E. Coordinate the completion and clean up of the Work of the separate Sections in preparation for Substantial Completion.

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

1.03 PRECONSTRUCTION MEETING

A. The Architect will schedule a meeting after a Purchase Order is issued to the Contractor by the RI State Department of Administration, Division of Purchases.

B. Attendance Required: Owner, Architect, and Contractor.

C. Agenda:
1. Execution of the Owner-Contractor Agreement.
2. Submission of the executed bonds and insurance certificates.
3. Distribution of the Contract Documents.
4. Submission of a list of Subcontractors, a list of products, schedule of values, and a progress schedule.
5. Designation of the personnel representing the parties in the Contract, and the Architect.
6. The procedures and processing of the field decisions, submittals, substitutions, applications for payments, proposal requests, Change Orders, and Contract closeout procedures.
7. Scheduling.

D. Record the minutes and distribute copies within two days after the meeting to the participants, with two copies to the Architect, the Owner, the participants, and those affected by the decisions made.

1.04 SITE MOBILIZATION MEETING

A. The Architect will schedule a meeting at the Project site prior to the Contractor's occupancy.

B. Attendance Required: The Owner, Architect, Special Consultants, and, 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 occupancy.
3. Construction facilities and controls provided by the Owner.
4. Temporary utilities provided by the Owner.
5. Survey and building layout.
6. Security and housekeeping procedures.
7. Schedules.
8. Application for payment procedures.
9. Procedures for testing.
10. Procedures for maintaining the record documents.
11. Requirements for start-up of the equipment.
12. Inspection and acceptance of the equipment put into service during the construction period.

D. Record the minutes and distribute the copies within two days after the meeting to the participants, with two copies to the Architect, Owner, participants, and those affected by the decisions made.

1.05 PROGRESS MEETINGS

A. Schedule and administer the meetings throughout the progress of the Work at maximum bi-weekly (14 day) intervals.

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, Architect, 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 the off-site fabrication and 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. Record the minutes and distribute the copies within two days after the meeting to the participants, with two copies to the Architect, Owner, participants, and those affected by the decisions made.

1.06 PREINSTALLATION MEETING

A. When required in the individual specification Sections, convene a preinstallation meeting at the site prior to commencing the Work of the Section.

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

C. Notify the Architect 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 two copies to the Architect, Owner, participants, and those affected by the decisions made.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Submittal procedures.

B. Construction progress schedules.

C. Proposed products list.

D. Method for Submission of Shop Drawings and Product Data

E. Product data.

F. Shop drawings.

G. Samples.

H. Design data.

I. Test reports.

J. Certificates.

K. Manufacturer's instructions.

L. Manufacturer's field reports.

M. Erection drawings.

1.02 SUBMITTAL PROCEDURES

A. Master List Submittal:
1. 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. Up date master list with each submission and response.
4. Issue copy of master list at least monthly to the Architect.

B. Transmit each submittal with a transmittal form.

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

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

E. Apply a Contractor's stamp, signed or initialed, 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.

F. Schedule submittals to expedite the Project, and deliver to the Architect at their business address. Coordinate the submission of related items.

G. For each submittal for review, allow fifteen (15) days excluding the delivery time to and from the Contractor.

H. Identify the variations from the Contract Documents and the Product or system limitations that may be detrimental to a successful performance of the completed Work.

I. Allow space on the submittals for the Contractor's and the Architect's review stamps.

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

K. Distribute copies of the reviewed submittals as appropriate. Instruct the parties to promptly report an inability to comply with the Contract requirements.

L. Submittals not requested will not be recognized or processed.

M. Method for Delivering Submittals
Method of electronic or hard copy delivery of various submittals is to be discussed with Architect at Preconstruction meeting and selected.
See three options below:

1. Hard Copy Submittals
When submitting hard copies for review, submit the number of copies that the Contractor requires, plus three copies the Architect will retain. Deliver directly to the Architect’s office with transmittal.
2. Electronic Submittals via email:
Email submittals in electronic format (PDF) to the Architect. Architect will return a file of reviewed submittal in electronic format to the Contractor for distribution to subcontractors, suppliers, fabricators, and others as necessary for proper performance of the Work. Assemble complete submittal package into a single indexed file incorporating submittal and cover sheet explaining project name, number, Architect, Contractor and submittal number.
3. Construction Project Management Software
Construction Project Management Software used by the Contractor for the submission of shop drawings and product data is to be approved by the Architect.

N. The Contractor will compensate the Architect and all consulting Engineers for services performed reviewing submittals beyond the original review and two follow-up reviews of the same product, material, sample or assembly. The compensation will be made through a credit change order that will reduce the total contract amount.

1.03 CONSTRUCTION PROGRESS SCHEDULES

A. Submit preliminary outline Schedules within fifteen (15) days after the date of receipt of a Purchase Order from the State of Rhode Island Department of Administration, Division of Purchases for coordination with the Owner's requirements. After a review, submit detailed schedules within fifteen (15) days modified to accommodate the revisions recommended by the Architect.

B. Submit revised Progress Schedules with each Application for Payment.

C. Distribute copies of the reviewed schedules to the Project site file, subcontractors, suppliers, and other concerned parties.

D. Instruct the recipients to promptly report, in writing, the problems anticipated by the projections indicated in the schedules.

E. Submit a computer generated horizontal bar chart with a separate line for each major portion of the Work or operation, or section of the Work, identifying the first workday of each week.

F. 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 the duration.

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

H. 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 Architect. Indicate the decision dates for selection of the finishes.

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

J. Revisions to Schedules:
   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.

1.04 PROPOSED PRODUCTS LIST

A. Within fifteen (15) days after the date of receipt of a Purchase Order from the State of Rhode Island Department of Administration, Division of Purchases, 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.

1.05 METHOD FOR SUBMISSION OF SHOP DRAWING AND PRODUCT DATA

A. Method of electronic or hard copy delivery of shop drawing and data submittals is to be discussed with Architect at Preconstruction meeting.
Use one of the three methods listed below:
1. Use an internet-based system agreed upon by the Architect and Contractor.
Comply with required transmittal and data formats using numbering system approved by Architect.
Assemble submittal package into a single indexed file incorporating submittal and cover sheet explaining project name, number, Architect, Contractor and submittal number.
2. Email an electronic format (PDF) copy to the Architect.
Comply with required transmittal and data formats using numbering system approved by Architect.
Assemble submittal package into a single indexed file incorporating submittal and cover sheet explaining project name, number, Architect, Contractor and submittal number.
3. Hard copies delivered to the Architect are to be submitted with the number of copies that the Contractor requires, plus three copies the Architect will retain.

B. All shop drawings 24” x 36” or larger are to be delivered to the Architect in hard copy format as noted in Method 3 above.

C. All submittals are to include a Contractor’s review stamp confirming approval prior to submission to the Architect.

D. The Architect will return the reviewed submittal to the Contractor for distribution to subcontractors, suppliers, fabricators, and others as necessary for proper performance of the Work.

E. Submit color samples on actual product material for final color selection by sending them via postal or delivery service directly to the Architect’s office.

1.06 PRODUCT DATA

A. Product Data: Submit to the Architect 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.

D. 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.

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

F. After receiving approved submittals, distribute in accordance with the Submittal Procedures article above and provide copies for record documents described in Section 01 78 00.

1.07 SHOP DRAWINGS

A. Shop Drawings: Submit to the Architect 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. Indicate the special utility and electrical characteristics, the utility connection requirements, and the location of utility outlets for service for functional equipment and appliances.

C. Submit the number of copies that the Contractor requires, plus three copies the Architect will retain.

1.08 SAMPLES

A. Samples: Submit to the Architect 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 Architect for aesthetic, color, or finish selection.
   2. Submit samples of the finishes, indicating colors, texture, and patterns for the Architect's selection.
   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 the number of samples specified in the individual specification Sections; the Architect will retain one sample.

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.

1.09 DESIGN DATA

A. Submit for the Architect's knowledge as contract administrator.

B. Submit for information for the limited purpose of assessing conformance with the information given and the design concept expressed in the Contract Documents.

1.10 TEST REPORTS

A. Submit for the Architect's knowledge as contract administrator.

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.

1.11 CERTIFICATES

A. When specified in the individual specification Sections, submit certification by the manufacturer, installation/application subcontractor, or the Contractor to the Architect, 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 Architect.

1.12 MANUFACTURER'S INSTRUCTIONS

A. When specified in the individual specification Sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to the Architect 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.

1.13 MANUFACTURER'S FIELD REPORTS

A. Submit reports for the Architect's benefit as contract administrator.

B. Submit the report in duplicate within thirty (30) days of observation to the Architect for information.

C. Submit for information for the limited purpose of assessing conformance with the information given and the design concept expressed in the Contract Documents.

1.14 ERECTION DRAWINGS

A. Submit drawings for the Architect's benefit as contract administrator.

B. Submit for information for the limited purpose of assessing conformance with the information given and the design concept expressed in the Contract Documents.

C. Data indicating inappropriate or unacceptable Work may be subject to action by the Architect.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

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SECTION 01 35 46

INDOOR AIR QUALITY REQUIREMENTS

PART 1- GENERAL

1.01 SUMMARY

A. IAQ Management during Construction
1. Develop and implement an Indoor Air Quality (IAQ) Management Plan for the construction phase of the building as follows:
a. During construction meet or exceed the recommended Control Measures of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guideline for Occupied Buildings under Construction, latest edition, Chapter 3.
b. Protect stored on-site or installed absorptive materials from moisture damage.
c. Replace all filtration media immediately prior to occupancy with MERV 8 filters or higher.

1.02 OVERVIEW

A. The intent of this IAQ Plan is to:
1. Minimize exposure of construction workers to air pollutants;
2. Prevent air pollutants from collecting in building systems and on building materials; and
3. Prevent air pollutants caused by construction from migrating into occupied spaces.

B. For the purposes of this plan, air pollutants are defined as: Particulates, Volatile organic compounds, Formaldehyde, Combustion emissions, Airborne bacteria and micro-organisms and Airborne inorganic compounds, such as ozone (from electric motors), metal fumes (from smoldering and welding), and ammonia and chlorine (from cleaning products).

PART 2- PRODUCTS

Not used

PART 3-EXECUTION

3.01 HVAC EQUIPMENT AND DUCT WORK

A. HVAC equipment and ductwork will be protected from dust and other pollutants via the following procedures:
1. Sealing Ductwork and Air Handling Equipment
a. Openings into installed or existing ductwork and air-handling equipment not in active use will be sealed using taped plastic, taped cardboard, or other reasonably air-tight coverings. Sealing will occur prior to, or immediately upon installation of the new ductwork or equipment. Regular walk-throughs will be conducted by the Contractor to check for damaged or displaced coverings. Repair or replacement of damaged or displaced coverings will occur immediately upon discovery, at the direction of the Contractor.
b. Construction work that generates air pollution will be avoided where ductwork or

air handling equipment is being installed. If visible air pollutants are present in a space where ductwork is to be installed, spot cleaning or other measures will be used to prevent ductwork or equipment contamination.

2. Use of Mechanical Systems during Construction
   a. Exhaust and makeup air supply systems:
      When a system is operated during construction, its filters will be replaced upon completion of construction with MERV 13 filters.
   b. Air handling systems will be subject to these provisions when operated during construction:
      1. The AHU will be protected with a temporary filter having a minimum rating of MERV 8, per ASHRAE 52.2.
      2. Distribution elements needing filters , including all return air ductwork, will be protected with temporary filters having a minimum rating of MERV 8 per ASHRAE 52.2 unless otherwise noted below.
   c. All components of the distribution on the return side will be protected, including but not limited to:
      1. The portion of the air handler upstream of the central fan;
      2. Return vents, ducts and shafts;
      3. VAV box intakes; and
      4. Transfer ducts.
   d. Components of the distribution system on the supply side will typically not need protection except if portions of the supply system become contaminated, coarse filters will be applied to completely cover supply outlets, to prevent the distribution of particulates into building spaces.
3. Filter Replacement and Tracking
   a. MERV 8 filters used for ductwork protection will be replaced on an as-needed basis, as determined by the Contractor.
   b. Upon completion, the MERV 8 filters used for ductwork protection will be discarded. New filters will be installed at all air handlers.

3.02 TEMPORARY LOCAL EXHAUST

A. Where available, operable vents and windows will be opened to ventilate the building during application of interior finishes when weather conditions are suitable. Spaces with fixed glazing or no windows will be ventilated by localized temporary exhaust, as described below, or by using building mechanical systems (described above).
   1. Local temporary exhaust will be accomplished using fans, duct extensions, and filters.
   2. Local temporary exhaust will not discharge near air intakes or other openings that lead into the building.

3.03 COVERING OR SEALING SOURCES OF POLLUTION

A. The following are rules that apply to materials that emit air pollution or odors:
   1. Containers containing wet materials will be covered whenever they are not in active use.
   2. Waste materials will be covered or sealed and regularly removed from the building.
   3. Absorptive materials or materials with an odor will be covered while moved through the building.
   4. Whenever possible, material containers will be disposed of with the covers on.
   5. Materials that require a surface coating to control pollutants or odors will be coated promptly.

3.04 CONTROLLING POLLUTION AT ENTRANCES

A. Measures will be taken to prevent pollutants from being tracked into interior spaces by workers or equipment. These will include temporary walk-off mats and floor protection.

3.05 PROTECTION OF STORED MATERIALS

A. Measures will be taken to minimize dust accumulation on material surfaces and the absorption of other pollutants by absorbent materials. The measures will include the following:
1. Materials will be handled and stored according to the manufacturer's recommendations.
2. Unwrapped absorbent materials will be shrink-wrapped if necessary.
3. Highly absorbent materials like duct liner, acoustic tile, carpeting, or insulation will be stored indoors in the original packaging, or covered and sealed.
4. Moderately porous materials like gypsum board will be stored indoors, wrapped or away from dust and materials prone to off-gas VOC's.
5. Framing lumber will be stored indoors whenever possible. If stored outdoors, the lumber will be covered with a water proof covering, stored off the ground, and located away from standing water.
6. Dense material like glass, metal framing, ductwork and equipment will be covered and kept dry.
7. If condensation forms on cold material, care will be taken not to expose it to dust or other particles. If exposed to pollution, housekeeping measures will be used promptly to clean the material before installation.

3.06 PREVENTING CONTAMINATION OF COMPLETED AREAS FROM WORK UNDER CONSTRUCTION

A. When work is completed in an area, the area will be protected from pollutants generated in other parts of the building still under construction. One or more of the following methods of pathway interruption will be used:
1. Erecting barriers between completed areas and areas still under construction
2. Where present, doors and windows will be closed and locked between completed portions of the building and portions of the building still under construction.

3.07 HOUSEKEEPING

A. The following housekeeping measures will be employed throughout construction:
1. A regular housekeeping schedule will be instituted. Cleaning measures and frequency will be selected according to the pollutants generated in a space.
2. Low-odor cleaning agents will be used.
3. Spills of water or solvent will be cleaned up immediately.
4. Attention will be given to cleaning hidden or hard-to-reach surfaces, such as wall cavities, tops of door, ledges, and behind water closets.

3.08 SCHEDULING

A. Construction activities shall be scheduled such that construction and occupancy do not overlap in time. Provide adequate time for carpet, paint and other finishes time to off-gas prior to occupancy.

END OF SECTION

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SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Quality control and control of installation.

B. Verification of Credentials and Licenses.

C. Safety Awareness Policy

D. Tolerances

E. References.

F. Mock-up requirements.

G. Testing and inspection services.

H. Product Substitutions

I. State Mandated Structural Special Inspections

J. Manufacturers' field services.

1.02 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 the manufacturers' instructions, including each step in sequence.

C. When the manufacturers' instructions conflict with the Contract Documents, request a clarification from the Architect 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.

H. Field measurements

1. Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication scheduled with construction progress to avoid construction delays.

I. The Contractor, by approving and submitting Shop Drawings, Product Data, Samples, and similar submittals thereby represent that they have determined and verified all dimensions, quantities, field dimensions, relations to existing work, coordination with work to be installed later, coordination with information on previously accepted Shop Drawings, Product Data, Samples, or similar submittals and verification of compliance with all the requirements of the Contract Documents. The accuracy of all such information is the responsibility of the Contractor. In reviewing Shop Drawings, Product Data, Samples, and similar submittals the Architect shall be entitled to rely upon the Contractor's representation that such information is correct and accurate.

1.03 VERIFICATION OF CREDENTIALS AND LICENSES

A. All persons employed on the project site must have appropriate and current credentials and licenses in their possession, at the project site, for the work they are performing.

B. 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.

C. State resident inspectors will also be reviewing Contractor's Certified Monthly Payroll Records for conformance with RI State Prevailing Wage Rate requirements.

D. Those persons without the appropriate credentials and licenses will be subject to dismissal from the project site.

1.04 SAFETY AWARENESS POLICY

A. In accordance with Rhode Island General Laws, Title 28, S28-20-35 5.1 Safety awareness program required. (Effective January 1, 2002.) all contractors who bid on municipal and state construction projects with a total project cost of One Hundred Thousand Dollars($100,000.00) or more, shall have an OSHA “ten hour safety construction program” for their on-site employees. The training shall utilize instructors trained by the Occupational Safety Health Administration, using OSHA approved curriculum. Graduates shall receive a card from the U. S. Department of Labor Occupational Safety and Health Administration certifying the successful completion of the training course. The director of the Rhode Island Department of Labor and Training shall promulgate rules, regulations and penalties to enforce provisions of this section.

B. The Contractor is required to conform to all applicable OSHA requirements on this project.

1.05 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 Architect before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

1.06 REFERENCES

A. For products or workmanship specified by association, trade, or other consensus standards, 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 Architect before proceeding.

E. Neither the contractual relationships, duties, nor responsibilities of the parties in the Contract, nor those of the Architect, shall be altered from the Contract Documents by mention or inference otherwise in reference documents.

1.07 MOCK-UP REQUIREMENTS

A. Tests will be performed under the provisions identified in this Section and identified in the respective product specification Sections.

B. Assemble and erect the specified items with the specified attachment and anchorage devices, flashing, seals, and finishes.

C. Accepted mock-ups shall be a comparison standard for the remaining Work.

D. Where the mock-up has been accepted by the Architect and is specified in the product specification Sections to be removed, remove the mock-up and clear the area when directed to do so by the Architect.

1.08 TESTING AND INSPECTION SERVICES

A. The Contractor will submit the name of an independent firm to the Architect for approval by the Owner, to perform the testing and inspection services. These tests will be paid for out of the Testing Allowance stated in Section 01 21 00.

B. The independent firm will perform the tests, inspections and other services specified in the individual specification Sections.
   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 an 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 Architect.

D. Reports will be submitted by the independent firm to the Architect 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 Architect and the independent firm 24 hours prior to the expected time for operations requiring services.
   2. Arrange 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 is to be performed by the same independent firm on instructions by the Architect. Payment for the re-testing or re-inspection will be the Contractor’s responsibility.

H. Agency Responsibilities:
   1. Test samples of mixes submitted by the Contractor.
   2. Provide qualified personnel at the site. Cooperate with the Architect 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 Architect and the Contractor of observed irregularities or non-conformance of the Work or products.
   6. Attend the preconstruction meetings and the progress meetings.

I. Agency Reports: After each test, promptly submit two copies of the report to the Architect and to the Contractor. When requested by the Architect, 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.
   3. Agency or laboratory may not assume any duties of the Contractor.
   4. Agency or laboratory has no authority to stop the Work.

1.09 PRODUCT SUBSTITUTIONS

A. After the Contract has been executed, the Owner and the Architect will consider a formal request for the substitution of products in place of those specified only under the conditions set forth in the General Requirement. (Division 1 of the Specifications).

B. By making requests for substitutions the Contractor:
   1 represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
   2. represents that the Contractor will provide the same warranty for the substitution that the Contractor would for that specified;
   3. certifies that the cost data presented is complete and includes all related costs under this Contract except the Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent; and
   4. will coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

C. The product substitution will be considered equal to the item so named or described if, in the opinion of the Architect:
   1. it is least equal in quality, durability, appearance, strength and design;
   2. it performs at least equally the function imposed by the general design for the work;
   3. it conforms substantially, even with deviations, to the detailed requirements for the items as indicated by the specifications.

   Any structural or mechanical changes made necessary to accommodate substituted equipment will be at the expense of the Contractor or Subcontractor responsible for the work item.

D. The Contractor shall be responsible for determining that all materials furnished for the Work meet all requirements of the Contract Documents. The Architect will require the Contractor to produce reasonable evidence that a material meets such requirements, such as certified reports of past tests by qualified testing laboratories, reports of studies by qualified experts, or other evidence which, in the opinion of the Architect, would lead to a reasonable certainty that any material used, or proposed to be used, in the Work meets the requirements of the Contract Documents. Provide a side-by-side list comparing all component criteria, and critical test results for Architect to determine equality. All such data shall be furnished at the Contractor's expense. This provision shall not require the Contractor to pay for periodic testing of different batches of the same material, unless such testing is specifically required by the Contract Documents to be performed at the Contractor's expense.

E. If the Contractor proposes to use a material which, while suitable for the intended use, deviates in any way from the detailed requirements of the Contract Documents, the Contractor shall inform the Architect in writing of the nature of such deviations at the time the material is submitted for approval, and shall request written approval of the deviation from the requirements of the Contract Documents.

F. In requesting approval of deviations or substitutions, the Contractor shall provide, upon request, evidence leading to a reasonable certainty that the proposed substitution or deviation will provide a quality of result at least equal to that otherwise attainable. If, in the opinion of the Architect, the evidence presented by the Contractor does not provide as sufficient basis for such reasonable certainty, the Architect may reject such substitution or deviation without further investigation.

G. The Contract Documents are intended to produce a building of consistent character and quality of design. All components of the building including visible items of mechanical and electrical equipment have been selected to have a coordinated design in relation to the overall appearance of the building. The Architect shall judge the design and appearance of proposed substitutes on the basis of their suitability in relation to the overall design of the Project, as well as for their intrinsic merits. The Architect will not approve as equal to materials specified proposed substitutes which, in the Architect's opinion, would be out of character, obtrusive, or otherwise inconsistent with the character or quality of design of the Project. In order to permit coordinated design of color and finishes the Contractor shall, if required by the Architect, furnish the substituted material in any color, finish, texture, or pattern which would have been available from the manufacturer originally specified, at no additional cost to the Owner.

H. Any additional cost, or any loss or damage arising from the substitution of any material or any method for those originally specified shall be borne by the Contractor, notwithstanding approval or acceptance of such substitution by the Architect, unless such substitution was made at the written request or direction of the Architect.

1.10 STATE MANDATED STRUCTURAL SPECIAL INSPECTIONS

A. Included following this Specification Section is the state mandated Statement of Special Inspections from the Structural Engineer of Record and the Schedule of Special Inspection Services for this project.

1.11 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 Architect thirty (30) days in advance of the required observations. The Observer is subject to approval by the Architect.

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 01330 - SUBMITTAL PROCEDURES, MANUFACTURERS' FIELD REPORTS article.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not used.

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STATEMENT OF SPECIAL INSPECTIONS

Project:	R.I. State House Elevator Modernization
Location:	Providence, RI
Owner:	State of Rhode Island
Architect of Record:	Saccoccio & Associates, Inc.
Structural Engineer of Record:	Structures Engineering and Design, llc

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This Statement of Special Inspections is submitted as a condition for permit issuance in accordance with the Special Inspection requirements of the State of RI Building Code. It includes a Schedule of Special Inspection Services applicable to this project as well as the name of the Special Inspections Administrator and the identity of other approved agencies intended to be retained for conducting these inspections.

The Special Inspections Administrator shall keep records of all inspections and shall furnish inspection reports to the Building Official, Structural Engineer of Record and Architect of Record. Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official, Structural Engineer of Record and Architect of Record. The Special Inspection program does not relieve the Contractor of his or her responsibilities.

Interim reports shall be submitted on a periodic basis to the Building Official, Owner, Structural Engineer of Record and Architect of Record.

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

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

Prepared by:

Jeremy J. Page
Print Name

Signature

11/7/2018
Date

JEREMY JOSEPH PAGE
No. 8554
REGISTERED
PROFESSIONAL ENGINEER
(STRUCTURAL I)

Owner's Authorization

Building Official's Acceptance

SCHEDULE OF SPECIAL INSPECTIONS

The following sheets comprise the required schedule of special inspections for this project. The construction divisions which require special inspections for this project are as follows:

- Cast-in-Place Concrete
- Structural Steel
- Metal Deck

Inspection Agents	Firm	Address
1. Special Inspections Administrator	To be hired by owner	-
2. Testing Laboratory and Field Inspector	To be hired by owner	-
3. Structural Engineer of Record	Structures Engineering and Design, llc	23 Burrill Rd Harrisville, RI 02830

Note: The qualifications of all personnel performing Special Inspection activities are subject to the approval of the Building Official. The Special Inspections Administrator and testing agent shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.

The credentials of all inspectors, administrators and testing technicians shall be provided if requested.

It is recommended that the person administering the Special Inspections program be a Professional Engineer experienced in the design of buildings.

Division 3 - Concrete
IBC 2012, Table 1705.3

Item	Agent No.	Scope	Frequency
Mix Design	2	Verify use of required design mix	Periodic
Material Certification	2		Periodic
Reinforcement Installation	2	Inspection of reinforcing steel and placement Inspection of reinforcing steel welding in accordance with IBC Table 1705.2.2, Item 2b.	Periodic Periodic
Anchor Rods	2	Inspection of anchors cast in concrete. Inspection of anchors post-installed in hardened concrete.	Periodic Periodic
Concrete Placement	2	Inspection of concrete placement for proper application techniques. Inspect formwork for shape, location and dimensions of the concrete member being formed.	Continuous Periodic

Sampling and Testing of Concrete	2	At the time of fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete. Verification of in-situ concrete strength.	Continuous Periodic
Curing and Protection	2	Inspection for maintenance of specified curing temperature and techniques.	Periodic

Division 5 - Steel
AISC 360-10, Chapter N

Inspection Task Prior to Welding		
Item	Agent No.	Frequency
Welding procedure specifications (WPSs) available.	2	Each
Manufacturer certifications for welding consumables available	2	Each
Material identification (type/grade)	2	Random
Welder identification system	2	Random
Fit-up of groove welds (including joint geometry) • Joint preparation • Dimensions (alignment, root opening, root face, bevel) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location) • Backing type and fit (if applicable)	2	Random Random
Configuration and finish of access holes	2	Random
Fit-up of fillet welds • Dimensions (alignment, gaps at root) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location)	2	Random
Check welding equipment	2	Random
Inspection Tasks During Welding		
Use of Qualified Welders	2	Random
Control and handling of welding consumables Packaging Exposure control.	2	Random
No welding over cracked tack welds	2	Random
Environmental conditions Wind speed within limits Precipitation and temperature	2	Random

Welding Procedures Followed Settings on welding equipment Travel speed Selected welding materials Shielding gas type/flow rate Preheat applied Interpass temperature maintained (min./max.) Proper position (F, V, H, OH) Intermix of filler metals avoided unless Approved	2	Random
Welding techniques Interpass and final cleaning Each pass within profile limitations Each pass meets quality requirements	2	Random
Inspection Tasks After Welding		
Welds Cleaned	2	Random
Size, length, and location of welds	2	Each
Welds meet visual acceptance criteria Crack prohibition Weld/base-metal fusion Crater cross section Weld profiles Weld size Undercut Porosity	2	Each
Arc Strikes	2	Each
k – area When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3 in. of the weld.	2	Each
Backing removed and weld tabs removed (if required)	2	Each
Backing removed, weld tabs removed and finished, and fillet welds added (if required)	2	Each
Placement of reinforcing or contouring fillet welds (if required)	2	Each
Repair activities	2	Each
Document acceptance or rejection of welded joint/member	2	Each

Inspection Tasks Prior to Bolting		
Item	Agent	Frequency
Manufacture's certification available for fastener materials	2	Each
Fasteners marked in accordance with ASTM requirements	2	Random
Proper fasteners selected for the joint detail (grade, type, bolt length if threads are to be excluded from shear plane)	2	Random
Proper bolting procedure selected for joint detail O O	2	Random

Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirements	2	Random
Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used	2	Each
Proper storage provided for bolts, nuts, washers and other fastener components	2	Random

Inspection Tasks During Bolting		
Item	Agent	Frequency
Fastener assemblies, of suitable condition, placed in all holes and washers (if required) are positioned as required	2	Random
Joint brought to the snug-tight condition prior to the pretensioning operation	2	Random
Fastener component not turned by the wrench prevented from rotating	2	Random
Fasteners are pretensioned in accordance with the RCSC Specification, progressing systematically from the most rigid point toward the free edges	2	Random

Inspection Tasks After Bolting		
Item	Agent	Frequency
Document acceptance or rejection of bolted connections	2	Each

Composite Structures Prior to Concrete Placement		
Item	Agent	Frequency
Material identification of reinforcing steel (Type/Grade)	2	Random
Determination of carbon equivalent for reinforcing steel other than ASTM A706	2	Random
Proper reinforcing steel size, spacing and orientation	2	Random
Reinforcing steel has not been rebent in the field	2	Random
Reinforcing steel has been tied and supported as required	2	Random
Required reinforcing steel clearances have been provided	2	Random
Composite member has required size	2	Random

Composite Structures During Concrete Placement		
Item	Agent	Frequency
Concrete: Material identification (mix design, compressive strength, maximum large aggregate size, maximum slump)	2	Random
Limits on water added at the truck or pump	2	Random
Proper placement techniques to limit segregation	2	Random

Other Steel Inspections		
Item	Agent	Frequency

Anchor rods and other embedments supporting structural steel Verify the diameter, grade, type, and length of the anchor rod or embedded item, and the extent or depth of embedment prior to placement of concrete.	2	Each
Fabricated steel or erected steel frame Verify compliance with the details shown on the construction documents, such as braces, stiffeners, member locations and proper application of joint details at each connection.	2	Random

Steel Roof and Floor Decks		
Item	Agent	Frequency
Material verification of cold-formed steel deck Confirm that identification markings are provided to conform to ASTM standards specified on approved construction documents. Verify material with manufacturer's certified test reports. test reports.	2	Each
Floor and roof deck welds Visual inspection to confirm that welds meet acceptance criteria of AWS D1.3 and verify welder qualifications.	2	Each

Nondestructive testing of welded joints: AISC 360-10, Section N5, Part 5.

Inspection of High Strength Bolting: AISC 360-10, Section N5, Part 6.

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Temporary Utilities:
1. Temporary electricity.
2. Temporary lighting for construction purposes.
3. Temporary heating.
4. Temporary ventilation.
5. Temporary water service.
6. Temporary sanitary facilities.

B. Construction Facilities:
1. Temporary Storage.
2. Field Office
3. Temporary Scaffolding
4. Hoisting
5. Vehicular access.
6. Parking.
7. Progress cleaning and waste removal.

C. Temporary Controls:
1. Barriers
2. Enclosures
3. Dust control.
4. Noise control.
5. Pollution control.
6. Fire Detection

1.02 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. Permanent convenience receptacles may be utilized during construction.

1.03 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

A. Provide and maintain lighting for construction operations to achieve a minimum lighting level of 2 watt/sq ft.

B. Permanent building lighting may be utilized during construction.

1.04 TEMPORARY HEATING

A. Existing heating equipment may be used.

B. The Owner will pay the cost of heat. Exercise measures to conserve energy. Utilize the Owner's existing heat plant, extend and supplement with temporary heat devices as needed to maintain the specified conditions for construction operations.

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.

1.05 TEMPORARY VENTILATION

A. Ventilate the enclosed area to achieve a curing of materials, to dissipate humidity, and to prevent the accumulation of dust, fumes, vapors, or gases.

B. Utilize the existing ventilation equipment. Extend and supplement the equipment with temporary fan units as required to maintain clean air for construction operations.

1.06 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.

1.07 TEMPORARY SANITARY FACILITIES

A. The existing designated sanitary facilities may be used during construction operations. Maintain daily in a clean and sanitary condition. Coordinate with the Owner.

B. At the end of construction, return the facilities to the same or better condition as the original condition.

1.08 TEMPORARY STORAGE

A. 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.

B. Existing building use for storage is not permitted. The Contractor will coordinate exact location of storage units with the Owner prior to the start of construction.

C. Maintenance and Cleaning
1. Maintain the approach walks to the storage free of mud, water, and snow.

D. Removal: At the completion of the Work remove all trailers, debris and materials. Restore the areas to original condition.

1.09 FIELD OFFICE

A. Existing building space may be used for a field office in location designated by the Owner.

1.10 TEMPORARY SCAFFOLDING

A. Contractor is to provide temporary scaffolding as necessary for construction purposes.

B. The scaffolding is to be braced properly, assembled and installed as required to meet all OSHA requirements.

C. Remove from the site all scaffolding, associated bracing and supports upon completion of construction. Repair all surfaces and site to original condition.

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 Engines, fuel, delivery and removal, mobilization, staging, protection of grades and surfaces, and equipment. All surfaces damaged by hoisting equipment or crane are to be cleaned and repaired to match original condition. All damaged grass is to receive loam and seed to match existing.

B. Elevator Use: The existing passenger elevators may be used by the Contractor to move smaller materials, supplies, tools, etc.

C. Method of transporting all equipment to the rooftop is the Contractor's responsibility and must be reviewed and approved by the Owner. There is very limited access through the building to the rooftop.
The building surfaces are to be thoroughly protected from damage due to construction to the Owner's satisfaction. Any damages to the existing building due to construction are the Contractor's responsibility and shall be restored to original condition to the Owner's satisfaction.
The Contractor is responsible to adhere to all OSHA requirements.

1.12 VEHICULAR ACCESS

A. Provide unimpeded access for emergency vehicles. Maintain 20 foot width driveways with turning space between and around combustible materials.

B. Provide and maintain access to fire hydrants and control valves free of obstructions.

C. Use designated existing on-site roads for construction traffic.

1.13 PARKING

A. The Contractor is to coordinate construction personnel parking with the Owner. If the Owner cannot provide an adequate amount of parking it is the Contractor's responsibility to arrange for (and pay for, if necessary) construction personnel parking.

B. Use of designated existing on-site streets and driveways for construction traffic is permitted. Tracked vehicles are not allowed on paved areas.

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. Collect and remove waste materials, debris, and rubbish from the site periodically, weekly, or daily, as necessary to prevent an on-site accumulation of waste material, debris, and rubbish, and dispose off-site.

C. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.15 BARRIERS

A. Provide barriers to prevent unauthorized entry to the construction areas and to protect existing facilities from damage due to construction operations, or demolition.

1.16 ENCLOSURES

A. Provide temporary fire-resistant polyethylene dust drapes as required to separate the work areas from the Owner occupied areas, to prevent penetration of dust and moisture into the Owner occupied areas, and to prevent damage to the existing materials and equipment. Seal perimeter as required.

1.17 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.

1.18 NOISE CONTROL

A. Provide methods, means, and facilities to minimize noise produced by the construction operations.

1.19 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.

1.20 FIRE DETECTION

A. Before beginning any construction that can potentially trigger the existing fire detection system, notify the Owner and request to temporarily disconnect the system in the specific areas of construction, for as long as may be necessary.

PART-2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

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SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Products.

B. Product delivery requirements.

C. Product storage and handling requirements.

D. Product options.

E. Product substitution procedures.

1.02 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.

1.03 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.

1.04 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.

1.05 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 with a Provision for Substitutions:
Submit a request for substitution for any manufacturer not named in accordance with the following article.

C. Products Specified by Naming Three or More Manufacturers with No Substitutions:
Products of one of the manufacturers listed and meeting the specifications, no options or substitutions allowed.

1.06 PRODUCT SUBSTITUTION PROCEDURES

A. Throughout these Specifications, types of materials may be specified by manufacturer's name, and product information in order to establish standards of quality and performance and not for the purpose of limiting competition.

B. Inclusion of additional names of manufacturers, other than the Basis of Design manufacturer, does not imply acceptability of standard products from those manufacturers listed. All manufacturers listed shall conform, with modification as necessary, to criteria established by the specification for performance, efficiency, materials, finishes and special accessories along with, at a minimum, matching the Basis of Design product.

C. No substitutions will be considered prior to receipt of Bids unless written request for approval (by hard copy or email) has been received by the Architect at least 10 calendar days prior to the Bid due

date. If the product substitution is approved prior to receipt of the Bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals announced in any other manner.

It will be the Architect's and Owner's option to consider review and acceptance of a substitution following award of the contract. For all requests made after award of the contract, the Architect will review the requests with reasonable promptness and notify the Contractor in writing of the decision to accept or reject the substitution.

D. A request for substitution of any manufacturer or product not named in a specification section is to be submitted in accordance with the following.
   1. Document each request with complete data substantiating the compliance of a proposed Substitution with the Contract Documents.
   2. A request constitutes a representation that the Contractor:
      a. Has investigated the proposed product and determined that it is equal to or superior in all respects to the specified product.
      b. Will provide the same warranty for the substitution as for the specified product.
      c. Will coordinate the installation and make changes to other Work that may be required for the Work to be complete with no additional cost to the Owner.
      d. Waives claims for additional costs or time extension that may subsequently become apparent.
      e. Will coordinate installation with all affected trade Contractors, specialty Contractors and the like and will be responsible for any and all costs which may arise as a result of this substitution.
      f. Will reimburse the Owner and the Architect for review or redesign services associated with re-approval by the authorities having jurisdiction.

E. Substitutions will not be reviewed when a substitution is 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:
   1. Submit the Request for Substitution letter, Shop Drawings, Product Data, and the certified test results attesting to the proposed product equivalence.
   2. The Contractor shall submit a separate request for each product substitution.
   3. Provide direct comparison between the specified product and the proposed substitution. The burden of proof is on the proposer.
      Supporting data to be submitted to permit a fair evaluation of the proposed substitution must address:
      a. Performance;
      b. Capacity;
      c. Efficiency;
      d. Safety;
      e. Function;
      f. Appearance;
      g. Quality and durability;
      h. Finish;
      i. Warranty terms and conditions;

j. Directly compare, in table format, all listed testing agency performance requirements;
k. Delivery times and effect on schedules, if any;
l. Changes in space requirements or affect on other elements of work, if any;
m. Availability of maintenance service and source of replacement materials, if applicable.

4. The Architect will also judge the design and appearance of a proposed substitute based on its suitability in relation to the overall design of the project, as well as its essential merits. The Architect will not approve product substitutions that in their reasonable opinion would be out of character for the design of the project.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 01 70 00

EXECUTION REQUIREMENTS

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Examination.

B. Preparation.

C. Protection of adjacent construction.

D. Cutting and patching.

E. Special procedures.

F. Progress cleaning and waste removal.

G. Final cleaning.

H. Starting and adjusting of systems.

I. Demonstration and Instructions.

J. Protecting Installed Construction.

1.02 EXAMINATION

A. Acceptance of Conditions:

1. Verify that the existing applicable site conditions, substrates, or substrate surfaces are acceptable or meet the specific requirements of the individual specifications Sections, for subsequent Work to proceed.
2. NOTE:
   The Contractor is required to confirm at the beginning of the project that the existing elevator controls will allow one elevator to be shutdown, out of service, and the other elevator can remain in service. If the existing controls do not allow this, the Contractor is to submit a plan of action to accomplish the work without such capability. This plan must be reviewed and approved by the Owner.
3. Verify that the existing substrate is capable of structural support or attachment of new Work being applied or attached.
4. Examine and verify specific conditions described in the individual specifications Sections.
5. Verify that utility services are available, of the correct characteristics, and in the correct locations.
6. Beginning of new Work, that relies upon the quality and proper execution of the Work of a preceding trade, means acceptance of that preceding Work as appropriate for the proper execution of subsequent Work.

7. 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.

1.03 PREPARATION

A. Clean substrate surfaces prior to applying the next material or substance.

B. Seal cracks or openings of the substrate prior to applying the next material or substance.

C. Apply a manufacturer required or recommended substrate primer, sealer, or conditioner 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 the product manufacturers.

1.04 PROTECTION OF ADJACENT CONSTRUCTION

A. Protect the existing adjacent properties and provide special protection where specified in the individual Specification Sections.

B. Provide protective coverings at wall, projections, jambs, sills, and soffits of the existing openings.

C. Protect the 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. Repair adjacent properties damaged by the construction operations to the original condition to the satisfaction of the Owner.

E. Prohibit unnecessary traffic from the existing landscaped areas.

F. Restore the grassed landscaped areas damaged by the construction operations to a full healthy growth by installing loam and sod.

1.05 CUTTING AND PATCHING

A. Submit a written request in advance of the 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 the element.
4. Visual qualities of sight-exposed elements.
5. Existing construction, or the Work of separate contractor.

B. Execute cutting, fitting, and patching including excavation and fill, to complete the Work, and to:
1. Fit the several parts together, to integrate with the 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 the elements of Work for penetrations of mechanical and electrical Work.

C. Execute Work by methods that will avoid damage to other Work, and provide proper surfaces to receive patching and finishing.

D. Cut masonry, concrete, and other rigid materials using a masonry saw or core drill.

E. Restore the Work with new Products in accordance with the requirements of Contract Documents.

F. Fit Work tight to the pipes, sleeves, ducts, conduits, and other penetrations through surfaces.

G. Maintain the integrity of the wall, ceiling, or floor construction; completely seal voids.

H. At the penetration of fire rated partition, ceiling, or floor construction completely seal the voids with a fire rated or fire resistant material to the full thickness of the penetrated element as required to equal the rating of the surrounding construction.

I. Refinish surfaces to match the adjacent finishes. For continuous surfaces refinish to nearest intersection; for an assembly refinish the entire unit.

J. Identify any hazardous substance or conditions exposed during the Work to the Architect for a decision or remedy.

1.06 SPECIAL PROCEDURES

A. Materials: As specified in the product Sections; match the existing with new products, or salvaged products as appropriate, for patching and extending work.

B. Employ a skilled and experienced installer to perform alteration work.

C. Cut, move, or remove items as necessary for access to the 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 the materials as specified for finished Work.

E. Remove the debris and abandoned items from the area and from concealed spaces.

F. Prepare the surface and remove surface finishes to provide the installation of new Work and finishes,

G. Close the openings in exterior surfaces to protect the existing Work from the weather and extremes of temperature and humidity.

H. Remove, cut, and patch the Work in a manner to minimize damage and to provide a means of restoring products and finishes to the original or specified condition.

I. Refinish the existing visible surfaces to remain in renovated rooms and spaces to the specified condition for each material, with a neat transition to the adjacent finishes.

J. Where new Work abuts or aligns with the existing, provide a smooth and even transition. Patch the Work to match the existing adjacent Work in texture and appearance.

K. When finished surfaces are cut so that a smooth transition with the new Work is not possible, terminate the existing surface along a straight line at a natural line of division and submit a recommendation to the Architect for review.

L. Where a change of plane of 1/4 inch or more occurs, submit a recommendation for providing a smooth transition to the Architect for review.

M. Patch or replace the portions of existing surfaces which are damaged, or showing other imperfections.

N. Finish surfaces as specified in the individual product Sections or as indicated on the Drawings.

1.07 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 the debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Sweep and vacuum clean the interior areas prior to the start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove the waste materials, debris, and rubbish from the site periodically or weekly and dispose of off-site.

E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.08 FINAL CLEANING

A. Execute final cleaning of areas affected by the Work prior to the final project assessment.

B. Clean the equipment and fixtures to a sanitary condition using cleaning materials appropriate to the surface and material being cleaned.

C. Clean or replace filters of operating equipment as directed by the Architect.

D. Clean the site; sweep the paved areas, rake clean the landscaped surfaces.

E. Remove the waste and surplus materials, rubbish, and the construction facilities from the site.

1.09 STARTING AND ADJUSTING OF SYSTEMS

A. Coordinate the schedule for the starting and adjusting of various equipment and systems.

B. Notify the Architect and the Owner seven days prior to the starting and adjusting of each item.

C. Verify that each piece of equipment or system has been checked for the proper lubrication, drive rotation, belt tension, control sequence, or other conditions which may cause damage.

D. Verify that the tests, meter readings and the 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 the starting and adjusting under the supervision of the responsible Contractor's personnel or manufacturer's representative, in accordance with the manufacturer's instructions.

G. Adjust the operating Products and equipment to ensure smooth and unhindered operation.

H. When specified in the individual specifications Section, require the manufacturer to provide the authorized representative to be present at the site to inspect, check, and approve the equipment or system installation prior to starting, and to supervise the placing of equipment or system in operation.

I. Submit a written report in accordance with Section 01 40 00 that the equipment or system has been properly installed and is functioning correctly.

1.10 DEMONSTRATION AND INSTRUCTIONS

A. Demonstrate the operation and maintenance of Products to the Owner's personnel two weeks prior to the date of Substantial Completion.

B. For equipment or systems requiring seasonal operation, perform a demonstration for the other season within six months.

C. Utilize the operation and maintenance manuals as the basis for instruction. Review the manuals with the Owner's personnel in detail to explain all aspects of the operation and maintenance.

D. Demonstrate the start-up, operation, control, adjustment, trouble shooting, servicing, maintenance, and shutdown of each item of equipment at a scheduled or agreed upon time, at the equipment or system location.

E. Prepare and insert additional data in the operations and maintenance manuals when the need for additional data becomes apparent during the instruction.

1.11 PROTECTING INSTALLED CONSTRUCTION

A. Protect the installed Work and provide special protection where specified in the individual specification sections.

B. Provide temporary and removable protection for the installed products. Control activity in the 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 the installed Work damaged by construction operations, as directed by the Architect.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 01 74 19

WASTE MATERIALS MANAGEMENT AND RECYCLING

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of each prime Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 WASTE MANAGEMENT GOALS FOR THE PROJECT

A. The Owner has established that this Project shall generate the least amount of waste possible and that processes shall be employed that ensure the generation of as little waste as feasible including prevention of damage due to mishandling, improper storage, contamination, inadequate protection or other factors as well as minimizing overall packaging and poor quantity estimating.

B. Of the inevitable waste that is generated, the waste materials designated in this specification shall be salvaged for reuse or recycling. Waste disposal in landfills or incinerators shall be minimized. On new construction projects this means careful recycling of job site waste, on demolition projects this also means careful removal for salvage.

1.3 SUMMARY:

A. This Section includes required salvage and recycling of the following waste materials and applies to all such listed waste materials produced during the course of this Contract:
1. Concrete, Masonry, and Other Inert Fill Material: Concrete, brick, rock, clean soil not intended for other on-site use, broken up asphalt pavement containing no ABC stone, clay, concrete, or other contaminants, and other inert material.
2. Metals: Metal scrap including iron, steel, copper, brass, and aluminum.
3. Untreated Wood: Unpainted, untreated dimensional lumber, plywood, oriented strand board, masonite, particleboard, and wood shipping pallets.
4. Gypsum Wallboard Scrap: Excess drywall construction materials including cuttings, other scrap, and excess materials.
5. Cardboard: Clean, corrugated cardboard such as used for packaging, etc.
6. Paper: Discarded office refuse such as unwanted files, correspondence, etc.
7. Plastic Buckets: Containers for various liquid and semi-solid or viscous construction materials and compounds.
8. Beverage Containers: Aluminum, glass, and plastic containers.
9. Other Mixed Construction and Demolition Waste: Solid waste resulting solely from construction, remodeling, repair, or demolition operations on pavement, buildings, or other structures exclusive of waste materials listed herewith. 11. Materials to be salvaged if possible:
   a. Dimensioned Lumber and Heavy Timbers.
   b. Structural Steel.
   c. Heritage architectural elements such as mantle pieces, columns, etc.
   d. Brick and block.
   e. Electric Equipment and Light Fixtures.
   f. Windows, doors and frames.

B. Non-Recyclable Waste: Collect and segregate non-recyclable waste for delivery to a permitted landfill site.
   1. Mixed Solid Waste: Solid waste usually collected as a municipal service, exclusive of waste materials listed above.

1.4 HAZARDOUS MATERIAL SUSPICION

A. If, during the course of construction, the Contractor suspects a material to contain asbestos, all work involving the material is to be stopped and the Architect notified immediately of the suspicion. Until the material is confirmed to be safe or tested and determined to be an asbestos containing material, the Contractor is to assume it contains asbestos and is to avoid contact. Upon notification of its composition the Architect will determine the course of action and inform the Contractor accordingly.

1.5 DEFINITIONS:

A. Waste Materials are defined as large and small pieces of the materials indicated which are excess to the contract requirements and generally include materials which are to be salvaged from existing construction and items of trimmings, cuttings and damaged goods resulting from new installations, which can not be effectively used in the Work.

1.6 SUBMITTALS:

A. Show compliance with regulations specified under "Quality Assurance" article below. Include a list of recycling facilities to which indicated recyclable materials will be distributed for disposal. Identify materials that are not recyclable or otherwise conservable that must be disposed of in a landfill or other means acceptable under governing State and local regulations. List permitted landfills and/or other disposal means to be employed. Indicate any instances where compliance with requirements of this specification does not appear to be possible and request resolution from the Architect.

B. Delivery Receipts: Provide delivery receipts for waste materials salvaged and sent to permitted waste materials processors or recyclers within 48 hours of delivery that indicate the location and name of firm accepting recyclable waste materials, types of materials, net weights of each type, date of delivery and value of materials.

C. Application for Payments: The Contractor shall submit with each Application for Payment a summary of waste materials, recycled, salvaged and disposed of using a form generated by the Contractor and approved by the Architect. Failure to submit this information shall render the Application for Payment incomplete and shall delay Payment. The Summary shall contain the following information: For each material salvaged and recycled from the Project, include the amount (in cubic yards or tons or in the case of salvaged items state quantities by number, type and size of items) and the destination (i.e. recycling facility, used building materials yard). For each material land filled or incinerated from the Project, include the amount (in cubic yards or tons) of material and the identity of the landfill, incinerator or transfer station.

1.7 QUALITY ASSURANCE:

A. Regulatory Requirements: Comply with all applicable requirements of the federal, state or local authorities concerning Management of Construction, Demolition, Inert, and Yard Trash Debris

B. Disposal Sites, Recyclers, and Waste Materials Processors: Use only facilities properly permitted by the State and by local authorities where applicable.

C. Implementation: Include a discussion of waste management and recycling in worker orientation. Provide on-site instruction on appropriate separation, handling, recycling, and salvaging methods to be used by all parties at the appropriate stages of the work at the site. Include waste management and recycling discussion in pre-fabrication meetings with subcontractors and fabricators. Also include discussion of waste management and recycling in regular job meetings and job safety meetings conducted during the course of work at the site.

1.8 STORAGE AND HANDLING:

A. Site Storage: Remove all indicated recyclable materials from the work location to approved containers daily. Failure to remove waste materials will be considered cause for withholding payment and termination of Contract.

B. Position covered containers for recyclable waste materials at a designated location on the Project Site. Select a location for the recyclable materials containers separated from that of general waste and rubbish containers. Provide separate collection containers for a minimum of the following materials:
1. Untreated lumber.
2. Paper, paper products, and cardboard.
3. Plastics.
4. Metals.
5. Glass.
6. Other salvageable materials.

C. Change out loaded containers for empty ones as demand requires, but not less than weekly.

D. Handling: Deposit all indicated recyclable materials in the containers in a clean (no mud, adhesives, solvents, petroleum contamination), debris-free condition. Do not deposit contaminated materials into the containers until such time as such materials have been cleaned.

E. If the contamination chemically combines with the material so that it can not be cleaned, do not deposit into the recycle containers. Comply disposal with all legal and regulatory requirements.

1.9 PROJECT/SITE CONDITIONS:

A. Environmental Requirements: Transport recyclable waste materials from the Work Area to the recycle containers and carefully deposit in the containers without excess noise and interference with other activities, in a manner to minimize noise and dust. Reclose container covers immediately after materials are deposited.
1. Do not place recyclable waste materials on the ground adjacent to a container.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 WASTE MANAGEMENT:

A. General: Implement waste management procedures throughout the life of this Contract.

B. Source Separation: Separate, store, protect, and handle at the project site all identified recyclable and salvageable waste products to prevent contamination of materials and maximize recyclability and salvageability of materials.

C. Arrange for the regular collection, transport from the site, and delivery to respective approved recycling centers of indicated recyclable waste materials. Maintain records accessible to the Architect for verification of construction waste materials recycling.

D. Delivery Receipts: Arrange for timely pickups from the site or deliveries to approved recycling facilities of designated waste materials to keep construction site clear and prevent contamination of recyclable materials. Keep and maintain records of all deliveries to recycling facilities and all pickups of waste materials at the site by others as specified above.

3.2 RECYCLABLE WASTE MATERIALS HANDLING:

A. General: The following paragraphs supplement handling requirements for various materials identified for classification and recycling listed in Part 1 "Summary" article above.

B. Paper: Classify and handle waste paper goods as follows:
1. Bond Paper: As generally found in the construction offices and used for specifications, correspondence, copiers, printers and FAX machines. Collect in a separate container at each workstation and deposit loose in the appropriate recycle container daily.
2. Newsprint: Newspapers and tabloid style advertising. Collect in a single location and deposit daily in the appropriate recycle container.
3. Prints (drawings): Set up a single location for collection. Roll together to minimize space. Deposit daily in the appropriate recycle container.

C. Packaging materials:
1. Cardboard and paperboard cartons and boxes: Knock-down, fold flat and deposit in the appropriate recycle container.
2. Paper packing materials (separators, stiffeners, etc.) shall be placed in the same container.
3. Newsprint, used as packing (shredded or whole), shall be deposited in the recyclable container for newsprint.
4. Plastic (polystyrene peanuts and other shapes) shall be deposited in the recyclable container for plastics.
5. Metal and plastic banding materials shall be deposited in the appropriate container.

D. Metals: Cut all items to lengths and sizes to fit within the container provided, when necessary. Where there is sufficient quantity of a specific recyclable waste item (for example; salvaged metal roofing or duct work), make special arrangements for items to be bundled, banded or tied, and stack in a designated location for a special pick-up. Coordinate all special arrangements with the Architect.

E. Plastics: Collect recyclable plastics (polystyrene and others specifically marked for recycling) daily from work areas and deposit in designated containers.

F. Glass: Remove waste glass products (sheet, bottles, etc.) daily from the work area and deposit in designated containers. Glass containing imbedded wire (typical in some fire rated doors having glazed lights) is not recyclable.

G. Other Items: Where recyclability classification of any given waste material is unclear, verify with the Architect.

END OF SECTION

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SECTION 01 78 00

CLOSEOUT SUBMITTALS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Closeout procedures.

B. Quality assurance.

C. Maintenance service.

D. Owner's Manuals

E. Operations and maintenance manuals.

F. Materials and finishes manuals.

G. Equipment and systems manuals

H. Spare parts and maintenance materials.

I. Product warranties and product bonds.

J. Project Record documents.

K. Project close out inspections – Punch List

1.02 CLOSEOUT PROCEDURES

A. 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 Architect's review.

B. Provide submittals to Architect that are required by the governing or other authorities, including the following closeout documents:
1. AIA Document G706 - Contractor's Affidavit of Payment of Debts and Claims, 1994 Edition.
2. AIA Document G706A - Contractor's Affidavit of Release of Liens, 1994 Edition.
3. AIA Document G707 - Consent of Surety to Final payment, 1994 Edition.

C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

D. The Owner will occupy all portions of the building as specified in Section 01 11 00.

E. Provide submittals to Architect that are required by governing or other authorities, including abatement invoices. Failure to include correctly prepared abatement invoices will delay issuing of final payment.

1.03 QUALITY ASSURANCE

A. Employ personnel assembling submittals experienced in the maintenance and the operation of the described products and systems.

1.04 MAINTENANCE SERVICE

A. Submit a contract for furnishing service and maintenance of the components indicated in the specification Sections for one year from date of Substantial Completion, or during the warranty period, whichever period of time is the longest.

B. Provide for an examination of the system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.

C. Include a systematic cleaning, examination, adjustment, and lubrication of the components. Repair or replace the parts whenever required. Use the parts produced by the manufacturer of the original component.

D. Do not assign or transfer the maintenance service to an agent or Subcontractor without the prior written consent of the Owner.

1.05 OWNER'S MANUALS

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 maximum 2 inch size, D side three - 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 when multiple binders are required.

C. Internally subdivide the binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.

D. Drawings: Provide with reinforced punched binder tab. Bind in with the text; fold the larger drawings to the size of the text pages.

E. Submit one copy of the completed volumes for review. They will be reviewed and returned with the Architect's comments. Revise the content of the manuals as required prior to final submission.

F. Submit <u>one</u> set of revised final volumes in final form.

G. Submit one copy of all the manuals for Operations and Maintenance, Materials and Finishes, and Equipment and Systems in PDF electronic format on a Compact Disc or DVD.

1.06 OPERATIONS AND MAINTENANCE MANUALS

A. Contents: Prepare the Table of Contents for each volume, with each product or system description identified, typed on white paper, in three parts as follows:

1. Part 1: Directory, listing the names, addresses, and telephone numbers of the Architect, Contractor, Subcontractors, and major equipment suppliers.

2. 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:
   a. Significant design criteria.
   b. List of equipment.
   c. Parts list for each component.
   d. Operating instructions.
   e. Maintenance instructions for equipment and systems.
   f. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.

3. Part 3: Project documents and certificates, including the following:
   a. Shop drawings and product data.
   b. Air and water balance reports.
   c. Certificates.
   d. Photocopies of warranties and bonds.
   e. MSDS for applicable products.

1.07 MATERIALS AND FINISHES MANUALS

A. 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.

B. 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.

C. Include Material Safety Data Sheets (MSDS) for all applicable products. These are required to provide both workers and emergency personnel with the proper procedures for handling or working with a particular substance. MSDS's include information such as physical data (melting point, boiling point, flash point etc.), toxicity, health effects, first aid, reactivity, storage, disposal, protective equipment, and spill/leak procedures.

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.

1.08 EQUIPMENT AND SYSTEMS MANUALS

A. For equipment, or component parts of equipment put into service during construction and operated by the Owner, submit documents within 10 days after acceptance.

B. 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 engineering data and tests, and complete nomenclature and model number of replaceable parts.

C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; by label machine.

D. Include color-coded wiring diagrams as installed.

E. 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.

F. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

G. Include a servicing and lubricating schedule, and a list of lubricants required.

H. Include the manufacturer's printed operation and maintenance instructions.

I. Include sequence of operation by the controls manufacturer.

J. Include the original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

K. Include control diagrams by the controls manufacturer as installed.

L. Include the Contractor's coordination drawings, with color-coded piping diagrams as installed.

M. Include charts of valve tag numbers, with the location and function of each valve, keyed to the flow and control diagrams.

N. Include a list of the original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

O. Additional Requirements: As specified in the individual product specification Sections.

P. Include a listing in the Table of Contents.

1.09 SPARE PARTS AND MAINTENANCE PRODUCTS

A. Furnish spare parts, maintenance, and extra products 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.

1.10 PRODUCT WARRANTIES AND PRODUCT BONDS

A. Obtain warranties and bonds executed in duplicate by the responsible subcontractors, suppliers, and manufacturers, within 10 days after the completion of the applicable item of work.

B. Execute and assemble the transferable warranty documents and bonds from the subcontractors, suppliers, and manufacturers.

C. Verify that the documents are in the proper form, contain full information, and are notarized.

D. Co-execute the submittals when required.

E. Submit two copies in D side three ring binders with a durable plastic cover.

F. Submit prior to the final Application for Payment.

G. Time of Submittals:
1. For equipment or component parts of equipment put into service during construction with the Owner's permission, submit the documents within 10 days after acceptance.
2. Make other submittals within 10 days after the Date of Substantial Completion, prior to the final Application for Payment.
3. For items of Work for which acceptance is delayed beyond the Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty or bond period.

1.11 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. Construction 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 Construction Drawings and Shop Drawings: Legibly mark each item to record the actual construction including:
   1. Field changes of dimension and detail.
   2. Details not on the original Contract drawings.

G. Legibly marked Specifications, and legibly marked Record Construction Drawings and Shop Drawings shall constitute the Project Record Documents in paper form.

H. At completion of the Work of the Contract, the Architect will furnish the Contractor with an electronic copy of the construction drawings in AutoCad format, and the Project Manual content in Adobe Acrobat PDF format.

I. Transfer the information from the Project Record Documents onto the electronic documents (Drawings in AutoCad and Project Manual in Adobe Acrobat PDF format copied onto a CD or DVD ROM disc) and return the electronic copy to the Architect along with the Project Record Documents in paper form. Provide two copies of both the electronic copy and the paper copy. All paper copies are to be bound and printed full size.

J. The Architect will review the Project Record Documents and compare them for accuracy, and if necessary return them to the Contractor for final correction. At the time of final submission, submit a claim for the final Application for Payment.

K. No review or receipt of record of Project Record Documents by the Architect 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 to the extent they are in accordance with the Contract Documents

L. 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.

M. Abatement Invoices: Application for Final Payment must be accompanied with shipping documents for disposal of the abated material as specified in Section 02 81 13.

N. At completion of the Work of the Contract submit to the Architect a summary of waste materials, recycled, salvaged and disposed of as outlined in Section 01 74 19. The Summary shall contain the following information: For each material salvaged and recycled from the Project, include the amount (in cubic yards or tons or in the case of salvaged items state quantities by number, type and size of items) and the destination (i.e. recycling facility, used building materials yard). For each material land filled or incinerated from the Project, include the amount (in cubic yards or tons) of material and the identity of the landfill, incinerator or transfer station.

O. At completion of the Work of the Contract submit to the Architect (as outlined in Section 01690) delivery receipts for waste materials salvaged and sent to permitted waste materials processors or recyclers that indicate the location and name of firm accepting recyclable waste materials, types of materials, net weights of each type, date of delivery and value of materials.

P. At completion of the Work of the Contract submit to the Architect a table indicating information pertaining to construction materials used on the project that includes the following:

Name of the material
Amount of low emissive VOC
Percentage of pre-consumer recycled content
Percentage of post consumer recycled content
Distance product was manufactured from construction site (Greater or less than 500 miles)

Also submit written documentation substantiating the information in the form of a manufacturer's cut sheet, material safety data sheet or letter from the manufacturer.

1.12 PROJECT CLOSE OUT INSPECTIONS - PUNCH LIST

A. When the work has reached such a point of completion that the building or buildings, equipment, apparatus or phase of construction or any part thereof required by the Owner for occupancy or use can be so occupied and used for the purpose intended, the Contractor, prior to notification to the Architect, shall make a preliminary inspection of the Work to insure that all requirements of the Contract have been met and the Work is substantially complete and is acceptable.
Upon such notification, the Owner or the Architect and the consulting Engineers shall make detailed inspection of the Work to insure that all requirements of the Contract have been met and the Work is complete and is acceptable.

B. Within ten (10) calendar days of notification, the Architect and the consulting Engineers will perform the inspection and a copy of the report of the inspection shall be furnished to the Contractor so that the Contractor may proceed without delay with any part of the Work found to be incomplete or defective. The Contractor shall complete the items listed within thirty (30) calendar days and notify the Owner and Architect

C. When the items appearing on the report of inspection have been completed or corrected, the contractor shall so advise the Owner and the Architect. After receipt of this notification, the Owner or the Architect and consulting Engineers shall reinspect and inform the Contractor of any remaining items.

A copy of the report of the final inspection containing all remaining contract exceptions, omissions and incompletions shall be furnished to the Contractor within seven (7) calendar days of notification.

D. The Contractor shall within fourteen (14) calendar days complete the items listed on the inspection report and provide notification of completion and all remaining contract exception, omissions and incompletions from the Contractor, the Owner and the Architect and consulting Engineers will reinspect the Work to verify completion of the exception items appearing on the report of final inspection.

Upon completion of reinspections, the Architect will prepare a certificate of final acceptance or will furnish to the Contractor a copy of the report of the Architect's reinspection detailing Work that is incomplete or obligations that have been fulfilled but are required for final acceptance.

The Contractor shall compensate the Architect and all consulting Engineers for services performed on Punch List inspections beyond the original inspection and two reinspections of the same area through a credit change order reducing the total contract amount.

E. Upon Substantial Completion of the Work, the Contractor will be paid all retainage, less one hundred fifty percent (150%) of the value attributable to "punch list" work. As items on the punch list are completed, the Contractor will be paid one hundred fifty percent (150%) of their value at the next progress payment.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION

SECTION 02 41 19

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. All material, labor and equipment required for demolition and removal of existing structures and items as shown on the drawings and as may be required to permit the proper installation of any new work.

1.02 QUALITY ASSURANCE

A. Perform work in accordance with all applicable local and state Codes.

1.03 SEQUENCING

A. Coordinate with the occupancy of the owner under provisions of Section 01 11 00.

B. Avoid interference with the use of and passage to and from adjacent buildings and facilities.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.01 PREPARATION

A. Inspection

1. The contractor shall inspect the entire site, premises and all objects designated to be removed and those to be preserved.
2. Locate all existing utility lines and determine the requirements for their protection or abandonment.

B. Notification

1. Notify the owner at least two full working days prior to commencing the work of this section.

C. Verification

1. Prior to commencing the work of this section, verify with the owner and the Architect all objects to be removed and all objects to be preserved.

D. Protection

1. Protect all objects and utilities designated to remain as required. Active utilities shall not be interrupted.
2. Provide shoring and bracing for the support of existing structures, that are to remain in place, where necessary to prevent collapse of structures.
3. Dust control shall be as necessary to prevent the spread of dust and flying particles of during performance of the work of this section. Provide taped fire resistant polyethylene dust barriers as required. Thoroughly moisten all surfaces as required.
4. The contractor shall be responsible to repair or replace all items designated to remain that are damaged due the surrounding demolition.

3.02 CLEANING

A. Clean work under provisions of Section 01 70 00.

B. Remove all debris and trash from the site on a daily basis and dispose of in accordance with all local and state Codes.

C. All removed items scheduled to be retained shall be given to the owner for their use.

D. Burning at the site will not be permitted.

3.03 SCHEDULE

A. Finishes

1. Remove all existing floor finishes, base materials and adhesives in all areas scheduled to receive new finishes unless instructed otherwise. Patch and repair all substrate damaged by removal as required to install new finish.
2. Remove all finishes as indicated on the drawings and as required by new construction. Repair or replace substrate damaged by removals.

B. Concrete

1. Assume all concrete is reinforced.
2. Use a saw cut on all concrete to be removed that butts concrete to remain
3. Always remove concrete in small sections
4. Provide core boring through concrete floors and roofs as required to install new utilities.
5. Remove all concrete slabs as indicated on the drawings.

C. Structural Steel

1. Remove all structural steel as indicated on the drawings and as required by new construction.
2. Remove all appurtenances and fasteners from the steel being demolished.

D. Doors

1. Remove all doors, hardware and fasteners as indicated on the plans or as required by new construction.

E. Roofing

1. Remove roofing materials and flashing as indicated on the drawings and in the project manual.
2. Provide temporary weather protection at all portions that are open to the weather.
3. Coordinate roofing demolition with the new roofing specification.

F. Mechanical and Electrical.

1. Refer to the mechanical and electrical drawings and specifications for equipment removal requirements.
2. Provide cutting of holes for all mechanical and electrical as required.
3. Remove all existing fixtures and equipment scheduled to receive new fixtures and equipment unless instructed otherwise. Patch and repair all substrate and finishes damaged by removal of items as required to match existing or to prepare for a new finish as scheduled. Dispose of all removed fixtures and equipment unless noted otherwise.

END OF SECTION

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SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mix design, placement procedures, and finishes.

B. Related Sections include the following:
   1. Division 2 Section "Cement Concrete Pavement" for concrete pavement and walks.
   2. Division 3 Section "Concrete Toppings" for metallic and nonmetallic concrete floor toppings.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, and silica fume.

1.4 SUBMITTALS

A. Product Data: For each type of manufactured material and product indicated.

B. Design Mixes: For each concrete mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
   1. Indicate amounts of mix water to be withheld for later addition at Project site.

C. Steel Reinforcement Shop Drawings: Details of fabrication, bending, and placement, prepared according to ACI 315, "Details and Detailing of Concrete Reinforcement." Include material, grade, bar schedules, stirrup spacing, bent bar diagrams, arrangement, and supports of concrete reinforcement. Include special reinforcement required for openings through concrete structures.

D. Shoring and Reshoring: Indicate proposed schedule and sequence of stripping formwork, shoring removal, and installing and removing reshoring.

E. Welding Certificates: Copies of certificates for welding procedures and personnel.

F. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials:

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed concrete Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for formwork and shoring and reshoring installations that are similar to those indicated for this Project in material, design, and extent.

C. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
   1. Manufacturer must be certified according to the National Ready Mixed Concrete Association's Certification of Ready Mixed Concrete Production Facilities.

D. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 to conduct the testing indicated, as documented according to ASTM E 548.
   1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

E. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, each aggregate from one source, and each admixture from the same manufacturer.

F. Welding: Qualify procedures and personnel according to AWS D1.4, "Structural Welding Code--Reinforcing Steel."

G. ACI Publications: Comply with the following, unless more stringent provisions are indicated:
   1. ACI 301, "Specification for Structural Concrete."
   2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

H. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Meetings."
   1. Before submitting design mixes, review concrete mix design and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
      a. Contractor's superintendent.
      b. Independent testing agency responsible for concrete design mixes.
      c. Concrete subcontractor.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle steel reinforcement to prevent bending and damage.
   1. Avoid damaging coatings on steel reinforcement.
   2. Repair damaged epoxy coatings on steel reinforcement according to ASTM D 3963/D 3963M.

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
   1. Plywood, metal, or other approved panel materials.
   2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
      a. High-density overlay, Class 1, or better.
      b. Medium-density overlay, Class 1, or better, mill-release agent treated and edge sealed.
      c. Structural 1, B-B, or better, mill oiled and edge sealed.
      d. B-B (Concrete Form), Class 1, or better, mill oiled and edge sealed.

B. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.

C. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
   1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

D. Form Ties:
   1. Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
   2. Furnish units that will leave no corrodible metal closer than 1-1/2" inch to the plane of the exposed concrete surface.

2.2 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

B. Epoxy-Coated Reinforcing Bars: ASTM A 775/A 775M, and as follows:
   1. Steel Reinforcement: ASTM A 615/A 615M, Grade 60, deformed.

C. Plain-Steel Wire: ASTM A 82, as drawn.

2.3 REINFORCEMENT ACCESSORIES

A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete or fiber-reinforced concrete of greater compressive strength than concrete, and as follows:

B. Joint Dowel Bars: Stainless Steel Bars. Cut bars true to length with ends square and free of burrs.

2.4 CONCRETE MATERIALS

A. Portland Cement for foundation walls and footings: ASTM C 150, Type I.
   1. Fly Ash: ASTM C 618, Class F.

B. Portland Cement for elevated slabs: ASTM C 150, Type I or II.
   1. Fly Ash: ASTM C 618, Class F.

C. Blended Hydraulic Cement: ASTM C 595M, Type I (PM), pozzolan-modified portland cement.

D. Normal-Weight Aggregate: ASTM C 33, uniformly graded, and as follows:
   1. Class: Severe weathering region, but not less than 3S.
   2. Nominal Maximum Aggregate Size: 3/4 inch.

E. Water: Potable and complying with ASTM C 94.

2.5 ADMIXTURES

A. General: Admixtures certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material and to be compatible with other admixtures and cementitious materials. Do not use admixtures containing calcium chloride.

B. Air-Entraining Admixture: ASTM C 260.

C. Water-Reducing Admixture: ASTM C 494, Type A.

D. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.

E. Water-Reducing and Accelerating Admixture: ASTM C 494, Type E.

F. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.

G. Corrosion-Inhibiting Admixture: Commercially formulated, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete.
   1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
   2. Products: Subject to compliance with requirements, provide one of the following:
      a. Catexol 1000CL; Axim Concrete Technologies.
      b. MCI 2000 or MCI 2005; Cortec Corporation.
      c. DCI or DCI-S; W. R. Grace & Co., Construction Products Div.
      d. Rheocrete 222+; Master Builders, Inc.
      e. FerroGard-901; Sika Corporation.

2.6 WATERSTOPS

A. Flexible Rubber Waterstops: CE CRD-C 513, for embedding in concrete to prevent passage of fluids through joints. Factory fabricate corners, intersections, and directional changes.
   1. Profile: As indicated.

B. Flexible PVC Waterstops: CE CRD-C 572, for embedding in concrete to prevent passage of fluids through joints. Factory fabricate corners, intersections, and directional changes.
   1. Profile: As indicated.

C. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Rubber Waterstops:
   a. Greenstreak.
   b. Progress Unlimited Inc.
   c. Westec Barrier Technologies; Div. of Western Textile Products, Inc.
2. PVC Waterstops:
   a. Greenstreak.
   b. Meadows: W. R. Meadows, Inc.
   c. Vinylex Corporation.

D. Self-Expanding Strip Waterstops: Manufactured rectangular or trapezoidal strip, sodium bentonite or other hydrophylic material for adhesive bonding to concrete.
1. Products: Subject to compliance with requirements, provide one of the following:
   a. Volclay Waterstop-RX; Colloid Environmental Technologies Co.
   b. Hydrotite; Greenstreak.
   c. Mirastop; Mirafi Moisture Protection, Div. of Royal Ten Cate (USA), Inc.

2.7 VAPOR RETARDERS

A. Vapor Retarder: ASTM E 1745, Class B, five-ply, nylon- or polyester-cord-reinforced, high-density polyethylene sheet; 15 mils thick.
1. Available Product: Subject to compliance with requirements, a product that may be incorporated into the Work includes, but is not limited to, "Griffolyn T-85" by Reef Industries Inc.

B. Fine-Graded Granular Material: Clean mixture of crushed stone, crushed gravel, and manufactured or natural sand; ASTM D 448, Size 10, with 100 percent passing a No. 4 sieve and 10 to 30 percent passing a No. 100 sieve; meeting deleterious substance limits of ASTM C 33 for fine aggregates.

2.8 FLOOR AND SLAB TREATMENTS

A. Penetrating Liquid Floor Treatment: Chemically reactive, waterborne solution of inorganic silicate or siliconate materials and proprietary components; odorless; colorless; that penetrates, hardens, and densifies concrete surfaces.

2.9 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry.

C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

D. Water: Potable.

E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.

2.10 RELATED MATERIALS

A. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

C. Epoxy-Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class and grade to suit requirements, and as follows:
   1. Types I and II, non-load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.
   2. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

D. Reglets: Fabricate reglets of not less than 0.0217-inch- thick galvanized steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.

E. Dovetail Anchor Slots: Hot-dip galvanized steel sheet, not less than 0.0336 inch thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.

2.11 CONCRETE MIXES

A. Prepare design mixes for each type and strength of concrete determined by either laboratory trial mix or field test data bases, as follows:
   1. Proportion normal-weight concrete according to ACI 211.1 and ACI 301.

B. Use a qualified independent testing agency for preparing and reporting proposed mix designs for the laboratory trial mix basis.

C. Footings and Foundation Walls: Proportion normal-weight concrete mix as follows:
   1. Compressive Strength (28 Days): 3000 psi.
   2. Maximum Water-Cementitious Materials Ratio: 0.48
   3. Maximum Slump: 4 inches.
   4. Maximum Slump for Concrete Containing High-Range Water-Reducing Admixture: 6 inches after admixture is added to concrete with 2- to 4-inch slump.

D. Suspended Slabs: Proportion light-weight concrete mix as follows:
   1. Minimum Compressive Strength: 3,000 psi at 28 days.
   2. Minimum Cementitious Materials Content: 520 lb/cu. yd.
   3. Maximum concrete density: 115 lbs. per cubic foot
   4. Slump Limit: 5 inches.
   5. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 3/8-inch nominal maximum aggregate size.
   6. Air Content: Do not allow air content of troweled finished floors to exceed 3 percent.
   7. Aggregate size: 3/4” inch.

E. Cementitious Materials: For concrete exposed to deicers, limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 requirements.

F. Maximum Water-Cementitious Materials Ratio: 0.45 for concrete required to have low water permeability.

G. Maximum Water-Cementitious Materials Ratio: 0.42 for concrete exposed to deicers or subject to freezing and thawing while moist.

H. Maximum Water-Cementitious Materials Ratio: 0.42 for corrosion protection of steel reinforcement in concrete exposed to chlorides from deicing chemicals, salt, saltwater, brackish water, seawater, or spray from these sources.

I. Air Content: Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content as follows within a tolerance of plus 1 or minus 1.5 percent, unless otherwise indicated:
   1. Air Content: 6 percent for 3/4-inch- nominal maximum aggregate size.

J. Do not air entrain concrete to trowel-finished interior floors and suspended slabs. Do not allow entrapped air content to exceed 3 percent.

K. Admixtures: Use admixtures according to manufacturer's written instructions.
   1. Use water-reducing admixture or high-range water-reducing admixture (superplasticizer) in concrete, as required, for placement and workability.
   2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
   3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
   4. Use corrosion-inhibiting admixture in concrete mixes where indicated.

2.12 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.13 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94, and furnish batch ticket information.

PART 3 - EXECUTION

3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until concrete structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
   1. Class B, 1/4 inch.

D. Construct forms tight enough to prevent loss of concrete mortar.

E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical. Kerf wood inserts for forming keyways, reglets, recesses, and the like, for easy removal.
   1. Do not use rust-stained steel form-facing material.

F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

H. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

I. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

J. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

K. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use Setting Drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
   1. Install anchor bolts, accurately located, to elevations required.
   2. Install reglets to receive top edge of foundation sheet waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
   3. Install dovetail anchor slots in concrete structures as indicated.

3.3 REMOVING AND REUSING FORMS

A. General: Formwork, for sides of beams, walls, columns, and similar parts of the Work, that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete provided concrete is hard enough to not be damaged by form-removal operations and provided curing and protection operations are maintained.

B. Leave formwork, for beam soffits, joists, slabs, and other structural elements, that supports weight of concrete in place until concrete has achieved the following:
   1. At least 70 percent of 28-day design compressive strength.
   2. Determine compressive strength of in-place concrete by testing representative field- or laboratory-cured test specimens according to ACI 301.

C. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

D. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.4 SHORES AND RESHORES

A. Comply with ACI 318, ACI 301, and recommendations in ACI 347R for design, installation, and removal of shoring and reshoring.

3.5 VAPOR RETARDERS

A. Vapor Retarder: Place, protect, and repair vapor-retarder sheets according to ASTM E 1643 and manufacturer's written instructions.

B. Fine-Graded Granular Material: Cover vapor retarder with fine-graded granular material, moisten, and compact with mechanical equipment to elevation tolerances of plus 0 inch or minus 3/4 inch.

3.6 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
   1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain specified minimum concrete cover. Do not tack weld crossing reinforcing bars.
   1. Shop- or field-weld reinforcement according to AWS D1.4, where indicated.
   2. All welded wire-fabric on slabs shall be supported by concrete bricks or chair supports at not more than 4’-0” on center each way.
   3. All reinforcing shall be securely tied prior to casting of concrete so as to avoid displacement of reinforcing. Contractor is responsible for ensuring that necessary measures are taken, whether shown in contract documents or not, to ensure that reinforcing is adequately tied and/or supported.
   4. “Laying in” of reinforcing during casting of concrete is not permitted.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire fabric in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

F. Epoxy-Coated Reinforcement: Use epoxy-coated steel wire ties to fasten epoxy-coated reinforcement. Repair cut and damaged epoxy coatings with epoxy repair coating according to ASTM D 3963/D 3963M.

3.7 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
   1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
   2. Form from preformed galvanized steel, plastic keyway-section forms, or bulkhead forms with keys, unless otherwise indicated. Embed keys at least 1-1/2 inches into concrete.
   3. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
   4. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
   5. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Dowel Joints: Install dowel sleeves and dowels or dowel bar and support assemblies at joints where indicated.
   1. Use dowel sleeves or lubricate or asphalt-coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.8 WATERSTOPS

A. Flexible Waterstops: Install in construction joints as indicated to form a continuous diaphragm. Install in longest lengths practicable. Support and protect exposed waterstops during progress of Work. Field-fabricate joints in waterstops according to manufacturer's written instructions.

B. Self-Expanding Strip Waterstops: Install in construction joints and at other locations indicated, according to manufacturer's written instructions, bonding or mechanically fastening and firmly pressing into place. Install in longest lengths practicable.

3.9 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Do not add water to concrete during delivery, at Project site, or during placement.
   1. Do not add water to concrete after adding high-range water-reducing admixtures to mix.

C. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete to avoid segregation.

D. Deposit concrete in forms in horizontal layers no deeper than 24 inches and in a manner to avoid inclined construction joints. Place each layer while preceding layer is still plastic, to avoid cold joints.

1. Consolidate placed concrete with mechanical vibrating equipment. Use equipment and procedures for consolidating concrete recommended by ACI 309R.
2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the vibrator. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix constituents to segregate. Do not vibrate forms or reinforcement.

E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
2. Maintain reinforcement in position on chairs during concrete placement.
3. Screed slab surfaces with a straightedge and strike off to correct elevations.
4. Slope surfaces uniformly to drains where required.
5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, free of humps or hollows, before excess moisture or bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.

G. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R and as follows, when hot-weather conditions exist:
1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.10 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defective areas repaired and patched. Remove fins and other projections exceeding ACI 347R limits for class of surface specified.

B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8 inch in height.

C. Rubbed Finish: Apply the following to smooth-formed finished concrete:
   1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
   2. Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.
   3. Cork-Floated Finish: Wet concrete surfaces and apply a stiff grout. Mix one part portland cement and one part fine sand with a 1:1 mixture of bonding agent and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Compress grout into voids by grinding surface. In a swirling motion, finish surface with a cork float.

D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.11 FINISHING FLOORS AND SLABS

A. General: Comply with recommendations in ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
   1. Apply scratch finish to surfaces indicated and to surfaces to receive concrete floor topping or mortar setting beds for ceramic or quarry tile, portland cement terrazzo, and other bonded cementitious floor finishes.

B. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.
   1. Apply float finish to surfaces indicated, to surfaces to receive trowel finish, and to floor and slab surfaces to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.
   2. Finish surfaces to the following tolerances according to ASTM E1155 for a randomly trafficked floor surface.

C. Trowel Finish: After applying float finish, apply first trowel finish and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
   1. Apply a trowel finish to surfaces indicated and to floor and slab surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin film-finish coating system

2. Finish surfaces to the following tolerances, measured within 24 hours according to ASTM E 1155/E 1155M for a randomly trafficked floor surface:
   a. Specified overall values of flatness, F(F) 35; and levelness, F(L) 25, relative to specified slope; with minimum local values of flatness, F(F) 24; and levelness, F(L) 17, relative to specified slope; for slabs-on-grade.

D. Trowel and Fine-Broom Finish: Apply a partial trowel finish, stopping after second troweling, to surfaces indicated and to surfaces where ceramic or quarry tile is to be installed by either thickset or thin-set method. Immediately after second troweling, and when concrete is still plastic, slightly scarify surface with a fine broom.

E. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.
   1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

3.12 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates of manufacturer furnishing machines and equipment.

D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items. Cast-in inserts and accessories as shown on Drawings. Screed, tamp, and trowel-finish concrete surfaces.

3.13 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with recommendations in ACI 305R for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing by one or a combination of the following methods:

D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces, by one or a combination of the following methods:
   1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
      a. Water.
      b. Continuous water-fog spray.
      c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
   2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3.14 LIQUID FLOOR TREATMENTS

A. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
   1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension in solid concrete but not less than 1 inch in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
   2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
   3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.

B. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
   1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
   2. After concrete has cured at least 14 days, correct high areas by grinding.
   3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
   4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
   5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor

elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.

6. 6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least 3/4 inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mix as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

C. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

D. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.15 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified independent testing and inspecting agency to sample materials, perform tests, and submit test reports during concrete placement according to requirements specified in this Article.

B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mix exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
   a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mix, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
2. Slump: ASTM C 143; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; ASTM C 173, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
5. Unit Weight: ASTM C 567, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
6. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of four standard cylinder specimens for each composite sample.
7. Compressive-Strength Tests: ASTM C 39; test two laboratory-cured specimens at 7 days, two at 28 days and hold the ffifth for possible future testing.

a. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at age indicated.

C. Strength of each concrete mix will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.

D. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-and 28-day tests.

E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.

F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42 or by other methods as directed by Architect.

END OF SECTION

SECTION 05 12 00

STRUCTURAL STEEL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes the following:
   1. Structural steel.
   2. Base, leveling, and bearing plates.
   3. Architecturally exposed structural steel.
   4. Grout.

B. Work Furnished but Installed by Others
   1. Anchorages cast into concrete and masonry.
   2. Lintels installed in masonry.

C. Related Sections include the following:
   1. Division 3, Cast-In-Place Concrete
   2. Division 5, Steel Deck
   3. Division 9, Painting

1.03 DEFINITIONS

A. Structural Steel: Elements of structural-steel frame, as classified by AISC's "Code of Standard Practice for Steel Buildings and Bridges," that support design loads.

B. Architecturally Exposed Structural Steel: Structural steel designated as architecturally exposed structural steel in the Contract Documents or shown as exposed through the use of building sections, wall sections, and elevations.

1.04 REFERENCE STANDARDS

A. AISC – Manual of Steel Construction, Allowable Stress Edition, 9th Edition
B. AISC – Code of Standard Practice for Steel Buildings and Bridges
C. AISC – Specification for Structural Joints using ASTM A325 or A490 Bolts
D. ASTM A6 – General Requirements for Rolled Steel Plates, Shapes, Sheet Piling and Bars for structural use
E. ASTM A36 – Carbon Structural Steel
F. ASTM A53 – Welded and Seamless Steel Pipe
G. ASTM A108 – Steel Bars, Carbon, Cold Finished Standard Quality
H. ASTM A123 – Zinc Hot Galvanized Coatings on Iron and Steel Products

I. ASTM A242 – High-Strength Low-Alloy Structural Steel
J. ASTM A307 – Carbon Steel Bolts and Studs
K. ASTM A325 – High Strength Bolts for Structural Steel Joints, including Suitable Nuts and Plain Hardened Washers
L. ASTM A434 – Steel Bars, Alloy, Quenched and Tempered
M. ASTM A449 – Quenched and Tempered Steel Bolts and Studs
N. ASTM A490 – Heat Treated Structural Steel Bolts
O. ASTM A500 – Cold Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
P. ASTM A501 – Hot-Formed Welded and Seamless Carbon Steel Structural Tubing
Q. ASTM A992 – Standard Specification for Steel for Structural Shapes For Use in Building Framing
R. ASTM 1008 - Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability
S. ASTM 1011 – Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability
T. ASTM C1107 – Packaged Dry, Hydraulic-Cement Grout (Non-shrink)
U. AWS – Standard Qualification Procedure
V. AWS A2.4 – Standard Symbols for Welding, Brazing, and Non-destructive Examination
W. AWS – D1.1 – Structural Welding Code
X. OSHA 1926 29 CFR – Safety and Health Regulations for Construction
Y. SSPC SP-2 – Hand Tool Cleaning
Z. SSPC SP-3 – Power Tool Cleaning

1.05 PERFORMANCE REQUIREMENTS

A. Connections: Provide details of simple shear and moment resisting connections required by the Contract Documents to be selected or completed by structural-steel fabricator to withstand ASD-service loads indicated and comply with other information and restrictions indicated.
   1. Select and complete connections using schematic details indicated and AISC's "Manual of Steel Construction, Allowable Stress Design," Part 4.
   2. Engineering Responsibility: Fabricator's responsibilities include using a qualified professional engineer registered in the State of RI to prepare structural analysis data for moment resisting beam to column structural-steel connections. Analysis to be stamped and signed.

B. Construction: Type 1 and 2, simple span and fully rigid framing.

1.06 SUBMITTALS

A. Comply with provision in Division 1. Submit a maximum of four sets.

B. Product Data: For each type of product indicated.

C. Shop Drawings: Show fabrication of structural-steel components.
   1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
   2. Include embedment drawings.
   3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld.
   4. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical high-strength bolted connections.

5. Include moment resisting structural-steel connections to be in compliance with design loads. Provide complete structural analysis data, signed and sealed by the qualified professional engineer responsible for their preparation who is licensed in the State of Rhode Island. Both the moment and shear components of the connection are to be included in the analysis.

D. Welding certificates.

E. Mill Test Reports: Signed by manufacturers certifying that the following products comply with requirements:
1. Structural steel including chemical and physical properties.
2. Bolts, nuts, and washers including mechanical properties and chemical analysis.
3. Direct-tension indicators.
4. Tension-control, high-strength bolt-nut-washer assemblies.
5. Shear stud connectors.
6. Shop primers.
7. Nonshrink grout.

F. Source quality-control test reports.

G. Submit data on shop primer indicating adhesion compatibility with spray on fireproofing.

1.07 QUALITY ASSURANCE

A. Comply with provisions in Division 1.
B. Installer Qualifications: A qualified installer who participates in the AISC Quality Certification Program and is designated an AISC-Certified Erector, Category CSE.
C. Fabricator Qualifications: A qualified fabricator who participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category Cbd.
D. Welding: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code--Steel."
E. Comply with applicable provisions of the following specifications and documents:
1. AISC's "Code of Standard Practice for Steel Buildings and Bridges."
2. AISC's "Seismic Provisions for Structural Steel Buildings" and "Supplement No. 2."
3. AISC's "Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design."
4. AISC's "Specification for the Design of Steel Hollow Structural Sections."
5. AISC's "Specification for Allowable Stress Design of Single-Angle Members."
6. RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

F. Mockups: Build mockups of architecturally exposed structural steel to set quality standards for fabrication and installation.
1. Coordinate finish painting requirements with Division 9 painting Sections.
2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

G. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Section 01310 - Project Management and Coordination.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Comply with provisions in Division 1.

B. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from erosion and deterioration.
   1. Store fasteners in a protected place. Clean and relubricate bolts and nuts that become dry or rusty before use.
   2. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

C. Deliver materials to the site at such intervals to ensure uninterrupted progress of the work.

1.09 COORDINATION

A. Furnish anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

PART 2 - PRODUCTS

2.01 STRUCTURAL-STEEL MATERIALS

A. W-Shapes: ASTM A 992 or ASTM A 572, Grade 50.
B. Channels, Angles, M, S-Shapes: ASTM A 36.
C. Plate and Bar: ASTM A 36.
D. Cold-Formed Hollow Structural Sections: ASTM A 500, Grade B, structural tubing.
E. Steel Pipe: ASTM A 53, Type E or S, Grade B.
F. Medium-Strength Steel Castings: ASTM A 27, Grade 65-35, carbon steel.
G. High-Strength Steel Castings: ASTM A 148, Grade 80-50, carbon or alloy steel.
H. Welding Electrodes: E70xx, comply with AWS requirements.

2.02 BOLTS, CONNECTORS, AND ANCHORS

A. High-Strength Bolts, Nuts, and Washers: ASTM A 325 or ASTM A 490, Type 1, heavy hex steel structural bolts or tension-control, bolt-nut-washer assemblies with splined ends; ASTM A 563 heavy hex carbon-steel nuts; and ASTM F 436 hardened carbon-steel washers, plain.
   1. Finish: Plain.
   2. Direct-Tension Indicators: ASTM F 959, compressible-washer type
   3. Tension-Control Assemblies: ASTM F 1852

B. Unheaded Anchor Rods: ASTM A 307, Grade A.
   1. Configuration: Hooked.
   2. Nuts: ASTM A 563 hex carbon steel.
   3. Plate Washers: ASTM A 36 carbon steel.
   4. Washers: ASTM F 436 hardened carbon steel.
   5. Finish: Mechanically deposited zinc coating, ASTM B 695, Class 50.

C. Threaded Rods: ASTM A 193.

1. Nuts: ASTM A 563 hex carbon steel.
2. Washers: ASTM A 36 carbon steel.
3. Finish: Plain.

2.03 PRIMER

A. Primer: Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer when used without fireproofing materials.

B. When intumescent is specified, primer paint is to be compatible.

C. Galvanizing Repair Paint: ASTM A 780, minimum 95% metallic zinc by weight.

D. Steel exposed to exterior weather is to have high performance coating system.

2.04 GROUT

A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

2.05 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC's "Code of Standard Practice for Steel Buildings and Bridges" and AISC's "Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design."
1. Identify high-strength structural steel according to ASTM A 6 and maintain markings until structural steel has been erected.
2. Mark and match-mark materials for field assembly.
3. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.

B. Architecturally Exposed Structural Steel: Comply with fabrication requirements, including tolerance limits, of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for structural steel identified as architecturally exposed structural steel.
1. Fabricate with exposed surfaces smooth, square, and free of surface blemishes including pitting, rust, scale, seam marks, roller marks, rolled trade names, and roughness.
2. Remove blemishes by filling or grinding or by welding and grinding, before cleaning, treating, and shop priming.

C. Bolt Holes: Cut, drill, or punch standard bolt holes perpendicular to metal surfaces.

D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.

E. Cleaning: Clean and prepare steel surfaces that are to remain unpainted according to SSPC-SP 1, "Solvent Cleaning and SSPC-SP 3, "Power Tool Cleaning."

F. Holes:
1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.
2. Base-Plate Holes: Cut, drill, or punch holes perpendicular to steel surfaces.

3. Weld threaded nuts to framing and other specialty items indicated to receive other work.

G. Assemble and weld built-up sections by methods which will produce true alignment of axes without warp.

H. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1 and manufacturer's written instructions.

I. Fabricate beams and girders with positive camber when composite with the concrete slab. Prescribe enough camber to counteract dead load of concrete slab and framing. Amount of camber is to be indicated on submitted shop drawings.

2.06 SHOP CONNECTIONS

A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.

1. Joint Type: Pretensioned.

B. Weld Connections: E70xx in compliance with AWS D1.1 for welding procedure specifications, tolerances, appearance, and quality of welds and for methods used in correcting welding work.
1. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for mill material.
2. Verify that weld sizes, fabrication sequence, and equipment used for architecturally exposed structural steel will limit distortions to allowable tolerances. Prevent weld show-through on exposed steel surfaces.
   a. Grind butt welds flush.
   b. Grind or fill exposed fillet welds to smooth profile. Dress exposed welds.

2.07 GALVANIZING

A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A 123.
1. Galvanize loose lintels and relieving angles attached to structural-steel frame and located in exterior walls.
2. Galvanize steel as noted on drawings.

2.08 SOURCE QUALITY CONTROL

A. Owner will engage an independent testing and inspecting agency to perform shop tests and inspections and prepare test reports.

1. Provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections.

B. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

C. Bolted Connections: Shop-bolted connections will be inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

D. Welded Connections: In addition to visual inspection, shop-welded connections will be tested and inspected according to AWS D1.1 and the following inspection procedures, at testing agency's option:
   1. Liquid Penetrant Inspection: ASTM E 165.
   2. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
   3. Ultrasonic Inspection: ASTM E 164.
   4. Radiographic Inspection: ASTM E 94.

E. In addition to visual inspection, shop-welded shear connectors will be tested and inspected according to requirements in AWS D1.1 for stud welding and as follows:
   1. Bend tests will be performed if visual inspections reveal either a less-than- continuous 360-degree flash or welding repairs to any shear connector.
   2. Tests will be conducted on additional shear connectors if weld fracture occurs on shear connectors already tested, according to requirements in AWS D1.1.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments, with steel erector present, for compliance with requirements.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place, unless otherwise indicated.

3.03 ERECTION

A. Set structural steel accurately in locations and to elevations indicated and according to AISC's "Code of Standard Practice for Steel Buildings and Bridges" and "Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design."

B. Base and Bearing Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting base and bearing plates. Clean bottom surface of base and bearing plates.
   1. Set bearing and leveling plates for structural members on leveling grout as required.
   2. Pretension anchor rods after supported members have been positioned and plumbed.

3. Promptly pack grout solidly between bearing surfaces and base or bearing plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.

C. Maintain erection tolerances of structural steel and architecturally exposed structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."

D. Align and adjust various members forming part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
1. Level and plumb individual members of structure.
2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.

E. Splice members only where indicated.

F. Remove erection bolts on welded, architecturally exposed structural steel; fill holes with plug welds; and grind smooth at exposed surfaces.

G. Do not use thermal cutting during erection.

H. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

I. Touch-up Painting: immediately after erection, clean field welds, bolted connections, and abraded areas of the shop paint. Apply paint to exposed areas with the same material as used for shop painting. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils. Use galvanizing repair paint to correct damaged or abraded areas of galvanized members and to cover and protect field welds in galvanized members

3.04 FIELD CONNECTIONS

A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.

1. Joint Type: Pretensioned.

B. Weld Connections: Comply with AWS D1.1 for welding procedure specifications, tolerances, appearance, and quality of welds and for methods used in correcting welding work.
1. Comply with AISC's "Code of Standard Practice for Steel Buildings and Bridges" and "Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design " for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.
2. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for mill material.
3. Verify that weld sizes, fabrication sequence, and equipment used for architecturally exposed structural steel will limit distortions to allowable tolerances. Prevent weld show-through on exposed steel surfaces.

a. Grind butt welds flush.
b. Grind or fill exposed fillet welds to smooth profile. Dress exposed welds.

3.05 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to inspect field welds and high-strength bolted connections.

B. Bolted Connections: Shop-bolted connections will be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

C. Welded Connections: All field welds will be visually inspected according to AWS D1.1.
1. In addition to visual inspection, 10% of all field welds will be tested according to AWS D1.1 and the following inspection procedures, at testing agency's option:
a. Liquid Penetrant Inspection: ASTM E 165.
b. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
c. Ultrasonic Inspection: ASTM E 164.
d. Radiographic Inspection: ASTM E 94.

D. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

3.06 REPAIRS AND PROTECTION

A. Repair damaged galvanized coatings on galvanized items with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

B. Touchup Painting: After installation, promptly clean, prepare, and prime or reprime field connections, rust spots, and abraded surfaces of prime-painted joists and accessories, bearing plates, and abutting structural steel.
1. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.
2. Apply a compatible primer of same type as shop primer used on adjacent surfaces.

C. Touchup Painting: Cleaning and touchup painting are specified in Division 9 painting Sections.

D. Any field alterations are to be submitted as a drawing to the architect prior to implementation. Submitted drawing is to show field conditions and work to be performed including, but not limited to member sizes, tolerances, weld sizes and length, and connection information. Proposed field alteration is subject to approval by architect or engineer.

END OF SECTION

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SECTION 05 31 00

STEEL DECK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes the following:
   1. Roof deck.
   2. Deck accessories, closures, fillers, fastening of deck.
   3. Roof frames

B. Related Sections include the following:
   1. Division 3, Cast-in-Place Concrete
   2. Division 5, Structural Steel
   3. Division 7, Roof Insulation

1.03 SUBMITTALS

A. Comply with provisions in Division 1.

B. Submit a maximum of four sets. Contractor to make sepias of reviewed sets as required for further distribution.

C. Product Data: For each type of deck, accessory, and product indicated.

D. Shop Drawings:
   1. Show layout and types of deck panels, anchorage details, reinforcing channels, pans, deck openings, special jointing, accessories, and attachments to other construction. Include dimensions of individual components and finishes.
   2. Type and location of welds.
   3. Details of accessories, showing sump pans, cant strips, closure strips and insulation supports.

E. Product Certificates: Signed by steel deck manufacturers certifying that products furnished comply with requirements. Include test reports for mechanical fasteners showing compliance with required loading.

F. Welding Certificates: Copies of certificates for welding procedures and personnel.

1.04 QUALITY ASSURANCE

A. Comply with provisions in Division 1.

B. Manufacturer Qualifications: Member of the Steel Deck Institute.

C. Installer Qualifications: An experienced installer who has completed steel deck similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

D. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM E 329 to conduct the testing indicated, as documented according to ASTM E 548.

E. Welding: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code--Steel," and AWS D1.3, "Structural Welding Code--Sheet Steel."
F. Fire-Test-Response Characteristics: Where indicated, provide steel deck units identical to those steel deck units tested for fire resistance per ASTM E 119 by a testing and inspection agency acceptable to authorities having jurisdiction.
   1. Fire-Resistance Ratings: Indicated by design designations from UL's "Fire Resistance Directory" or from the listings of another testing and inspecting agency.
   2. Steel deck units shall be identified with appropriate markings of applicable testing and inspecting agency.
   3. Finish of steel deck is to provide adequate adhesion for spray on fire resistant material.
G. AISI Specifications: Calculate structural characteristics of steel deck according to AISI's "Specification for the Design of Cold-Formed Steel Structural Members."

1.05 DELIVERY, STORAGE, AND HANDLING
A. Comply with provisions in Division 1.
B. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.
C. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.
D. Do not place bundles of deck on unstable structural members or in such a manner that will overstress the supporting beam, joist, or wall.

1.06 COORDINATION
A. Coordinate deck penetrations with other trades as required. Any opening to be shown on shop drawings.
B. Coordinate roof frame quantities, locations, and dimensions with other trades as required. Structural steel roof frames to be provided as noted in Article 3.

1.07 REFERENCE STANDARDS
A. AISI – Specificaion for the Design of Cold-Formed Steel Structural Members with Commentary
B. ASTM A36 – Carbon Structural Steel
C. ASTM A108 – Steel Bars, Carbon Cold-Finished Standard Quality
D. ASTM A123 – Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
E. ASTM A446 – Steel Sheet, zinc coated by the Hot-Dip Process, Structural Quality
F. ASTM A525 – Steel Sheet, zinc coated by the Hot-Dip Process, General Requirements
G. ASTM A653 – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
H. ASTM A1008 – Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability
I. AWS D1.1 – Structural Welding Code – Steel
J. AWS D1.3 – Structural Welding Code - Sheet Steel
K. MIL – MIL-P-21035, Galvanizing Repair
L. OSHA 1926 29 CFR – Safety and Health Regulations for Construction
M. SDI – Publication No. 29, Design Manual for Composite Decks, Form Decks, Roof Decks, and Cellular Floor Deck Systems with Electrical Distribution
N. SDI DDM02 – Diaphragm Design manual; Steel Deck Institute, Inc.; 2nd Edition.

PART 2 - PRODUCTS

2.01 NON-COMPOSITE FORM DECK

A. Non-composite Steel Form Deck: Fabricate ribbed-steel sheet noncomposite form deck panels to comply with "SDI Specifications and Commentary for Non-composite Steel Form Deck," in SDI Publication No. 29, the minimum section properties indicated, and the following:
   1. Galvanized Steel Sheet: ASTM A 653, Structural Steel, Grade 33, G60 zinc coating.
   2. Profile Depth: 1 1/2 inches.
   3. Design Uncoated-Steel Thickness: 20 gauge.
   4. Span Condition: Triple span or more.
   5. Side Laps: Overlapped or interlocking seam at Contractor's option.

2.02 COMPOSITE FLOOR DECK

A. Composite Steel Floor Deck: Fabricate panels, with integrally embossed or raised pattern ribs and interlocking side laps, to comply with "SDI Specifications and Commentary for Composite Steel Floor Deck," in SDI Publication No. 29, the minimum section properties indicated, and the following:
   1. Galvanized Steel Sheet: ASTM A 653, Structural Steel, Grade 33, G60 zinc coating.
   2. Profile Depth: 1-1/2 inches.
   3. Design Uncoated-Steel Thickness: 20 gauge.
   4. Span Condition: Triple span or more.

2.03 ROOF DECK

A. Steel Roof Deck: Fabricate panels, without top-flange stiffening grooves, to comply with "SDI Specifications and Commentary for Steel Roof Deck," in SDI Publication No. 29, and the following:
   1. Galvanized Steel Sheet: ASTM A 653, Structural Steel, Grade 33, G90 zinc coating.
   2. Deck Profile: Type B wide rib.
   3. Profile Depth: 1 1/2 inches or 1 inch.
   4. Design Uncoated-Steel Thickness: 20 gauge.
   5. Span Condition: Triple span or more.
   6. Side Laps: Overlapped or interlocking seam at Contractor's option.

2.04 ACCESSORIES

A. General: Provide manufacturer's standard accessory materials for deck that comply with requirements indicated.

B. Mechanical Fasteners: Corrosion-resistant, low-velocity, power-actuated or pneumatically driven carbon-steel fasteners; or self-drilling, self-threading screws.

C. Side-Lap Fasteners: Corrosion-resistant, hexagonal washer head; self-drilling, carbon-steel screws, No. 10 minimum diameter.

D. Flexible Closure Strips: Vulcanized, closed-cell, synthetic rubber.

E. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000 psi, not less than 0.0359-inch design uncoated thickness, of same material and finish as deck; of profile indicated or required for application.

F. Steel Sheet Accessories: Steel sheet, of same material, finish, and thickness as deck, unless otherwise indicated.

G. Pour Stops and Girder Fillers: Steel sheet, minimum yield strength of 33,000 psi, of same material and finish as deck, and of thickness and profile indicated unless noted otherwise on drawings.

H. Column Closures, End Closures, Z-Closures, and Cover Plates: Steel sheet, of same material, finish, and thickness as deck, unless otherwise indicated

I. Weld Washers: Uncoated steel sheet, shaped to fit deck rib, 0.0598 inch thick, with factory-punched hole of 3/8-inch minimum diameter.

J. Flat Sump Plate: Single-piece steel sheet, 0.0747 inch thick, of same material and finish as deck. For drains, cut holes in the field.

K. Shear Connectors: ASTM A 108, Grades 1010 through 1020 headed stud type, cold-finished carbon steel, AWS D1.1, Type B, with arc shields

L. Galvanizing Repair Paint: ASTM A 780.

M. Repair Paint: Lead- and chromate-free rust-inhibitive primer complying with performance requirements of FS TT-P-664.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine supporting frame and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance.

3.02 INSTALLATION, GENERAL

A. Install deck panels and accessories according to applicable specifications and commentary in SDI Publication No. 29, manufacturer's written instructions, and requirements in this Section.
B. Install temporary shoring before placing deck panels, if required to meet deflection limitations.
C. Locate decking bundles to prevent overloading of supporting members.
D. Place deck panels on supporting frame and adjust to final position with ends accurately aligned and bearing on supporting frame before being permanently fastened. Do not stretch or contract side-lap interlocks.
E. Place deck panels flat and square and fasten to supporting frame without warp or deflection.
F. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to decking.
G. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of decking, and support of other work.
H. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used for correcting welding work.

3.03 ROOF DECK INSTALLATION

A. Fasten roof deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter indicated or arc seam welds with an equal perimeter, but not less than 1-1/2 inches long, and as follows:
   1. Weld Diameter: 5/8 inch, nominal.
   2. Weld Spacing: Weld deck in place at all supports with a 36/4 pattern with additional welds spaced at 6 inches apart at the perimeter of the building and roof corners. Welding

to be less than a minimum of two welds per deck unit at each support or 12 inches on-center in the field.

3. Weld Washers: Install weld washers at each weld location as recommended by SDI.

B. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, at intervals not exceeding the lesser of 1/3 of the span or 36 inches, and as follows:
   1. Mechanically fasten with self-drilling No. 10 diameter or larger carbon-steel screws.
   2. Fasten with a minimum of 1-1/2-inch- long welds.
   3. Minimum of two fasteners for each deck span.

C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches, with end joints as follows:
   1. End Joints: Lapped 2 inches minimum.

D. Roof Sump Pans and Sump Plates: Install over openings provided in roof decking and weld flanges to top of deck. Space welds not more than 12 inches apart with at least 1 weld at each corner.

E. Miscellaneous Roof Deck Accessories: Install ridge and valley plates, finish strips, cover plates, end closures, and reinforcing channels according to deck manufacturer's written instructions. Weld to substrate to provide a complete deck installation.

F. Flexible Closure Strips: Install flexible closure strips over partitions, walls, and where indicated. Install with adhesive according to manufacturer's written instructions to ensure complete closure.

G. Reinforcement at Openings: Reinforce any opening penetrating metal deck shown on the contract documents as follows unless noted otherwise on drawings:
   1. Openings with any dimension 8” or less to have a flat steel plate welded to the top surface of the deck. Plate to extent 12” past the opening in each direction and to be minimum 18 gauge. Weld or screw plate to deck at 3 locations each side.
   2. Openings greater than 8” in any direction to be reinforced with a structural steel angle frame. Frame to support the entire perimeter of opening and to be supported on each end by adjacent framing or load bearing wall. Unless noted otherwise frame to be constructed of L3x3x1/4 angles.

3.04 FLOOR DECK INSTALLATION

A. Fasten floor deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter indicated and as follows:

   1. Weld Diameter: 5/8 inch, nominal.
   2. Weld Spacing: Weld edge ribs of panels at each support. Space welds 12 inches apart in the field of the floor and 6 inches apart at building perimeter.
   3. Weld Washers: Install weld washers at each weld location as recommended by SDI.

B. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, at intervals not exceeding the lesser of 1/2 of the span or 36 inches, and as follows:

   1. Mechanically fasten with self-drilling No. 10 diameter or larger carbon-steel screws.
   2. Fasten with a minimum of 1 1/2 inch long welds

C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches, with end joints as follows:
   1. End Joints: Lapped.

D. Shear Connectors: Weld shear connectors through deck to supporting frame according to AWS D1.1 and manufacturer's written instructions. Butt end joints of deck panels; do not overlap. Remove and discard arc shields after welding shear connectors

E. Pour Stops and Girder Fillers: Weld steel sheet pour stops and girder fillers to supporting structure according to SDI recommendations, unless otherwise indicated.

F. Floor Deck Closures: Weld steel sheet column closures, cell closures, and Z-closures to deck, according to SDI recommendations, to provide tight-fitting closures at open ends of ribs and sides of decking. Weld cover plates at changes in direction of floor deck panels, unless otherwise indicated.

G. Install piercing hanger tabs not more than 14 inches apart in both directions, within 9 inches of walls at ends, and not more than 12 inches from walls at sides, unless otherwise indicated.

H. Reinforcement at Openings: Reinforce any opening penetrating floor deck shown on contract documents with structural steel angle frame. Frame is to support entire perimeter of openings and will bear on framing or load bearing wall on each side. Unless noted otherwise members of frame are to be built from L4x4x1/4 angles.

3.05 FIELD QUALITY CONTROL

A. Testing: Owner will engage a qualified independent testing agency to perform field quality-control testing.
B. Field welds will be subject to inspection.
C. Testing agency will report test results promptly and in writing to Contractor and Architect.
D. Remove and replace work that does not comply with specified requirements.
E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements.

3.06 REPAIRS AND PROTECTION

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.
B. Repair Painting: Wire brush and clean rust spots, welds, and abraded areas on both surfaces of prime-painted deck immediately after installation, and apply repair paint.
   1. Apply repair paint, of same color as adjacent shop-primed deck, to bottom surfaces of deck exposed to view.
   2. Wire brushing, cleaning, and repair painting of bottom deck surfaces are included in Division 9, Painting.
C. Provide final protection and maintain conditions to ensure that steel deck is without damage or deterioration at time of Substantial Completion.

END OF SECTION

SECTION 05 50 00

MISCELLANEOUS METAL WORK

PART 1 - GENERAL

1.01 SUMMARY

A. Related Documents:
The Drawings and general provisions of the Contract, including General and Supplementary General Conditions, and Division 1 Requirements, apply to the work in this Section.

1.02 SECTION INCLUDES

A. Miscellaneous metal work items as described in this Specification Section.

B. Section includes, without limitation, providing and installing:
1. Shop applied ferrous metals priming paint for miscellaneous metals.
2. Anchorages, brackets, supports, inserts and backing required for a complete job but not included in other sections.
3. All other ferrous or non-ferrous metal work not specifically given to other Sections and necessary for a complete job, but including:
   b. Galvanized steel framing, lintels and supports for overhead doors. (Structural HSS tube, structural steel bent plate door jambs.
   c. Galvanized steel framing and supports for mechanical and electrical equipment.

C. Items To Be Furnished Only: Furnish the following items for installation by the designated Sections
1. Section 03 30 00 - Cast-in-place Concrete:
   a. Sleeves, anchors, inserts, plates and similar items.
   b. Galvanized steel slab edge angle at overhead door sills.

2. Miscellaneous items
   a. Miscellaneous steel trim, galvanized at exterior locations.
   b. All plates, threaded rods, unistrut and angles required to support suspended HVAC units from building structure.

1.03 RELATED SECTIONS

A. Section 03 30 00 – Cast-in-place Concrete
B. Section 05 12 00 – Structural Steel
C. Section 05 31 00 – Steel Roof Deck
D. Section 09 90 10 – Painting

1.03 SUBMITTALS

A. Submit shop drawings, product data under provisions of Section 01 33 00. Include plans, elevations, sections, details, and attachments to other work. Show anchorage and accessory items.

B. Submit samples of product as requested by the architect. Submit 8" square samples of each metal shop or factory finish (final surface treatment) required. Prepare samples on metal of same alloy and gauge to be used for the work. Label each sample to identify substrate material and finish. Provide hardware samples.

C. Manufacturer's Data: Submit manufacturer's specifications, anchor details and installation instructions for any prefabricated products to be used in the work of this section

1.04 REGULATORY REQUIREMENTS

A. Conform to all federal, state, and local codes.

1.05 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

B. Engineering Calculations: Calculations stamped by a registered professional engineer are required for load bearing fabrications. The Structural Engineer's written approval of such calculations shall be obtained before commencing fabrication

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.

1.07 FIELD MEASUREMENTS

A. Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication.

PART 2 - PRODUCTS

2.01 GENERAL FABRICATION REQUIREMENTS

A. Welding shall conform to the applicable requirements of the American Welding Society. Welding shall be done in a manner that will prevent permanent buckling and all welds exposed in the finished work shall be ground to an architectural quality smooth appearance approved by the Architect.

B. Exposed surfaces shall have a smooth finish and sharp, well defined lines. Sections shall be formed to shape and size with sharp lines and angles. Curved work shall be sprung evenly.

C. Necessary rabbets, lugs and brackets shall be provided so that work can be assembled and anchored in a neat and substantial manner. Holes for bolts and screws shall be drilled. Fastenings shall be concealed where practicable.

D. Work shall be fabricated and installed in a manner that will provide for expansion and contraction, prevent the shearing of bolts, screws and other fastenings, insure rigidity and provide close fitting of sections. Joints exposed to the weather shall be formed to exclude water.

E. All galvanized metal shall bear a stamp indicating ASTM number and weight of zinc coating in ounces per square foot.

2.02 MATERIALS

A. Materials shall conform to the latest edition of the specifications or manufacturer's standards.
1. Steel Shapes ASTM A-36 Bars & Plates
2. Anchor Bolts ASTM A-307 Grade A
3. Structural Bolts ASTM A-325 (unless shown or indicated otherwise)
4. Weld Material E70XX Welding Electrodes For manual shielded metal-arc welding, AWS A5.1 or A5.5, E60 or E70 series
5. Galvanizing ASTM A-123, , or A-153 as applicable; 2.0 ounces zinc per square foot, unless otherwise indicated; provide under its section.
6. Stainless Steel Type 304L, ASTM A 276
7. Steel bar gratings ASTM A-569 or A-36
8. Bitumastic Preservative Mil-P-15230 [Where shown and all embedded steel]
9. Galvanized Sheet Steel ASTM A-526 or A-526, G-90
10. Hot-Rolled Carbon Steel Bars (and Bar-Size Shapes): ASTM A-36 or A-529, grade as selected by fabricator.
11. Brackets, flanges and exposed fastenings: Shall be of the same materials, color and finish as the metal to which they are applied, unless shown or specified otherwise.
12. Expansion bolts at concrete: "Redhead" wedge anchors.
13. Expansion bolts at CMU: Hilti epoxy/masonry anchors

B. Hangers and suspension: Where required, provide “Uni-strut” A1000 or assemblies of types recommended by manufacturer for application.

C. Galvanizing Repair Paint: High zinc dust content paint, “ZRC”, having 95% zinc. by weight. Two coats always are required.

2.03 SHOP PAINTING

A. All surfaces of ferrous metal except galvanized steel shall be given a shop coat of red lead, zinc-chromate paint or other approved rust-inhibitive primer unless otherwise specified. All surfaces which will be inaccessible for painting after erection, except contact surfaces of riveted or welded connections, shall be given two coats of paint before being assembled or erected. All marred surfaces of shop coats shall be thoroughly recoated. Field painting is specified under Section 09 91 00.

2.04 ANCHORING CEMENT:

A. Anchoring non-shrink grout shall be Hallemite "Por-rok” or equal.

2.05 CLEANING:

A. Clean under provisions of Section 01 70 00.

B. The Contractor shall clean the miscellaneous metal work by removing all excess sealants, dirt and foreign materials, restoring finishes, leaving work in a good and satisfactory condition. The Contractor shall perform the work of cleaning using methods and materials as recommended by the manufacturers of the materials used and as approved.

PART 3 - EXECUTION

3.01 INSPECTION

A. Review existing field conditions of areas to receive the work of this Section before proceeding with fabrication. Do not proceed with installation of metal fabrications until all unsatisfactory conditions which would impair the strength or appearance of the work have been corrected.

3.02 INSTALLATION OF METAL FABRICATIONS

A. Fastening to In-Place Construction: Provide anchorage devices and fasteners and furnish all necessary setting drawings, diagrams, and templates where necessary for securing miscellaneous metal items to in-place construction including threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws and other connectors as required. Use galvanized bolts at exterior. Coordinate delivery of such items to project site.

B. Cutting: Perform cutting, drilling and fitting required for installation of miscellaneous metal items. Do not cut structural members in field to facilitate fitting without written permission of the Architect for each specific condition.

C. Fitting: Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind joints smooth. Do not weld, cut or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.

D. Placement: Set work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items which are to be built into concrete, masonry or similar construction.

E. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of welds made, and methods used in correcting welding work. Do not field weld stainless steel or aluminum.

F. Grouting: Set bearing plates required for support of the work of this Section level and to correct elevation using steel shims or wedges and grout solid using specified non-shrink grout.

G. Touch-Up of Shop Primers: Touch up field welds and unprimed steel using specified shop

primers and following procedures specified for shop work.

H. Existing work: Remove and re-install or re-locate existing metal fabrications as required to complete the work. Drill, tap, or weld existing assemblies as required to complete the work and to attach existing work to new work.

3.03 PRODUCTS

A. Anchors and Bolts:
Anchors and bolts shall be provided where indicated and where necessary for fastening work in place. They shall be embedded in concrete and masonry as the work progresses. Sizes, kinds and spacing of anchors not indicated or specified shall be as necessary for their purpose.

B. Steel:
Steel for the support of piping and appurtenances shall be provided to the details indicated and as necessary for the complete installation.

C. Pipe Hangers and Miscellaneous Supports:
Pipe hangers and miscellaneous supports shall be provided as required.

D. Miscellaneous Framing and Supports:
1. Provide miscellaneous steel framing and supports which are not a part of structural steel framework, as required.
2. Fabricate miscellaneous units to sizes, shapes and profiles shown or, if not shown, of required dimensions to receive work to be supported by framing. Except as otherwise shown, fabricate from structural steel shapes and plates and steel bars, of welded construction using mitered joints for field connection. Cut, drill and tap units to receive hardware and similar items.
3. Equip units with integrally welded anchor straps for casting into poured concrete or building into masonry wherever required. Furnish concrete inserts if units must be installed after concrete is placed.

3.04 REPAIR OF ZINC COATINGS:

A. All zinc coatings that have been damaged in handling or transporting or in welding, riveting or bolting shall be repaired by the application of a thick paste made from galvanizing repair compound conforming to Federal Specification 0-G-93 and water. Areas to be repaired shall be cleaned thoroughly, including removal of slag on welds, before the paste is applied. Surfaces to be coated with paste shall be heated with a torch so that all metallics in the paste will be melted when applied to the heated surfaces. Extreme care shall be taken to see that adjacent zinc-coated surfaces are not damaged by torch. Molten metal shall spread uniformly over all surfaces to be coated and the excess metal wiped off.

3.05 FIELD PAINTING

A. Specified as scheduled under Section 09 91 00 - Painting.

3.06 DISSIMILAR MATERIAL

A. Where aluminum comes in contact with metals other than stainless steel, zinc, white bronze or other metals compatible with aluminum, then those surfaces shall be kept from direct contact by painting the dissimilar metal with a coating of heavy-bodied bituminous paint, a good quality caulking placed between the metals, non-absorptive tape or gasket.

END OF SECTION

SECTION 07 01 50

ROOFING REPAIR

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Provide all labor, material, tools, equipment, and supervision necessary to complete the installation of the repair of the existing Roofing System including flashings and insulation as specified herein and as indicated on the drawings in accordance with the manufacturer's most current specifications and details.

B. The roofing contractor shall be fully knowledgeable of all requirements of the contract documents and shall make themselves aware of all job site conditions that will affect their work.

1.02 SUBMITTALS

A. Submit under provisions of Section 01 33 00.

B. Prior to starting work, the roofing contractor must submit the following:
1. Shop drawings showing layout, details of construction and identification of materials. Drawings shall indicate outline of roof, location of drains, scuppers or gutters, profile of tapered insulation components, and the indication of insulation thickness for the completed insulation system. Shop drawings shall comply with the drainage pattern required.
3. Submit a letter of certification from the manufacturer that certifies the roofing contractor is authorized to install the manufacturer's roofing system.
4. Verify ASCE-7 wind uplift requirements and associated fastening patterns needed to meet Factory Mutual requirements..

C. Submit manufacturer's material safety data (MSDS) for all components.

D. Upon completion of the installed work, submit copies of the manufacturer's final inspection.

1.03 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.

B. Deliver materials to the job site in the manufacturer's original, unopened containers or wrappings with the manufacturer's name, brand name and installation instructions intact and legible. Deliver in sufficient quantity to permit work to continue without interruption.

C. Comply with the manufacturer's written instructions for proper material storage.
1. Store materials between 60°F and 80°F in dry areas protected from water and direct sunlight. If exposed to lower temperature, restore to 60°F minimum temperature 24 hours before using.
2. Store materials containing solvents in dry, well ventilated spaces with proper fire and safety precautions. Keep lids on tight. Use before expiration of their shelf life.

D. Insulation must be on pallets, off the ground, tightly covered with waterproof materials and protected from direct sunlight.

E. Any materials which are found to be damaged shall be removed and replaced at the contractor's expense.

1.04 WORK SEQUENCE

A. Schedule and execute work to prevent leaks and excessive traffic on completed roof sections. Care should be exercised to provide protection for the interior of the building and to ensure water does not flow beneath any completed sections of the roofing system.

B. Do not disrupt activities in occupied spaces.

1.05 PRE-INSTALLATION CONFERENCE

A. The primary contractor, subcontractors, the owner or the owner's representative and the Architect shall conduct a pre-roofing conference one week before any work begins under provisions of Section 01 31 00, so all parties involved in the installation of the roofing system construction, or who may work on or through the roofing system, understand their obligations with respect to the roofing project and materials.

B. Review installation procedures and coordination required with owner for related work.

1.06 SAFETY

A. The roofing contractor shall be responsible for all means and methods as they relate to safety and shall comply with all applicable local, state and federal requirements that are associated with safety. All related personnel shall be instructed daily to be mindful of the full time requirement to maintain a safe environment for the facility's occupants including staff, visitors, customers and the occurrence of the general public on or near the site. Provide a barricade around staging area as required to prevent entry.

1.07 QUALITY ASSURANCE

A. The roofing system must achieve Class A and ASCE-7 uplift requirements as per RI state code.

B. Manufacturer’s Certificate: Certify that roof system furnished is approved by Factory Mutual in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.

C. The roofing system must meet the state requirements for the basic 144 mph wind speed zone.

D. Unless otherwise noted in this specification, the roofing contractor must strictly comply with the manufacturer's current specifications and details.

E. The roofing system must be installed by an applicator authorized and trained by the manufacturer in compliance with shop drawings as approved by the manufacturer. The roofing applicator shall

be thoroughly experienced and upon request be able to provide evidence of having at least five (5) years experience installing the specified roofing system.

F. Provide adequate number of experienced workmen regularly engaged in this type of work who are skilled in the application techniques of the materials specified. Provide at least one thoroughly trained and experienced superintendent on the job at all times roofing work is in progress.

G. There shall be no deviations made from this specification or the approved shop drawings without the prior written approval of the Architect.

H. Upon completion of the installation, the applicator shall arrange for an inspection to be made by a technical representative of the roofing system manufacturer in order to inspect the roofing system.

1.08 JOB CONDITIONS, CAUTIONS AND WARNINGS

A. Material Safety Data Sheets (MSDS) must be on location at all times during the transportation, storage and application of materials.

B. When loading materials onto the roof, the Contractor must ensure that overloading and possible disturbance to the building structure does not occur.

C. NOTE: Access to the roof is difficult, consisting of small door and stairway openings. A crane or other method of lifting materials to rooftop may be necessary. Verify all conditions at site.

D. Proceed with roofing work only when weather conditions are in compliance with the manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with the manufacturer's requirements and recommendations.

E. Proceed with work so new roofing installation is not subject to construction traffic. When necessary, newly roofed sections shall be protected and inspected upon completion for possible damage.

F. The surface on which the insulation or roofing membrane is to be applied shall be clean, smooth, dry, and free of projections or contaminants that would prevent proper application of or be incompatible with the new installation, such as fins, sharp edges, foreign materials, oil and grease.

G. New roofing shall be complete and weathertight at the end of each work day.

H. If fasteners for insulation installation are to be used in an existing roof deck, the Contractor is responsible to arrange for a pull test in the existing roof deck using the proposed fastener and meet all requirements noted herein.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Roofing: Kemper System America.
No substitutions. Must coordinate with existing Kemper roofing system.
Local company representative: Tim Sullivan, 401-821-6682, tsullivan@kempersystem.com

2.02 ROOFING SYSTEM MATERIALS

A. The following roofing components have been verified to match the existing Kemper roofing system.
   1. Kempertec D Primer
   2. Kemperol Fleece 165: Polyester reinforcing fleece.
   3. Kemperol V210M: Cold fluid-applied monolithic membrane.

2.03 INSULATION MATERIALS

A. Thermal Insulation Boards.
   1. Rigid Polyisocyanurate Roof Insulation; ASTM C1289:
      a. Qualities: Rigid, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers.
      b. Total Polyisocyanurate Insulation Thickness: as required for surface of roofing patch to match level with existing roofing.
      c. Compliances: FM
      d. Manufacturer: Commercial Innovations, Inc., Cleveland, OH, Johns Manville, or Hunter

   2. Recovery (Isolation) Board
      a. Qualities: Nonstructural, noncombustible, homogenous composition panel.
      b. Board Size: Four by eight feet (4’ x 8’).
      c. Thickness: 1/2”
      d. Compliances: FM.
      e. Manufacturer: Securock by USG or as approved by manufacturer as compatible with the roofing system.

   3. Polyisocyanurate foam core is to contain a minimum of 5 % Pre-Consumer recycled content and 10% Post-Consumer recycled content.

PART 3 - EXECUTION

3.01 GENERAL

A. Comply with the manufacturer's published instructions for the installation of the roofing system including proper substrate preparation, jobsite considerations and weather restrictions.

3.02 PREPARATION

A. Remove and dispose existing roofing system, insulation, and structural terra cotta roof deck as required to create opening for removal and installation of elevator machines. Verify size of opening(s) at site.

3.03 PROTECTION

A. Schedule and execute all work without exposing the building interior to the effects of inclement weather. Protect the existing building, contents, and its inhabitants against all risks associated with this work.

3.04 INSULATION PLACEMENT

A. Install new steel roof deck as specified.

B. Install insulation over the new metal roof deck with boards butted tightly together with no joints or gaps greater than 1/4 inch. Stagger joints both horizontally and vertically if multiple layers are provided.

C. Secure recovery (isolation) board through the insulation to the metal roof deck with the required mechanical fasteners in accordance with the manufacturer's specifications. Minimum density of fasteners per FM.

D. The recovery (isolation) board that the roofing system is to adhere to shall be compatible with the roofing system and approved by the manufacturer for adhesion. The Contractor is responsible to coordinate and confirm the material is acceptable.

3.05 ROOFING INSTALLATION

A. Install the Kemper primer, fleece and liquid membrane in accordance with the manufacturer’s specifications and instructions and blend into the existing roofing system.

B. The finished surface of the new roofing system is to match level with the existing surrounding surface and pitch at the same angle as the existing.

3.06 FLASHING

A. Follow manufacturer's typical flashing procedures for all wall, curb, and penetration flashing.

3.07 DAILY SEAL

A. When the completion of flashings and terminations is not achieved by the end of the work day, a daily seal must be performed to temporarily close the membrane to prevent water infiltration.

3.08 CLEAN UP

A. Clean work under provisions of Section 01 70 00

B. Perform daily clean-up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a legally acceptable manner.

C. Prior to the manufacturer's inspection, the applicator must perform a pre-inspection to review all work and to verify all flashing has been completed.

END OF SECTION

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SECTION 07 84 13

FIRESTOPPING

PART 1 – GENERAL

1.01 SUMMARY

A. Related Documents:
The Drawings and general provisions of the Contract, including General and Supplementary General Conditions, and Division 1 Requirements, apply to the work in this Section.

1.2 DESCRIPTION OF WORK

A. The work of this Section consists of the provision of all plant, materials, labor and equipment and the like necessary or required for the complete execution of all firestopping and smoke seal work for this project as required by the schedules, keynotes and drawings, including, but not limited to the following:

NOTE – Firestopping is defined as a material, or combination of materials, to restore the integrity of fire rated walls and floors by maintaining an effective barrier against the spread of flame, smoke and toxic gases.

1. Provide firestopping and smoke seals as indicated on the drawings and as required to maintain full and continuous smoke and fire barrier between zones.

   Seal all penetrations between floor/ceiling plane with expanding foam. No fiber insulation packing is permitted.

   Cope and seal around all structural elements to insure smoke and fire barriers.

2. Provide firestopping of all openings in floors and walls both empty and those accommodating penetrating items such as cables and wires, cable trays, conduits, pipes, ducts, etc.; coordinate with Divisions 21, 22, 23 and 26.

3. Provide firestopping at joints between curtain walls and floor or roof openings and balance of openings between exterior walls and connecting floor assemblies at each floor.

4. Pack expansion joints in fire rated walls and floors;

5. Provide firestopping of openings at each floor level in shafts or stairwells.

1.03 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM)
   1. E 814 – Standard Method of Fire Tests of Through Penetration Fire Stops.
   2. E 119 – Methods of Fire Tests of Building construction and Materials.
   3. E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials.

B. Underwriters Laboratories, Inc. (UL)
   1. UL 1479 – Fire Tests of Through Penetration Fire Stops.
   2. UL 263 – Fire Tests of Building Construction and Materials.
   3. UL 723 – Surface Burning Characteristics of Building Materials.
   4. UL "Fire Resistance Directory" current year.

C. Factory Mutual (FM) Approval Guide, current year.

D. Building code o the jurisdiction of the work.

E. National Fire Protection Association
   1. NFPA 101 – Life Safety Code.
   2. NFPA 70 – National Electrical Code.

1.04 QUALITY ASSURANCE

A. Firestopping materials shall conform to both Flame (F) and Temperature (T) ratings as tested by nationally accepted test agencies per ASTM E 814 or UL 1479 fire tests.

   The F rating and T rating must be a minimum of 1 hour but not less than the fire resistance rating of the assembly being penetrated.

   The fire test shall be conducted with a minimum positive pressure differential of 0.03 inches of water column.

B. Firestopping shall be performed by a Specialty Contractor trained or approved, in writing, by firestop material manufacturer.
   Said specialist shall be as defined in the conditions.

   Equipment used shall be in accordance with firestop material manufacturer's written installation instructions.

C. Materials shall conform to all applicable governing codes.

D. All materials used in the work shall be certified "asbestos free" and shall be free from any and all solvents or components that require hazardous waste disposal or, that after curing, dissolve in water.

E. All materials shall comply with the interior finish flame spread and smoke developed requirements for the area in which they are installed. Coordinate with governing codes.

1.05 SUBMITTALS

A. Submit under provisions of Section 01 33 00.

B. Certification of specification compliance of all materials.

C. Manufacturer's printed product data and drawings indicating product characteristics, performance, detail applications and limiting criteria.

Submittal shall include applicable UL and/or FM assembly numbers for each material and proposed installation.

D. Manufacturer's installation instructions for each type of firestop required by the project.

E. Manufacturer's approval of nominated installer of firestopping and smoke seal products.

F. Mockups:
1. Prepare job mockup of the material proposed for use in the project as directed by Architect.
Approved markups shall be left in place as part of the finished project and will constitute and standard for remaining work, including aesthetics.

G. Manufacturers Material Safety Data Sheet (MSDS) must be submitted for each manufactured product.

1.06 PRODUCT DELIVERY STORAGE AND HANDLING

A. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.

B. Deliver all materials to be used in the work of this section to the project site in original sealed containers with manufacturer's brand and name, lot numbers, UL labeling, mixing and installation instructions clearly identified thereon.

C. Store all materials in accordance with manufacturer's directions.

All materials shall be dated with shelf life and shall be removed from the project site at the contractor's expense if date is expired.

1.07 PROJECT CONDITIONS

A. Conform to manufacturer's printed instructions for installation and when applicable, curing in accordance with temperature and humidity. Conform to ventilation and safety requirements.

B. Coordinate work required with work of other trades; firestopping shall, where practical, precede gypsum board or other applied sheet finishing operations.

C. Where firestopping is installed at locations which will remain exposed in the finished work, provide protection as necessary to prevent damage to adjacent surfaces and finishes, and protect as required against damage from other construction operations.

D. Adhesive and sealants use in the building interior [i.e., inside the exterior moisture barrier] shall not exceed VOC content limits of:
   1. Provisions of 01 81 10 Environmental Impact of Materials.
   2. Aerosol Adhesives: Green Seal Standard GC-36.

1.08 PREINSTALLATION CONFERENCE

A. A preinstallation conference shall be scheduled in accordance with Section 01 31 00 by the contractor with this specialty contractor and all other specialty contractors, subcontractor and the like to establish procedures to maintain optimum working conditions and to coordinate the work of this section with related and adjacent work.

1.09 COORDINATION

A. Coordinate construction of openings and penetrating items to ensure that through-penetration firestop systems are installed according to specified requirements, and comply with the following:
   1. Coordinate work of this section with similar work being performed by certain trades for their own work.
   2. All firestop work not performed by trades shall be performed under this section.
   3. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate through-penetration firestop systems.
   4. Notify the Architect at least seven days in advance of through-penetration firestop system installations; confirm dates and times on days preceding each series of installations.
   5. Do not cover up through-penetration firestop system installations that will become concealed behind other construction until the Architect and building inspector, if required by authorities having jurisdiction, have examined each installation.

PART 2 – PRODUCTS

2.01 SPECIFICATION STANDARD: For purposes of establishing standards of quality and levels of performance and not for the purposes of limiting competition, the basis of this specification is upon units as manufactured by one of the following and their respective model suitable for the intended application.

A. Bio Fireshield, Inc.; Damonmill Square, Concord, MA 01742.
   1. Novasit K-10 Firestop Mortar
   2. K-2 Firestop Mortar
   3. Biotherm Firestop Sealants and Caulk
   4. Firestop Sleeve
   5. Firestop Pillows
   6. Biostop 500 Intumescent Caulk

B. IPC Corp.
   1. KBS Mortar Seal
   2. Flamesafe Sealants and Caulk
   3. FPS 1000 Putty and 1077 Putty Pads
   4. Firestop Kits – FSK200
   5. KBS Seal Bags
   6. Quelpyre Tapes and Blankets

C. Dow Corning
   1. Firestop Sealant #2000
   2. Firestop Foam #2001

D. 3M Corporation
   1. Fire Barrier Caulk, CP-25WB
   2. Fire Barrier MPS-2 Putty and 4S Putty Pads
   3. Fire Barrier Intumescent Wrap Strip #FS-195

E. Nelson Firestop Products
   1. FSP Firestop Putty
   2. CMP Firestop Compound
   3. CLK Firestop Sealant
   4. PLW intumescent Pillow
   5. PCS Preformed Collar for Plastic Pipe Penetrations
   6. MPS Multi-Plug
   7. MCT Multi-Cable Transit
   8. EMCT Multi-Cable Transit and Plug
   9. CTG Firestop Coating
   10. CPS Composite Sheet

F. Tremco, Inc.
   1. Fyre-Sil and Fyre-Sil SL
   2. Fyre-Shield
   3. THC-900/901
   4. Dymeric, Dymonic Sealant Systems
   5. Compatible forming systems.

G. General Electric
   1. Pensil 100 Sealant
   2. Pensil 200 Foam
   3. Pensil 300 Joint Sealant
   4. Pensil 500 Putty
   5. Compatible forming systems.

H. U.S. Gypsum Company
   1. U.S.G. “Thermafiber” unfaced safing insulation with third party wrap, 3.5 pcf density, UL R-10905 label.
   2. U.S.G. “Firecode” compound.

I. Hilti Corporation
   1. Hilti CP 645 insulated firestop sleeve to replace existing pipe insulation

2.02 ACCESSORY ELEMENTS

A. Forming, damming materials shall be mineral fiber board or other suitable material recommended by nominated system manufacturer.

B. Primers, sealant and solvent cleaners shall be as recommended by the nominated system manufacturer.

C. Metal Systems – 20 gauge phosphatized, electrogalvanized steel plate or galvanized steel clips.

PART 3 – EXECUTION

3.01 INSPECTION AND ACCEPTANCE

A. Examine all surfaces and contiguous elements to receive work of this section and correct, as part of the work of this contract, any defects affecting installation.

B. Commencement of work will be construed as complete acceptability of surfaces and contiguous elements.

3.02 PREPARATION

A. The surface shall be dry, clean, and free of all foreign matter.

B. Do not apply firestopping to surfaces previously painted or treated with a sealer, curing compound, water repellant or other coatings unless tests have been performed to ensure compatibility of materials.

C. Provide primers as required which conform to manufacturer's recommendations for various substrates and conditions.

D. Mask where necessary to protect adjoining surfaces.

E. Remove excess material and stains on surfaces as required.

3.03 INSTALLATION – GENERAL SYSTEMS

A. Install in strict accordance with manufacturer's printed instructions.

B. Ensure that anchoring devices, backup materials, clips, sleeves, supports and other materials used in the actual fire test are installed.

C. Install firestopping with sufficient pressure to properly fill and seal openings to ensure an effective smoke seal.

D. Tool or trowel exposed surfaces. Remove excess firestop material promptly as work progresses and upon completion.

E. Install dams when required to properly contain firestopping materials within openings and as required to achieve required fire resistance ratings. Combustible damming materials must be removed after appropriate curing. Incombustible damming materials may be left as a permanent component of the firestopping systems.

3.04 FIRESTOPPING CONSTRUCTION AT BUILDING EXTERIOR PERIMETERS, INTERIOR WALLS, SHAFTS, ETC.

A. Install material of proper size on continuous plates or clips as required for proper support in order to safe-off area between exterior walls, interior walls and shafts and floor slabs, said walls and roof areas leaving NO VOIDS.

B. Firestopping is required at all juncture conditions whether or not clips, angles or other structural elements exist either intermittently or continuously.

C. Attach plates and clips to floor levels and other breaks and extend through framing to sheathing or other solid strata.

D. Where metal decking flutes, either parallel or perpendicular to walls, occur and are open, same shall be fully packed and sealed with proper firestopping system.

E. Where firestopping is accomplished after installation of drywall or other applied sheet finish, all spaces between penetrations and finish shall be filled to the thickness of said sheet finish with intumescent caulk.

F. At all linear openings, fill voids with a minimum of 6 inches of minimum 3.5 lb./cu. ft. density safing insulation as specified in Part 2 herein and cover entire surface with UL listed firestop sealant of one of nominated manufacturers identified in Part 2 herein.

3.05 PENETRATION SEALS

A. Penetrations are defined as conduits, cables, wires, piping, ducts or other elements passing through one through one or both outer surfaces of fire rated walls, floors or partitions and shall be firestopped on both sides of penetration in accordance with requirements set forth in Paragraph 1.04 of this Section.

B. Where sleeves are used, same shall be as specified in Part 2 herein; in event that sleeves are not used, core openings and caulk penetrating items with intumescent system the full length of penetration and seal on both sides with intumescent caulk.

C. Residual openings within square or rectangular holes shall be filled with compounds applicable for substrate encountered and all penetrations sealed on both sides with caulk.

D. Where existing pipes penetrate new partition, replace existing pipe insulation with new insulated firestop sleeve and seal perimeter of remaining opening on both sides with caulk.

3.06 FIELD QUALITY CONTROL

A. Contractor shall immediately notify the Architect if the firestopping systems herein specified cannot meet the requirements of the specification.

B. Contractor shall examine firestops to ensure proper installation and full compliance with this specification.

C. All areas of work must be accessible until inspection by the applicable code authorities.

D. Correct unacceptable firestops and provide additional inspection to verify compliance with this specification at no additional cost.

3.07 CLEANING

A. When finished work will be visible, clean adjacent surfaces in accordance with manufacturer's printed instructions.

B. If visible in the finished work, remove temporary dams after initial cure of firestops.

C. Correct staining and discoloring on adjacent surfaces.

D. Remove all debris and excess materials entirely from site and leave work in a neat and clean condition.

END OF SECTION

SECTION 07 92 13

JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Urethane joint sealants.

1.3 PRECONSTRUCTION TESTING

A. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.

1. Use ASTM C 1087to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
2. Testing will not be required if joint-sealant manufacturers submit joint preparation data that are based on previous testing, not older than 24 months, of sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 33 00.

B. Product Data: For each joint-sealant product indicated.

C. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

D. Joint-Sealant Schedule: Include the following information:
1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

E. Product Certificates: For each kind of joint sealant and accessory, from manufacturer.

F. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that sealants comply with requirements.

G. Preconstruction Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
   1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
   2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

C. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.

1.6 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:
   1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
   2. When joint substrates are wet.
   3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
   4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.7 WARRANTY

A. Warranty Period: Two years from date of Substantial Completion. Provide under the provisions of Section 01 78 00.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers as listed below

B. Substitutions: Under provisions of Section 01 60 00.

2.2 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. VOC Content of Interior Sealants: Provide sealants and sealant primers for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Part 59, Subpart D (EPA Method 24):
   1. Architectural Sealants: 250 g/L.
   2. Sealant Primers for Nonporous Substrates: 250 g/L.
   3. Sealant Primers for Porous Substrates: 775 g/L.

C. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full standard range.

2.3 SILICONE JOINT SEALANTS

A. Single-Component, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, for Use NT, M, G, A and O.

   1. Products: Subject to compliance with requirements, provide one of the following:
      a. Dow Corning Corporation; 790.
      b. GE Advanced Materials: SilPruf SCS 2700 LM
      c. Tremco Incorporated; Spectrem 3

B. Single-Component, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, for Use NT, G, A and O.

   1. Products: Subject to compliance with requirements, provide one of the following:
      a. Dowsil 795 Silicone structural Sealant.
      b. GE Advanced Materials: SilPruf SCS - 2000
      c. Tremco Incorporated; Spectrem 2
      d. Pecora 864 Silicone

2.4 URETHANE JOINT SEALANTS

A. Single-Component, Nonsag, Urethane Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT.

   1. Products: Subject to compliance with requirements, provide one of the following:
      a. Pecora Corporation; Dynatrol I-XL.
      b. Sika Corporation, Construction Products Division; Sikaflex - 1a.
      c. Tremco Incorporated; Dymonic 100

2.5 JOINT SEALANT BACKING

A. General: Provide sealant backings of material that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings Rods: ASTM C 1330, Type C, Closed Cell, provide backing rods of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.6 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
   1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
   2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air.
   3. Remove laitance and form-release agents from concrete.
   4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or

by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
   1. Do not leave gaps between ends of sealant backings.
   2. Do not stretch, twist, puncture, or tear sealant backings.
   3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
   1. Place sealants so they directly contact and fully wet joint substrates.
   2. Completely fill recesses in each joint configuration.
   3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
   1. Remove excess sealant from surfaces adjacent to joints.
   2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
   3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
      a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

3.4 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

B. Clean under provisions of Section 01 70 00.

3.5 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.6 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces.
   1. Joint Locations:
      a. Control and expansion joints on exposed interior surfaces of exterior walls.
      b. Perimeter joints of exterior openings where indicated.
      c. Vertical joints on exposed surfaces of interior unit masonry, concrete walls and partitions.
      d. Perimeter joints between interior wall surfaces and frames of interior doors and windows.
      e. Other joints as indicated.
   2. Urethane Joint Sealant: Single component, nonsag, Class 35
   3. Joint-Sealant Color: As selected by Architect from manufacturer's full standard range.

B. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
   1. Joint Locations:
      a. Construction joints in cast-in-place concrete.
      b. Control and expansion joints in unit masonry.
      c. Joints between different materials listed above.
      d. Perimeter joints between materials listed above and frames of doors, windows and louvers.
      e. Control and expansion joints.
      f. Other joints as indicated.
   2. Silicone Joint Sealant: Single component, Type S, Grade NS, Class 50.
   3. Joint-Sealant Color: As selected by Architect from manufacturer's full standard range.

END OF SECTION

SECTION 08 13 13

STEEL DOORS

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Steel doors.

1.02 RELATED WORK

A. Section 08 71 00 – Door Hardware

B. Section 08 71 50 – Weatherstripping

C. Section 09 91 00 - Painting: Field painting of doors and frames.

1.03 REFERENCES

A. ASTM E152 - Methods of Fire Tests of Door Assemblies

B. DHI - Door Hardware Institute: The Installation of commercial steel doors and steel frames, insulated steel doors in wood frames and builder's hardware.

C. NFPA - 80 - Fire Doors and Windows

D. NFPA - 252 - Fire Tests for Door Assemblies

E. ANSI/SDI-100 - Standard Steel Doors and Frames

F. UL 10B - fire Tests of Door Assemblies

1.04 QUALITY ASSURANCE

A. Conform to requirements of SDI-100.

B. Fire rated door and frame construction to conform to ASTM E152, NFPA 80, NFPA 252, and UL 10B.

1.05 REGULATORY REQUIREMENTS

A. Conform to State Building Code and State Fire Code for fire rated frames and doors.

1.06 SUBMITTALS

A. Submit shop drawings and product data under provisions of Section 01 31 00.

B. Indicate door elevations, internal reinforcement, closure method, and cut outs for glazing.

C. Submit manufacturer's installation instructions under provisions of Section 01 33 00.

1.07 DELIVERY, STORAGE AND PROTECTION

A. Protect products under provisions of Section 01 60 00.

B. Protect doors with resilient packaging sealed with heat shrunk plastic.

C. Break seal on-site to permit ventilation.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Steelcraft

B. Other acceptable manufacturers offering equivalent products.
1. Ceco Door
2. De La Fontaine

C. Substitutions: Under provisions of Section 01 60 00.

2.02 HOLLOW METAL DOORS

A. TYPES

1. Exterior doors: SDI Grade III, extra heavy duty, fire rated, Model 2 (seamless and 16 gage) (Steelcraft LW door series)
Rated doors shall be as follows:
1-1/2 hr. rating

B. MATERIALS

1. Fire rated doors:
a. Faces: 16 gage, A60 galvannealed steel in accordance with ASTM A525. (A60 coating is .6 oz. of zinc per square foot of steel total coverage)
b. Perimeter channels to be 16 gage and welded to panels
c. Core to be honeycomb.
d. Top cap required.
e. All fire rated doors shall carry a UL label.

C. FABRICATION

1. All doors shall be custom made, of the types and sizes shown on approved shop drawings, and shall be fully welded seamless construction with no visible seams or joints on their

faces or vertical edges. Inverted end channel on bottom welded to both face sheets. Door thickness shall be 1-3/4" unless noted otherwise.

2. All doors shall be strong, rigid and neat in appearance, free from warpage or buckle. Corner bends shall be true and straight and of minimum radius for the gage of metal used.

3. Door faces shall be joined at their vertical edges by a continuous weld extending the full height of the door seam. All such welds shall be ground and smoothed to make them invisible and provide a smooth flush surface.

4. The vertical edge profiles on single acting swing doors shall be beveled 1/8" in 2".

5. All hardware furnished by the hardware contractor for single-acting doors shall be designed for beveled edges as specified above.

6. Hardware reinforcements:

   a. Doors shall be mortised, reinforced, drilled and tapped at the factory for fully templated hardware in accordance with the approved hardware schedule and templates provided by the hardware contractor. Where surface-mounted hardware (or hardware, the interrelation of which is to be adjusted upon installation-such as top and bottom pivots, floor closers, etc.) is to be applied, doors shall have reinforcing plates only: all drilling and tapping shall be done by the installer.

   b. Minimum gages for hardware reinforcing plates shall be as follows:
      1. Hinge and pivot reinforcements 8 gage.
      2. Concealed or surface mounted closers - 14 gage.
      3. Lock face, flush bolts and all other surface mounted hardware - 16 gage.

7. Steel door material is to contain a minimum of 30 % Pre-Consumer recycled content and 50% Post-Consumer recycled content.

2.04 FINISH

A. After fabrication, all tool marks and surface imperfections shall be dressed, filled and sanded as required to make all faces and vertical edges smooth, level and free of all irregularities.

B. Doors shall be thoroughly cleaned and phosphatized.

C. All surfaces exposed to view shall receive a factory applied single coat of rust inhibiting prime paint baked-on in accordance with ANSI A224,1.

D. The finish coats of paint shall be field applied by others in accordance with the painting section of these specifications.

PART 3 - EXECUTION

3.01 INSTALLATION OF DOORS

A. Install doors in accordance with DHI.

B. Install doors plumb and in true alignment in a prepared opening and fasten them to achieve the maximum operational effectiveness and appearance.

3.02 TOLERANCES

A. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

B. All doors that are fire rated and are being installed in existing frames are to be adjusted or shimmed as required to meet the code requirement clearances around the perimeter between the door, meeting edges of door pairs, finish floor and the frame.

3.03 ADJUSTING AND CLEANING

A. Adjust hardware for smooth and balanced door movement.

B. Clean in accordance with Section 01 70 00.

END OF SECTION

SECTION 08 71 00

DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes commercial door hardware for the following:

1. Swinging doors.

B. Door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.

C. Related Sections:

1. Section 08 13 13 - Steel Doors

D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ICC/IBC - International Building Code.
3. NFPA 80 - Fire Doors and Windows.
4. NFPA 101 - Life Safety Code.
5. State Building Codes, Local Amendments.

E. Standards: All hardware specified herein shall comply with the following industry standards:

1. ANSI/BHMA Certified Product Standards - A156 Series

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes. Submit under provisions of Section 01 33 00.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware

Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
3. Content: Include the following information:
   a. Type, style, function, size, label, hand, and finish of each door hardware item.
   b. Manufacturer of each item.
   c. Fastenings and other pertinent information.
   d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
   e. Explanation of abbreviations, symbols, and codes contained in schedule.
   f. Mounting locations for door hardware.
   g. Door and frame sizes and materials.
4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Operating and Maintenance Manuals: Provide manufacturer’s operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Submittals. The manual to include the name, address, and contact information of the manufacturers providing the hardware and their nearest service representatives. The final copies delivered after completion of the installation test to include "as built" modifications made during installation, checkout, and acceptance.

D. Warranties and Maintenance: Special warranties specified in this Section.

1.4 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

B. Installer Qualifications: Installers, trained by the primary product manufacturers, with a minimum 3 years documented experience installing both standard and electrified builders hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

C. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor in good standing by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural

Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

1. Scheduling Responsibility: Preparation of door hardware and keying schedules.

D. Source Limitations: Obtain each type and variety of Door Hardware specified in this Section from a single source, qualified supplier unless otherwise indicated.

E. Regulatory Requirements: Comply with NFPA 70, NFPA 80, NFPA 101 and ANSI A117.1 requirements and guidelines as directed in the model building code including, but not limited to, the following:

1. Where indicated to comply with accessibility requirements, comply with the State Building Code and the Americans with Disabilities Act (ADA), "Accessibility Guidelines for Buildings and Facilities (ADAAG)," ANSI A117.1 as follows:

a. Handles, Pulls, Latches, Locks, and other Operating Devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.
b. Door Closers: Comply with the following maximum opening-force requirements indicated:
1) Interior Hinged Doors: 5 lbf applied perpendicular to door.
2) Fire Doors: Minimum opening force allowable by authorities having jurisdiction.

2. NFPA 101: Comply with the following for means of egress doors:

a. Latches, Locks, and Exit Devices: Not more than 15 lbf to release the latch. Locks shall not require the use of a key, tool, or special knowledge for operation.

3. Fire-Rated Door Assemblies: Provide door hardware for assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252 (neutral pressure at 40" above sill) or UL-10C.
a. Test Pressure: Positive pressure labeling.

F. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.

G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:

1. Function of building, purpose of each area and degree of security required.
2. Installation of permanent keys, cylinder cores and software.
3. Address and requirements for delivery of keys.

H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1. Prior to installation of door hardware, arrange for manufacturers' representatives to hold a project specific training meeting to instruct the installing contractors' personnel on the proper installation

and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.

2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedures.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.

B. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

C. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

D. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Field verify all dimensions and locations prior to shop drawing submittal.

1.7 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturers, agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner, this includes all labor required to repair or replace product. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.

2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.

D. Special Warranty Periods:
1. Ten years for extra heavy duty cylindrical (bored) locks and latches.
2. Seven years for heavy duty cylindrical (bored) locks and latches.
3. Ten years for manual door closers.

1.8 MAINTENANCE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.

1. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3.

a. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements.
The hardware schedule is based on the following manufacturers:
1. Locks, passage & privacy sets-Sargent
2. Exit devices - Sargent
3. Continuous hinge - Roton by Hager Hinge Co.

B. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in AIA Document A701 – Instructions To Bidders and Division 01, Section 01 60 00, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

A. Continuous Geared Hinges: ANSI/BHMA A156.26 certified continuous geared hinge with minimum 0.120-inch thick extruded 6060 T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Provide concealed flush mount (with or without inset), full surface, or half surface, in standard and heavy duty models, as specified in the Hardware Sets. Concealed continuous hinges to be U.L. listed for use on up to and

including 90 minute rated door installations and U.L. listed for windstorm components where applicable. Factory cut hinges for door size.

1. Acceptable Manufacturers:

   a. Roton by Hager Hinge Co. (RO)
   b. Bommer Industries (BO).
   c. McKinney Products (MK).
   d. Pemko Manufacturing (PE).
   e. Stanley Hardware (ST).
   f. Select Hinges (SH)

2.3 DOOR OPERATING TRIM

A. Flush Bolts: ANSI/BHMA A156.3 and A156.16, Grade 1, certified automatic, self-latching flush bolts. Furnish dust proof strikes for bottom bolts. U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable. Provide related accessories (mounting brackets, strikes, door to door thermal pins, coordinators, etc.) as required for appropriate installation and operation.

   1. Acceptable Manufacturers:

      a. Burns Manufacturing (BU).
      b. Door Controls International (DC).
      c. Ives (IV).
      d. Rockwood Manufacturing (RO).
      e. Trimco (TC).

B. Coordinators: ANSI/BHMA A156.3 certified door coordinators consisting of active-leaf, hold-open lever and inactive-leaf release trigger. Coordinators fabricated from steel with nylon-coated strike plates and built-in adjustable safety release.

   1. Acceptable Manufacturers:

      a. Burns Manufacturing (BU).
      b. Door Controls International (DC).
      c. Ives (IV).
      d. Rockwood Manufacturing (RO).
      e. Trimco (TC).

2.4 CYLINDERS AND KEYING

A. Supply two keys for each lock.

B. Provide all keys of nickel silvermetal only.

C. Hardware consultant shall meet with owner/architect to determine specific keying requirements and functions of locks.

2.5 MECHANICAL LOCKS AND LATCHING DEVICES

A. Cylindrical Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.2, Series 4000, Grade 1 certified cylindrical (bored) locksets **and be tested by an independent third party testing agency to meet a minimum of 10 million cycle tests** furnished in the functions as specified in the Hardware Sets. Lock chassis fabricated of heavy gauge steel, zinc dichromate plated, with through-bolted application. Furnish with solid cast levers, standard 2 3/4” backset, and 1/2" (3/4" at rated paired openings) throw brass or stainless steel latchbolt. Locks are to be non-handed and fully field reversible.

1. Locksets to incorporate a free-wheeling lever design with a lifetime warranty against lever sag and spring breakage on all locking functions.

2. Acceptable Manufacturers:

   a. Corbin Russwin Hardware (RU) – CL3300 Series.
   b. Sargent Manufacturing (SA) – 10 Line.
   c. Schlage (SC) – ND Series.

3. Lever shall be “L” and L Rose or equal from acceptable manufacturers.

4. Cylinders: Sargent high security interchangeable core 6-pin or equal.

5. Tactile warning - Levers shall be KNURLED or MILLED at doors leading into all hazardous locations (ie. electric rooms, mechanical rooms, elevator machine rooms). Do not use abrasive coating or applied tape in lieu of knurling or milling.

2.6 DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.

2. Standards: Closers to comply with UL-10C and UBC 7-2 for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.

3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.

4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
   a. Where closers are indicated to have a cushion-type stop, provide heavy duty arms and brackets with spring stop mechanism to cushion door when opened to maximum degree.

b. Closers shall not be installed on exterior side of doors; where possible, install the closers on door for optimum aesthetics. Provide drop plates or other accessories as required for proper mounting.

5. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for a complete installation.

B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 surface mounted, heavy duty door closers **and be tested by an independent third party testing agency to meet a minimum of 5 million cycle tests**, with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units and high impact, non-corrosive plastic covers standard.

1. Acceptable Manufacturers:

a. Corbin Russwin Hardware (RU) - DC7500 Series.
b. LCN Closers (LC) - 4040XP Series.
c. Sargent Manufacturing (SA) - 351 Series.
d. Norton Door Controls (NO) - 7500 Series.

2.6 FABRICATION

C. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.7 FINISHES

A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.

C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

D. Hardware in General: US26D Dull Chrome

E. Continuous hinges - clear anodized aluminum (selected by Architect)s

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.

3.3 INSTALLATION

A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
2. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."

C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

D. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

A. Field Inspection: Supplier will perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

A. Clean work under provisions of 01 70 00.

B. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

C. Clean adjacent surfaces soiled by door hardware installation.

D. Clean operating items as necessary to restore proper finish. and provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SCHEDULE

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

3.07 COMPLETE HARDWARE INSTALLATION

A. The following schedule listings cover typical openings. The Contractor shall be responsible for complete examination of the drawings and shall furnish all hardware required. Any hardware necessary but not specifically mentioned herein shall be of the like quality, weight, design and finish as similar openings or items specified herein.

3.08 HARDWARE SCHEDULE:

HW-1 Exterior Pairs Doors

2 Roton Hinges 780-041 HD
1 Set Auto Flush Bolts
1 Lockset 10G04 with tactile warning
1 Coordinator
2 Closers with cush-n-stop

END OF SECTION

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SECTION 08 71 50

WEATHERSTRIPPING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. The furnishing and installation of all door weatherstripping, sound and smoke proofing.

1.02 RELATED SECTIONS

A. 08 13 13 - Steel doors

1.03 DESIGN REQUIREMENTS

A. All work not shown or specified but required to complete the installation shall be provided.

B. Provide and install weatherstripping on all new exterior doors.

1.04 SUBMITTALS

A. Submit under provisions of Section 01 33 00.

B. Shop drawings: Indicate various styles with model numbers and manufacturer.

C. Provide samples if asked for by Architect.

1.05 QUALIFICATIONS

A. Installer: Products specified under this section shall be installed by competent tradesmen experienced in this work.

1.06 REGULATORY REQUIREMENTS

A. Work shall satisfy requirements of government agencies having jurisdiction.

B. All thresholds to comply with the state building code and ANSI A117.1.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.

1.08 FIELD MEASUREMENTS

A. Field verify all dimensions prior to installation.

1.09 WARRANTY

A. Provide one year warranty under provisions of Section 01 78 00.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Pemko

B. Other acceptable manufacturers offering equivalent products.
1. Accurate Metal Weatherstrip Co., Inc.
2. Zero International, Inc.

C. Substitutions: Under provisions of Section 01600.

2.02 MATERIALS

A. Exterior in swinging metal door with metal jamb

1. Head and jambs: 316DPK
2. Astragal: 316DPK
3. Door Shoe with rain drip: 2221DPK

PART 3 - EXECUTION

3.01 INSTALLATION

A. Weatherstripping shall be applied in accordance with manufacturers specifications. Thresholds shall be set in elastic cement and held in place with rawl plugs and aluminum screws.

3.02 DISSIMILAR MATERIALS

A. Where aluminum surfaces come in contact with metals other than stainless steel, zinc, white bronze or other metals compatible with aluminum, aluminum surfaces shall be kept from direct contact with such parts by (a) painting the dissimilar metal with a coating of heavy bodied bituminous paint, (b) a good quality caulking placed between aluminum and dissimilar metal, or (c) a non-absorptive tape of gasket.

3.03 ADJUSTMENTS

A. Adjust weatherstripping as required to provide proper weatherproofing.

B. Gaskets and/or caulking shall be provided as required for a proper installation.

3.04 CLEANING

A. Clean work under provisions of Section 01 70 00.

END OF SECTION

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SECTION 09 65 00

RESILIENT FLOORING

PART 1 - GENERAL

1.01 WORK INCLUDES

A. Installation of resilient flooring and accessories as indicated.

1.02 RELATED SECTIONS

A. Section 14 21 23 - Electric Traction Passenger Elevator: Floor

1.03 REFERENCES

A. ASTM E84 - Surface Burning Characteristics of Building Materials.

B. FS L-F-1641 - Floor Covering, Translucent or Transparent Vinyl Surface, with Backing.

C. FS L-F-475 - Floor Covering, Vinyl Surface (Tile and Roll), with Backing.

D. FS SS-T-312 - Tile, Floor: Asphalt, Rubber, Vinyl, Vinyl Composition.

1.04 SUBMITTALS

A. Submit shop drawings and product data under provisions of Section 01 33 00.

B. Provide product data on specified products, describing physical and performance characteristics sizes, patterns and colors available.

C. Submit samples under provisions of Section 01 33 00.

D. Submit two samples 3 x 3 inches in size, illustrating the full range color and pattern for each floor material specified.

E. Submit manufacturer's installation instructions under provisions of Section 01 33 00.

F. Sustainable Building Material Submittal:
   1. Provide documentation indicating percentages of post-consumer and pre-consumer recycled content.
   2. Identify each regional material along with the location of its harvest, extraction, or manufacture.

1.05 OPERATION AND MAINTENANCE DATA

A. Submit cleaning and maintenance data under provisions of Section 01 78 00.

B. Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-finishing.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, protect, and handle work to site under provision of Section 01 60 00.

1.07 ENVIRONMENTAL REQUIREMENTS

A. Store materials for three days prior to installation in area of installation to achieve temperature stability.

B. Maintain minimum 70 degrees F air temperature at flooring installation areas for three days prior to, during, and 24 hours after installation of materials.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Mohawk Group

B. Substitutions: Under provisions of Section 01 60 00.

2.02 MATERIALS

A. Vinyl Tile
Manufacturer: Mohawk Group – Hard Surface
Collection: Hot & Heavy
Style: Mixte Solid
Specifications:
Overall Gauge: 0.20”
Wear Layer: 20 mil
Size: 36” x 36”

2.03 COLORS SELECTION

A. All colors shall be selected by the Architect from the manufacturer's standard color selections.

B. Each elevator floor is to consist of two colors of floor tile. See floor plan for layout.

2.04 ACCESSORIES

A. Subfloor Filler: White premix latex; mix with water to produce cementitious paste. "Armstrong" S-180 Latex underlayment.

B. Primers and Adhesives: Low VOC and waterproof; types recommended by flooring manufacturer for specific materials and as required to maintain product warranty.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are smooth and flat with maximum variation of 1/8 inch in 10 ft., and are ready to receive work.

B. Beginning of installation means acceptance of existing substrate and site conditions.

3.02 PREPARATION

A. Remove sub-floor ridges and bumps. Fill low spots, cracks, joints, holes, and other defects with subfloor filler.

B. Apply, trowel, and float filler to leave a smooth, flat, hard surface.

C. Prohibit traffic from area until filler is cured.

D. Vacuum clean substrate.

3.03 INSTALLATION

A. Install in accordance with manufacturers' instructions.

B. Mix vinyl tile from container to ensure shade variations are consistent.

C. Spread only enough adhesive to permit installation of materials before initial set.

D. Set flooring in place, press with heavy roller to attain full adhesion.

E. Install with minimum 1/2 full size tile width at room or area perimeter.

F. Terminate flooring at centerline of door openings where adjacent floor finish is dissimilar.

G. Scribe flooring to walls and other appurtenances to produce tight joints.

H. NOTE:
New flooring is to be cut as required to abut edge of existing bronze anchor. Surface of flooring is to be flush with the surface of the anchor. Anchor is to be fastened to subfloor as required and as approved by Architect..

I. Clean finished floor thoroughly in accordance with manufacturer’s instructions. The floor will be maintained as a No Polish, No Buffing finish.

3.06 PROTECTION

A. Prohibit traffic on floor finish for 48 hours after installation.

3.07 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

B. Clean surfaces in accordance with manufacturer's instructions.

END OF SECTION

SECTION 09 67 23

RESINOUS FLOORING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This section includes the following:

1. Resinous flooring system in location shown on the drawings.

1.3 SYSTEM DESCRIPTION

A. The work shall consist of preparation of the substrate, the furnishing and application of an epoxy based multi roller applied flooring system with flintshot aggregate and urethane topcoat. The system shall have the color and texture as specified by the Architect with a nominal thickness of 1/8 inch. It shall be applied to the prepared area as defined in the plans strictly in accordance with the Manufacturer's recommendations.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 33 00.
B. Product Data: Latest edition of Manufacturer's literature including performance data and installation procedures.
C. Manufacturer’s Safety Data Sheet (SDS) for each product being used.
D. Samples: A 3 x 3 inch square sample of the proposed system. Color, texture, and thickness shall be representative of overall appearance of finished system subject to normal tolerances.

1.5 QUALITY ASSURANCE

A. The Manufacturer shall have a minimum of 10 years experience in the production, sales, and technical support of epoxy and urethane industrial flooring and related materials.
B. The Applicator shall have a minimum three years documented experience in installation of the flooring system as confirmed by the manufacturer in all phases of surface preparation and application of the product specified.
C. System shall be in compliance with the Indoor Air Quality requirements of California section 01350 as verified by a qualified independent testing laboratory.
D. A pre-installation conference shall be held between Applicator, General Contractor and the Architect for review and clarification of this specification, application procedure, quality control, inspection and acceptance criteria and production schedule.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site, and store and protect them under provisions of Section 01 60 00.
B. Packing and Shipping

1. All components of the system shall be delivered to the site in the Manufacturer's packaging, clearly identified with the product type and batch number.

C. Storage and Protection
1. The Applicator shall be provided with a storage area for all components. The area shall be between 60° F and 90° F, dry, out of direct sunlight and in accordance with the Manufacturer's recommendations and relevant health and safety regulations.
2. Copies of Safety Data Sheets (SDS) for all components shall be kept on site for review by the Architect or other personnel.

D. Waste Disposal
1. The Applicator shall be provided with adequate disposal facilities for non-hazardous waste generated during installation of the system.

1.7 PROJECT CONDITIONS

A. Site Requirements
1. Application may proceed while air, material and substrate temperatures are between 60° F and 90° F providing the substrate temperature is above the dew point. Outside of this range, the Manufacturer shall be consulted.
2. The relative humidity in the specific location of the application shall be less than 85 % and the surface temperature shall be at least 5 F above the dew point.
3. The Applicator shall ensure that adequate ventilation is available for the work area.
4. The Applicator shall be supplied with adequate lighting equal to the final lighting level during the preparation and installation of the system.

C. Safety Requirements
1. All open flames and spark-producing equipment shall be removed from the work area prior to commencement of application.
2. "No Smoking" signs shall be posted at the entrances to the work area.
3. Non-related personnel in the work area shall be kept to a minimum.

1.8 WARRANTY

A. Submit a two year warranty against defects in material and workmanship upon substantial completion of installation.

PART 2 – PRODUCTS

2.1 MANUFACTURER

A. Dur-A-Flex, Inc., 95 Goodwin Street, East Hartford, CT 06108, Phone: (860) 528-9838, Fax: (860) 528-2802
B. Substitutions: Under provisions of Section 01 60 00.

2.2 FLOORING

A. Dur-A-Flex, Inc, Shop Floor, Epoxy-Based seamless flooring system.
1. System Materials:
a. Primer: Dur-A-Flex, Inc, Dur-A-Glaze #4 WB resin and hardener.
b. Broadcast and Grout Coat: Dur-A-Flex, Inc, Shop Floor resin and hardener.

c. The aggregate shall be Dur-A-Flex, Inc. Flintshot aggregate.
d. Topcoat: Dur-A-Flex, Inc. Armor Top resin, hardener and grit.

2. Patch Materials
   a. Shallow Fill and Patching: Use Dur-A-Flex, Inc. Dur-A-Glaze #4 Cove Rez.
   b. Deep Fill and Sloping Material (over ¼ inch): Use Dur-A-Flex, Inc. Dur-A-Crete.

2.3 COLORS

A. Finish color to be selected by the Architect from the manufacturer's standard colors.

2.4 PRODUCT REQUIREMENTS

A.	Primer	Dur-A-Glaze #4 WB
1.	Percent Solids	56 %
2.	VOC	2 g/L
3.	Bond Strength to Concrete ASTM D 4541	550 psi, substrates fails
4.	Hardness, ASTM D 3363	3H
5.	Elongation, ASTM D 2370	9 %
6.	Flexibility (1/4: Cylindrical mandrel), ASTM D 1737	Pass
7.	Impact Resistance, MIL D-2794	>160
6.	Abrasion Resistance ASTM D 4060, CS 17 wheel, 1,000 g Load	30 mg loss

B.	Broadcast and Grout Coat	Dur-A-Glaze Shop Floor
1.	VOC	7.9 g/L
2.	Compressive Strength, ASTM D 695	17,500 psi
3.	Tensile Strength, ASTM D 638	4,000 psi
4.	Flexural Strength, ASTM D 790	6,250 psi
5.	Flexural Modulus of Elasticity, ASTM D 790	6.2×10^5
6.	Abrasion Resistance, ASTM D 4060 C-10 Wheel, 1,000 gm load, 1,000 cycles	24 mg loss
7.	Flame Spread/NFPA-101, ASTM E 84	Class A
8.	Flammability, ASTM D 635	Self Extinguishing
9.	Indentation, MIL D-3134	0.025 Max
10.	Impact Resistance MIL D-3134	Pass
11.	Water Absorption. MIL D-24613	0.04%

C.	Topcoat		Armor Top
1.	Percent Solids		95 %
2.	VOC		0 g/L
3.	Tensile Strength, ASTM D 2370		7,000 psi
4.	Adhesion, ASTM 4541		Substrate Failure
5.	Hardness, ASTM D 3363		4H
6.	60^0 Gloss ASTM D 523		70
7.	Abrasion Resistance, ASTM D4060	Gloss	Satin
	CS 17 wheel (1,000 g load) 1,000 cycles	4	8 mg loss with grit
		10	12 mg loss without grit
8.	Pot Life, 70 F, 50% RH		2 Hours
9.	Full Chemical Resistance		7 days

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas and conditions, with Applicator present, for compliance with requirements for maximum moisture content, installation tolerances and other conditions affecting flooring performance.
   1. Verify that substrates and conditions are satisfactory for flooring installation and comply with requirements specified.

3.2 PREPARATION

A. General
   1. New and existing surfaces shall be free of oil, grease, curing compounds, loose particles, moss, algae growth, laitance, friable matter, dirt, and bituminous products.
   2. Moisture Testing: Perform tests recommended by manufacturer and as follows.
      a. Perform relative humidity test using is situ probes, ASTM F 2170. Proceed with installation only after substrates have a maximum 75% relative humidity level measurement.
   3. There shall be no visible moisture present on the surface at the time of application of the system. Compressed oil-free air and/or a light passing of a propane torch may be used to dry the substrate.
   4. Mechanical surface preparation
      a. Shot blast all surfaces to receive flooring system with a mobile steel shot, dust recycling machine (Blastrac or equal). All surface and embedded accumulations of paint, toppings, hardened concrete layers, laitance, power trowel finishes and other similar surface characteristics shall be completely removed leaving a bare surface.
      b. Floor areas inaccessible to the mobile blast machines shall be mechanically abraded to the same degree of cleanliness, soundness and profile using diamond grinders, needle guns, bush hammers, or other suitable equipment.
      c. Where the perimeter of the substrate to be coated is not adjacent to a wall or curb, a minimum 1/4 inch key cut shall be made to properly seat the system, providing a smooth transition between areas. The detail cut shall also apply to drain perimeters and expansion joint edges.
      d. Cracks and joints (non-moving) greater than 1/8 inch wide are to be chiseled or chipped-out and repaired per manufacturer's recommendations.
   5. At spalled or worn areas, mechanically remove loose or delaminated material to a sound substrate and patch per manufactures recommendations.

3.3 APPLICATION

A. General
   1. The system shall be applied in seven distinct steps as listed below:
      a. Substrate preparation
      b. Priming
      c. First broadcast coat application with first aggregate broadcast
      d. Second broadcast coat with second aggregate broadcast
      e. Grout coat application, sand floor (if required)
      f. Topcoat application, urethane
   2. Immediately prior to the application of any component of the system, the surface shall be dry and any remaining dust or loose particles shall be removed using a vacuum or clean, dry, oil-free compressed air.

3. The handling, mixing and addition of components shall be performed in a safe manner to achieve the desired results in accordance with the Manufacturer's recommendations.
4. The system shall follow the contour of the substrate unless pitching or other leveling work has been specified by the Architect.
5. A neat finish with well-defined boundaries and straight edges shall be provided by the Applicator.

B. Primer

1. The primer shall consist of a liquid resin and hardener that is mixed at the ratio of 1 parts resin to 4 part hardener per the manufacturer’s instructions.
2. The primer shall be applied by flat squeegee and back rolled at the rate of 200-250 sf/gal to yield a dry film thickness of 4 mils.

C. Broadcast Coat
1. The broadcast coat shall be applied as a double broadcast system as specified by the Architect.
2. The broadcast coat shall be comprised of two components, a resin, and hardener as supplied by the Manufacturer and mixed in the ratio of 2 parts resin to 1 part hardener.
3. The resin shall be added to the hardener and thoroughly mixed by suitably approved mechanical means.
4. The broadcast coat shall be applied over horizontal surfaces using “v” notched squeegee and back rolled at the rate of 90-100 sf/gal.
5. Quartz aggregate shall be broadcast to excess into the wet material at the rate of 0.5 lbs/sf.
6. Allow material to fully cure. Vacuum, sweep and/or blow to remove all loose aggregate.
7. Apply a second coat of resin with a coverage rate of 90-100 sf/gal and broadcast aggregate to excess at the rate of 0.5 lbs/sf.
8. Allow material to fully cure. Vacuum, sweep and/or blow to remove all loose aggregate.

D. Grout Coat
1. The grout coat shall be comprised of liquid components, combined at a ratio of 2 parts resin to 1 part hardener by volume and shall be thoroughly blended by mechanical means such as a high speed paddle mixer.
2. The grout coat shall be squeegee applied with a coverage rate of 90 sf/gal (flintshot) or 50 sf/gal (Q-Rok).
3. The grout coat will be back rolled and cross rolled to provide a uniform texture and finish.

E. Topcoat (Urethane)
1. The topcoat of Armor Top shall be roller applied at the rate of 500 sf/gal to yield a dry film thickness of 3 mils.
2. The topcoat shall be comprised of a liquid resin, hardener and grit that is mixed per the manufacturer’s instructions.
3. The finished floor will have a nominal thickness of 1/8 inch.

3.4 FIELD QUALITY CONTROL

A. Tests, Inspection
1. The following tests shall be conducted by the Applicator:
   a. Temperature
      1. Air, substrate temperatures and, if applicable, dew point.
   b. Coverage Rates

1. Rates for all layers shall be monitored by checking quantity of material used against the area covered.

3.5 CLEANING AND PROTECTION

A. Cure flooring material in compliance with manufacturer's directions, taking care to prevent their contamination during stages of application and prior to completion of the curing process.
B. Remove masking. Perform detail cleaning at floor termination, to leave cleanable surface for subsequent work of other sections.

End of Section

SECTION 09 91 00

PAINTING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Finish painting and priming of all items exposed and identified to receive a finish.

1.02 RELATED SECTIONS

A. Examine the specifications for the various other trades and become thoroughly familiar with all their provisions regarding what they are painting. All surfaces that are left unfinished by the requirements of other specifications shall be painted or finished as a part of this work.

1.03 REFERENCES

A. ANSI/ASTM D16 - Definitions of Terms Relating to Paint, Varnish, Lacquer, and Related Products.

B. ASTM D2016 - Test Method for Moisture Content of Wood.

C. Federal Specifications

1.04 DEFINITIONS

A. Conform to ANSI/ASTM D16 for interpretation of terms used in this Section.

B. The term "paint" as used herein includes enamels, paint, emulsions, varnishes, stains, sealers and other coatings whether used as prime, intermediate or finish coats.

1.05 SUBMITTALS

A. Submit under provisions of Section 01 33 00.

B. Submit manufacturer's technical data sheet and Material Safety Data Sheets (MSDS) for each scheduled coating, giving the descriptive data, curing time, mixing, thinning and application instructions. Provide certification that paint was formulated within lead or mercury.

C. Submit manufacturer's fan deck of color chips for selection of colors by the Architect.

D. Samples

1. At the request of the Architect, prepare and submit paint samples on the materials he requires for approval.
2. Prepare and submit stained wood samples on the type and quality of wood specified for use on the project as requested by the Architect.

E. Submit a list of all interior paints and coatings used in the project that are addressed by the Green Seal Standard GS-11 and state the Volatile Organic Compounds (VOC) content for each product.

1.06 QUALIFICATIONS

A. Product Manufacturer: Company specializing in manufacturing quality paint and finish products with five years experience.
B. Applicator: Company specializing in commercial painting and finishing with 3 years documented experience.

1.07 REGULATORY REQUIREMENTS

A. Conform to applicable code for flame/fuel/smoke rating requirements for finishes.

1.08 FIELD SAMPLES

A. At the request of the Architect, provide field sample panel, one complete surface of each color scheme illustrating special coating, color, texture, finish and workmanship.

B. Locate where directed by the Architect.

C. If approved, sample area will serve as a minimum standard for Work throughout the building. Accepted sample may remain as part of the Work.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and protect products under provisions of Section 01 60 00.

B. Deliver all paint materials to the job site ready mixed and in their original containers with all labels intact and legible at time of use.

C. Store only the approved materials at the job site, and store only in a suitable and designated area restricted to the storage of paint materials and related equipment.

D. Use all means necessary to insure the safe storage and use of paint materials.

E. All soiled or used rags, waste and trash must be disposed off site every night and every precaution taken to avoid the danger of fire.

F. All materials must be stored at above freezing temperature.

1.10 ENVIRONMENTAL REQUIREMENTS

A. Provide continuous ventilation and heating facilities to maintain surface and ambient temperatures above 45 degrees F for 24 hours before, during, and 48 hours after application of finishes.

B. Do not apply exterior coatings during rain or snow, or when relative humidity is above 50 percent.

C. Application Temperature for Paints: 50 degrees F minimum, and 95 degrees F maximum.

D. Application Temperature for Varnish and Other Natural Finishes: 65 degrees F minimum and 90 degrees F maximum.

E. Provide lighting level of 80 ft. candles measured mid-height at substrate surface.

F. Do not apply paint to areas where dust is being generated.

1.11 COORDINATION

A. Coordinate work under provisions of Section 01 31 00.

1.12 EXTRA MATERIALS

A. Furnish under provisions of Section 01 78 00 extra paint equaling approximately 10% of each color and gloss used in each coating material used, tightly sealed in clearly labeled containers.

B. The additional material shall be properly packaged for long term storage and delivered to the Owner.

PART 2 - PRODUCTS

2.01 MANUFACTURER:

A. Acceptable manufacturers:
1. Interior Paint:
a. Sherwin Williams
b. Pittsburgh Paint
c. Benjamin Moore Paint

B. Substitutions: Under provisions of Section 01 60 00.

2.02 COMPATIBILITY:

A. All paint materials and equipment shall be compatible in use; finish coats shall be compatible with prime coats; prime coats shall be compatible with the surface to be coated; all tools and equipment shall be compatible with the coating to be applied.

B. Thinners, when used, shall be only those thinners recommended for that purpose by the manufacturer of the material to be thinned.

2.03 MIXING AND TINTING:

A. Accomplish job mixing and tinting only when acceptable to the Architect. Mix only in mixing pails placed in suitable sized non-ferrous or oxide resistant metal pans.

B. Tints and all other additives or thinners shall be used only as recommended by the manufacturer of the paint and as approved by the Architect.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.

B. In the event of discrepancy, immediately notify the Architect.

C. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 PREPARATION:

A. General

1. Prior to all surface preparation and painting operations, completely mask, remove or otherwise adequately protect all hardware, accessories, machined surfaces, plates, lighting fixtures, and similar items in contact with painted surfaces but not schedule to receive paint.
2. Remove all existing loose, flaking and poor condition paint by scraping and then sanding surface. Sand as required to feather edges of remaining paint.
3. Spot prime all exposed nails and other metals that are to be painted with emulsion paints, using a primer recommended by the manufacturer of the coating system.
4. Surface to be painted shall be thoroughly clean and dry. All concrete and masonry work shall be completely cured.
5. All items concealing surfaces to be painted that are readily detachable shall be removed for the painting of said surface. Reinstall upon completion of space.
6. Surfaces in spaces above suspended ceilings and chases are not required to be painted unless otherwise indicated.
7. Doors shall be removed to paint the bottom edges.
8. Provide minimum of one coat of primer and minimum of two coats of finish paint. The shop priming coat, as occurring, shall substitute for the field applied primer coat.
9. Complete coverage is required. Provide additional coats to areas that do not show complete coverage.

B. Preparation of wood surfaces:

1. Clean all wood surfaces until they are free from dirt, oil, and all other foreign substance.
2. Smooth all finished wood surfaces exposed to view, using the proper sandpaper.
3. Where so required, use varying degrees of coarseness in sandpaper to produce uniformly textured and unmarred wood surfaces.
4. On small, dry, seasoned knots, thoroughly scrape and clean the surface and apply one coat of good quality knot-sealer before application of the priming coat.
5. On large, open, unseasoned knots, scrape off all pitch and thoroughly clean the area, followed by an application of one coat of good quality knot-sealer.

6. Back prime all wood mouldings and trim.
7. Fill nail holes, cracks, open joints and other defects with oil based putty after priming coat has dried. Color to match finish color.

C. Preparation of metal surfaces:

1. Galvanized Metal

   a. Clean all surfaces thoroughly with solvent until they are completely free from dirt, oil and grease.
   b. Thoroughly treat the cleaned surface with phosphoric acid etch.
   c. Remove all excess etching solution and allow to dry completely before application of paint.
   d. Prepare surface in accordance with recommendations of directions of manufacturer of rust-inhibitive primer.
   e. New galvanized metal is to be allowed to weather 6 months prior to coating. If weathering is not possible, clean with solvents per manufacturer's instructions, and verify test patch adhesion with Architect.

2. Other Metals

   a. Thoroughly clean all surfaces until they are completely free from dust, dirt, oil, loose rust and grease.
   b. All shop-primed surfaces that have been marred or abraded shall be wire-brushed and touched up with the same material as the shop coat prior to painting of surfaces.

3. Preparation of existing aluminum surfaces:
   a. Thoroughly clean all surfaces per manufacturer’s instructions until they are completely free from dirt, oil and grease.
   b. Apply a test area, allow paint to dry one week before testing adhesion. If adhesion is poor, discuss solutions with Architect.
   c. Do not use hydrocarbon solvents for cleaning.

D. Preparation of Concrete and Masonry

1. Concrete and masonry shall be repaired before painting.
2. Dirt, fungus, grease and oil shall be removed prior to application of paint by washing with a solution composed of from 2 to 8 ounces of tri-sodium phosphate per gallon of hot water and then rinsing thoroughly with fresh water.
3. Efflorescence shall be removed from concrete and masonry surfaces by scraping, wire brushing and washing with 5 to l0 percent solution of muriatic acid and then washing thoroughly with fresh water.
4. Unless otherwise recommended by the manufacturer of the paint materials as approved, all concrete and masonry surfaces to be painted shall be given a neutralizing treatment consisting of 2 pounds of zinc-sulfate in one gallon of warm water. The neutralizer shall be applied liberally and allowed to dry, following which the surfaces shall be rinsed

thoroughly with clean water and allowed to dry for not less than 48 hours before paint is applied.

E. Preparation of Gypsum Wallboard

1. All surfaces must be thoroughly clean and joint treatment dry.
2. Steel corner beads shall be spot primed before water based paint is applied.
3. Do not apply solvent based coatings directly over unpainted wallboard.

3.03 APPLICATION

A. General

1. Apply all paint in accordance with manufacturer's instructions.
2. Do not apply the initial coating until moisture-meter reading of the surface is within limits recommended by the paint materials manufacturer.
3. Allow sufficient drying time between coats in accordance with manufacturer's recommendations.
4. Oil base and Oleo resinous solvent type paints shall be considered dry for recoating when the paint feels firm, does not deform or feel sticky under moderate pressure of the thumb, and the application of another coat of paint does not cause lifting or less of adhesion of the undercoat.
5. Schedule all cleaning and painting so that dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
6. Sand, dust, and clean between coats to remove all defects visible to the unaided eye from a distance of five feet.
7. Finished surfaces shall be free from runs, drops, ridges, waves, laps, sags and unnecessary brush marks.
8. Slightly vary the color of succeeding coats.
9. Primer and intermediate coats shall be tinted to approximately the tint of finish coats.
10. Damaged painting shall be retouched before applying the succeeding coat.
11. Do not apply additional coats until completed coat has been inspected and approved by the Architect.
12. Only inspected and approved coats of paint will be considered in determining the number of coats applied.
13. Edges of paint abutting other materials or colors shall be clean and sharp with no overlapping.
14. Refinish entire wall where portion of finish has been damaged or is not acceptable.
15. Refinish all woodwork that has been removed and reset.
16. Paint all exposed, plastic drain pipes, electrical conduits, uninsulated metal piping, ceiling & wall access panels, sprinkler piping and ductwork, unless otherwise noted. Verify with Architect prior to painting these items.
17. Colors will be selected by Architect from manufacturer’s full color palette.
18. Unlimited number of different colors allowed per project. Multiple colors are allowed per room. Opposite sides of door frames, window frames and doors may be painted different colors at Architect’s discretion. Number of colors is to be determined by Architect and included in a color schedule that will be assembled after submittal of color sample fantex by the General Contractor prior to commencement of work.

19. All steel door frames are to be painted using a brush or roller and back-brushed.

3.04 CLEANING

A. Prevent accidental spilling of paint materials and, in event of such spill, immediately remove all spilled material, the waste of equipment used to clean up the spill, and wash the surfaces to their original undamaged condition.

B. Prior to final inspection visually inspect all surfaces and remove all paint and traces of paint from surfaces not scheduled to be painted.

C. Paint storage space shall be thoroughly cleaned following the completion of all work.

D. All waste materials shall be disposed of properly and in accordance with all Federal, State, and Local regulations. Do not dispose of waste materials in the building sanitary waste system.

3.05 WASTE MANAGEMENT

A. Set aside extra paint for future color matches. All paint unused by the Contractor is to be delivered to the Owner in sealed containers.

B. Close and tightly seal all partly used paint and finish containers and store in a well-ventilated, safe area at moderate temperature.

C. Do not dispose of paints or solvents by pouring on ground. Place in designated containers for proper disposal.

3.06 PAINTING SCHEDULE

A. Structural Steel

1. After erection of structural steel, but before masonry work is started, all steel to be in contact with earth or in contact with or concealed in masonry shall be given one coat of one of the following asphaltic paints or an approved equal:
   Koppers - Bitumastic #50
   Tnemec - 46-449 Heavy Duty Black
   Devoe - Devtar 5A Epoxy highbuild coating

B. Interior: Based on Sherwin Williams Paints.

1. CEMENT - (Walls & Ceilings, Poured Concrete, Precast Concrete, Unglazed Brick, Cement Board, Cast-In-Place)
   Eg-Shel / Satin Finish
   1st Coat: S-W Loxon Block Surfacer (16 mils wet, 8 mils dry)
   2nd & 3rd Coats: S-W ProMar 200 Zero VOC Latex Eg-Shel B20-2600 Series, (4 mils wet, 1.6 mils dry per coat)

2. METAL - (Galvanized)
   Eg-Shel / Satin Finish
   1st Coat: S-W ProCryl Universal Primer, B66-310 Series (110 g/L) (2-4 mils dry)
   2nd & 3rd Coats: S-W Pro Industrial DTM Acrylic Eg-Shel B66-660 Series (6.0 mils wet, 2.5mils dry)

3. METAL - (Structural Steel Columns, Joists, Trusses, Beams, Miscellaneous & Ornamental Iron, Structural Iron, Ferrous Metal, steel pipe railings) (exposed, uninsulated metal piping and ductwork)
   Eg-Shel / Satin Finish
   1st Coat: S-W ProCryl Universal Primer, B66-310 Series (110 g/L) (4 mils wet, 1.6 mils dry)
   2nd & 3rd Coats: S-W Pro Industrial DTM Acrylic Eg-Shel B66-660 Series (6.0 mils wet, 2.5mils dry per coat)

4. METAL - (Ceilings; Structural Steel, Joists, Trusses, Beams, Ferrous Metal) Dryfall Waterborne Topcoats
   Eg-Shell Finish
   1st Coat: S-W ProCryl Universal Primer, B66-310 Series (110 g/L) (2-4 mils dry)
   2nd & 3rd Coats: S-W Waterborne Acrylic Dry Fall, B42W2 (58 g/L)

END OF SECTION

SECTION 14 21 23

ELECTRIC TRACTION PASSENGER ELEVATORS

PART 1 GENERAL

1.01 SUMMARY

A. Section includes: Electric traction passenger elevators as shown and specified. Elevator work includes:
   1. Gearless electric traction passenger elevators.
   2. Elevator car enclosures, hoistway entrance work and signal equipment.
   3. Operation and control systems.
   4. Accessibility provisions for physically disabled persons.
   5. Equipment, machines, controls, systems and devices as required for safely operating the specified elevators at their rated speed and capacity.
   6. Materials and accessories as required to complete the elevator installation.

B. Related Sections:
   1. Division 1 General Requirements: Meet or exceed all referenced sustainability requirements.
   2. Division 5 Metals:
      a. Providing hoist beams, steel framing, and auxiliary support steel.
   3. Division 9 Finishes: Providing elevator car finish flooring and field painting unfinished and shop primed ferrous materials.
   4. Division 26 Sections:
      a. Providing electrical service to elevators, including fused disconnect switches. Emergency power supply, transfer switch and auxiliary contacts.

C. Work Not Included: General contractor shall provide the following in accordance with the requirements of the Model Building Code and ANSI A17.1 Code. For specific rules, refer to ANSI A17.1, Part 2 for traction elevators. State or local requirements must be used if more stringent.
   1. A plumb and legal hoistway, properly framed and enclosed, including a pit of proper depth, and a pit ladder. Hoistway should be clear and plumb with variations not to exceed 1/2" at any point. Drains, lights, access doors, and hoistway ventilation, as required.
   2. Elevator machine room - provide a suitable room with access and ventilation in accordance with all applicable codes and regulations. The machine room shall be maintained at a temperature between 32 F (0 C) and 104 F (40 C). To be measured at 6 feet (1830 mm) above the floor and 1 foot (305 mm) out from the front center of the car controller(s). Relative humidity is not to exceed 95% non-condensing. Local codes may require tighter temperature ranges, and higher ventilation levels, please check with your local code authority for the exact requirements in your area.
      All telephone wiring to controller room control panel, and installation of telephone instrument or other communication equipment in elevator cab with all connections to elevator in controller room.
   3. Hoistway must be maintained between 32ºF (0ºC) and 122ºF (50ºC) measured at the machine.
   4. Adequate supports to carry the loads of all equipment, including overhead machine and machine beams located in hoistway including supports for guide rail brackets.
   5. Complete 3 phase connections from the electric power mains to each controller, including necessary circuit breakers and fused mainline disconnect switches.

6. Electric power of the same characteristics as the permanent supply without charge for the construction, testing and adjusting.
7. Provide proper piping and conduit.
8. Divider beams for rail bracket support as required.
9. Cutting of walls floor, etc. and removal of such obstructions as may be necessary for proper installation of the elevator.
10. Grouting of signal fixtures after installation of the elevator equipment.
11. All painting, except as otherwise specified.
12. Provide hoistway walls designed and constructed in accordance with the required fire rating (including those places where elevator fixture boxes, rail bracket fastenings, and any other penetration into the hoistway walls).
13. Temporary enclosures, barricades and other protection from open hoistways and elevator work area during the time the elevator is being installed to meet all permanent installation safety codes. A temporary work platform to be provided at the top landing across the hoistway; if required, it should conform to all code and safety requirements.
14. Smoke detector\ sensing devices and contacts wired to elevator control as required by local code. A means to automatically disconnect the main line power supply to the elevator prior to the application of water in the elevator controller room shall be furnished by the electrical contractor. This means shall not be self-resetting.
15. A standby power source, including necessary transfer switches and auxiliary contact, where elevator operation from an alternate power supply is required.
16. Adequate storage facilities for elevator equipment prior to and during installation at ground level within 150 feet of hoistway.
17. Setting of anchors and sleeves.
18. Install bevel guards at 75° on all recesses, projections or setbacks over 2" (4" for A17.1 2000 areas) except for loading or unloading.
19. For car light and fan: provide a feeder and branch wiring circuits to elevator control cabinet.
20. NOTE: The General Contractor is to include in their Base Bid all costs related to compensating the elevator company subcontractor for a technician to be present at the site during any non-elevator related work if required by state authorities.

1.02 SUBMITTALS

A. Submit under provisions of Section 01 33 00.

B. Product data: The elevator contractor shall provide standard cab, entrance and signal fixture data to describe product for approval. Provide electrical characteristics and connection requirements.

C. Shop drawings:
   1. Provide fixture and cab interior drawings for approval
   2. Indicate elevator system capacities, sizes, performances, safety features, finishes and other pertinent information.

D. Powder Coat paint selection: Submit manufacturer’s standard selection charts for exposed finishes and materials.

E. Metal Finishes: Upon request, standard metal samples provided.

F. Operation and maintenance data. Include the following:
   1. Owner’s manuals and wiring diagrams.
   2. Parts list, with recommended parts inventory.

1.03 QUALITY ASSURANCE

A. Manufacturer Qualifications: An approved manufacturer with minimum 15 years of experience in manufacturing, installing, and servicing elevators of the type required for the project.
   1. The manufacturer of machines, controllers, signal fixtures, door operators, cabs, entrances, and all other major parts of elevator operating equipment.
      a. The major parts of the elevator equipment shall be manufactured by the installing company, and not be an assembled system.
   2. The manufacturer shall have a documented, on-going quality assurance program.

B. Installer Qualifications: The manufacturer or an authorized agent of the manufacturer with not less than 15 years of satisfactory experience installing elevators equal in character and performance to the project elevators.

C. Regulatory Requirements:
   1. Conform to all applicable Federal, State and local codes and laws.
   2. ASME A17.1 Safety Code for Elevators and Escalators, latest edition or as required by the local building code.
   3. NFPA 70 National Electrical Code.
   4. NFPA 80 Fire Doors and Windows.
   5. Americans with Disabilities Act - Accessibility Guidelines (ADAAG)
   6. Section 407 in ICC A117.1, when required by local authorities

D. Inspection and testing:
   1. Elevator Installer shall obtain and pay for all required inspections, tests, permits and fees for elevator installation.
   2. Arrange for inspections and make required tests.
   3. Deliver to the Owner upon completion and acceptance of elevator work.

1.04 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.
B. Manufacturing shall deliver elevator materials, components and equipment and the contractor is responsible to provide secure and safe storage on job site.

1.05 PROJECT CONDITIONS

A. Temporary Use: Elevators shall not be used for temporary service or for any other purpose during the construction period before Substantial Completion and acceptance by the purchaser unless agreed upon by the Elevator Contractor, General Contractor and Owner with signed temporary agreement.

B. **NOTE:**
   Schedule work as required to keep one of the two elevators operating throughout the duration of construction.

   If both elevators have to be shut down at the same time, this MUST be done during hours whereby the state offices are not open for business, the state Senate or House are not in session and no public events are scheduled. This afterhours work is considered included under the Base Bid, not included under Allowance No. 5.

The request for these overnight or weekend work periods must be submitted in writing and reviewed and approved by the Owner.
This is extremely important!

C. **NOTE:**
Contractor is required to confirm at the beginning of the project that the existing elevator controls will allow one elevator to be shutdown, out of service, and the other elevator can remain in service. If the existing controls do not allow this, the Contractor is to submit a plan of action to accomplish the work without such capability. This plan must be reviewed and approved by the Owner.

D. **NOTE:** See Allowance No. 5 for unanticipated afterhours work mandated by the Owner for convenience.

1.06 PRE-INSTALLATION CONFERENCE

A. Convene one week prior to commencing work of this section, under provisions of Division 1 Specifications.

B. Require attendance of persons directly involved with the work of this section.

C. Review schedule of installation, installation procedures and conditions, and coordination with related work.

D. Review temporary use of elevator, hours of use, scheduling of its use, cleanliness of cab, employment of operator, maintenance of system.

1.07 NON-PROPRIETARY SERVICE CAPABILITY

A. Design, equip, furnish, install and configure the elevator system and its components, systems and parts, including electronic components, so that regular maintenance and regular or emergency services may be provided by any qualified professional maintenance contractor at the discretion and selection of the Owner and without any approval or certification from either the elevator manufacturer or the elevator installer. All proprietary tools are to be given to the Owner.

1.08 WARRANTY

A. Warranty: Submit elevator manufacturer's standard written warranty agreeing to repair, restore or replace defects in elevator work materials and workmanship not due to ordinary wear and tear or improper use or care for 24 months after final acceptance under the provisions of Section 01 78 00.

1.09 MAINTENANCE SERVICE

A. Provide maintenance and call back service for a period of 24 months from date of Substantial Completion.
   1. Service shall consist of semi-monthly examination of the equipment, adjustment, lubrication, cleaning, supplies and parts to keep the elevators in proper operation. Maintenance work, including emergency call back repair service, shall be performed by trained employees of the elevator contractor.
   2. Provide emergency call back repair service 24 hours a day, 7 days a week for this maintenance period.

3. Submit parts catalog and show evidence of local parts inventory with complete list of recommended spare parts. Parts shall be produced by manufacturer of original equipment.
4. Manufacturer shall have a service office and full time service personnel within a 50 mile radius of the project site.
5. Maintenance service may be performed during normal working hours.
6. Perform maintenance work without removing cars during peak traffic periods.
7. Maintenance service shall not be assigned or transferred to any agent or Subcontractor without prior written consent of the Owner.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Manufacturer: Basis of design is Thyssenkrupp Elevator's GL Power Standard Series elevator.

B. Other acceptable manufacturers offering equivalent products:
   1. Otis Elevator Company
   2. Schindler Elevator Corporation

C. Substitutions: Under provisions of Section 01 60 00.

2.02 MATERIALS, GENERAL

A. Colors, patterns, and finishes: As selected by the Architect from manufacturer's full range of standard colors, patterns, and finishes.

B. Steel:
   1. Shapes and bars: Carbon.
   2. Sheet: Cold-rolled steel sheet, commercial quality, Class 1, matte finish.
   3. Finish: Factory-applied baked enamel for structural parts, powder coat for architectural parts. Color selection must be based on elevator manufacture's standard selections.

C. Flooring to be vinyl tile as specified in Section 09 65 00.

2.03 HOISTWAY EQUIPMENT

A. New – 8" Car roller guides (Spring Loaded)
B. New – 4" Counterweight roller guides (Spring Loaded)
C. New – Wiring – All wiring shall be new including:
   a. Traveling Cables
   b. Hoistway wiring
   c. Interlock wiring
   d. Serial wiring
D. New – Final Limit Switches, Brackets and Cams
E. New – Car Top Railing
F. New – Toe Guards
G. New – Alarm Bell
H. New – Hoistway door hangers
I. Refurbish – Safeties
J. The existing hoistway doors, frames and sill plates are to remain and be cleaned and restored or replaced as described on the drawings.

K. Existing car guide rails are to remain.

2.04 PIT EQUIPMENT

A. Refurbish – Oil Buffers – Drain, Flush and Refill
B. New – Counterweight Guard
C. New – Pit Stop Switch

2.05 PASSENGER ELEVATOR CAR ENCLOSURE

A. Car Enclosure:
Refurbish as specified by Architect. See drawings.

B. Provide one set of new quilted fire retardant protective pads for three sides of one cab. Color of pads selected by Architect from standard colors.

2.06 DOOR EQUIPMENT

General: Door Operation: Provide a direct or alternating current motor driven heavy duty operator designed to operate the car and hoistway doors simultaneously. The door control system shall be digital closed loop and the closed loop circuit shall give constant feedback on the position and velocity of the elevator door.

New - Car and Hoistway Door Equipment including:

A. LD-16 Linear Door Operator with complete car-side equipment
B. Car header, tracks, hangers, hanger rollers
C. Hoistway Tracks, hangers, hanger rollers
D. Clutch, pick up assemblies, interlocks and closers
E. Gate switch
F. Microlight door edge infrared object detector
G. Fixed Vane Door restrictors on Car and Hoistway
H. Door Gibs and Z brackets

2.07 FIXTURES

General: All fixtures shall be Muntz #4 finish with vandal resistant buttons

A. New – Main Car Operating Panel, Muntz #4 finish, Applied Panel including:
- Vandal Resistant Floor Buttons
- Panel Screws
- Cast Braille Plates for Car Features
- Standard Key Switch Package
    - Fan
    - Light
    - Independent
    - Stop
    - Inspection/Hoistway Enable
- Emergency Light mounted in car operating panel
- Fire Service Phase II Features (includes instructions signage)
- Handicap Signal (Passing signal)

- Position Indicator (CE Segmented)
- Provide Automatic Verbal annunciators indicating up/down direction and car position.
- ADA Phone System integral with COP (Rath)
- Speaker Pattern for Intercom System/ADA Phone
- No Smoking (Engraved)
- Locked Service Cabinet
- Certificate Window
- GFI Outlet
- Emergency Light Test Button (constant pressure)
- Card Reader Provisions (Space only)
- Four new LED ceiling downlight fixtures per cab.
- New cab exhaust fans.

B. New – Easy Riser Hall Stations at all landing, Surface Mounted Including
- Engraved Appendix O
- Hoistway Access Key switches
- Phase 1 Fire Service
- Elevator Communication failure
- Emergency Power jewel and switch

C. New – Combo Hall Position Indicator / Lantern, Easy Riser design surface mounted at all landings

2.08 MACHINE ROOM EQUIPMENT

A. New - Elevator Controller:
   a. The new Elevator controller will be a TAC 32T Controller with the following:
   b. Internet of Things - eMax Monitoring Device
   c. Emergency Power Operation (connection to existing building generator)
   d. Load weighing
   e. APS (Absolute Positioning System)

B. New - TKE 10K VVVF AC Drive
C. New - Isolation Transformer
D. New - Machine Room Wiring and Duct
E. New – AC PM Gearless Machine with the following
   a. 2:1
   b. Encoder
   c. Break Switch
   d. Bed Plate
   e. Machine Isolation
F. New - Secondary Sheave
G. New - Car and Cwt Sheaves

H. New – Hoist Ropes and Shackles
I. New – Governor and tail sheave including new Governor Rope

PART 3 EXECUTION

3.01 EXAMINATION

A. Before starting elevator installation, inspect hoistway, hoistway openings, pits and control room, as constructed, verify all critical dimensions, and examine supporting structures and all other conditions under which elevator work is to be installed. Do not proceed with elevator installation until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

B. Installation constitutes acceptance of existing conditions and responsibility for satisfactory performance.

3.02 INSTALLATION

A. The elevator contractor will remove and dispose all existing equipment as necessary for modernization.

B. Install elevator systems components and coordinate installation of hoistway components.
   1. Work shall be performed by competent elevator installation personnel in accordance with ASME A17.1, manufacturer's installation instructions and approved shop drawings.
   2. Comply with the National Electrical Code for electrical work required during installation.

C. Perform work with competent, skilled workmen under the direct control and supervision of the elevator manufacturer's experienced foreman.

D. Supply in ample time for installation by other trades, inserts, anchors, bearing plates, brackets, supports, and bracing including all setting templates and diagrams for placement.

E. Welded construction: Provide welded connections for installation of elevator work where bolted connections are not required for subsequent removal or for normal operation, adjustment, inspection, maintenance, and replacement of worn parts. Comply with AWS standards for workmanship and for qualification of welding operators.

F. Coordination: Coordinate elevator work with the work of other trades, for proper time and sequence to avoid construction delays. Use benchmarks, lines, and levels designated by the Contractor, to ensure dimensional coordination of the work.

G. Install machinery, guides, controls, car and all equipment and accessories to provide a quiet, smoothly operating installation, free from side sway, oscillation or vibration.

H. Alignment: Where possible, delay final adjustment of sills and doors until car is operable in shaft. Reduce clearances to minimum safe, workable dimensions at each landing.

I. Erect hoistway sills, headers, and frames before erection of doors; erect fascia and toe guards. Set sill units accurately aligned and slightly above finish floor at landings.

J. Lubricate operating parts of system, including ropes, as recommended by the manufacturer.

3.03 FIELD QUALITY CONTROL

A. Acceptance testing: Upon completion of the elevator installation and before permitting use of elevator, perform acceptance tests as required and recommended by Code and governing

regulations or agencies. Perform other tests, if any, as required by governing regulations or agencies.

B. Advise Owner, Contractor, Architect, and governing authorities in advance of dates and times tests are to be performed on the elevator.

3.04 ADJUSTING

A. Make necessary adjustments of operating devices and equipment to ensure elevator operates smoothly and accurately.

3.05 CLEANING

A. Clean work under provisions of Specification Division 1.

B. Before final acceptance, remove protection from finished surfaces and clean and polish surfaces in accordance with manufacturer's recommendations for type of material and finish provided. Stainless steel shall be cleaned with soap and water and dried with a non-abrasive surface; it shall not be cleaned with bleach-based cleansers.

C. At completion of elevator work, remove tools, equipment, and surplus materials from site. Clean equipment rooms and hoistway. Remove trash and debris.
   1. Use environmentally preferable and low VOC emitting cleaners for each application type. Cleaners that contain solvents, pine and/or citrus oils are not permitted.

3.06 PROTECTION

A. At time of Substantial Completion of elevator work, or portion thereof, provide suitable protective coverings, barriers, devices, signs, or other such methods or procedures to protect elevator work from damage or deterioration. Maintain protective measures throughout remainder of construction period.

3.07 DEMONSTRATION

A. Instruct Owner's personnel in proper use, operations, and daily maintenance of elevators. Review emergency provisions, including emergency access and procedures to be followed at time of failure in operation and other building emergencies. Train Owner's personnel in normal procedures to be followed in checking for sources of operational failures or malfunctions.

B. Make a final check of each elevator operation, with Owner's personnel present, immediately before date of substantial completion. Determine that control systems and operating devices are functioning properly.

3.08 ELEVATOR SCHEDULE

A. Elevator
   1. Quantity: two
   2. Elevator Model: GL Power Standard Series
   3. Elevator Type: Gearless Traction, Passenger
   4. Rated Capacity: 3500 lbs.
   5. Rated Speed: 500 ft./min.
   6. Operation System: TAC32T

7. Travel: 63’ Field Verify
8. Landings: 5 total
9. Openings:
    a. Front: 5
    b. Rear: 0
10. Clear Car Inside: Field Verify
11. Cab Height: Field Verify
12. Hoistway Entrance Size: 3' - 6" wide x 7'-0" high
13. Door Type: 2SSO
14. Power Characteristics: 208 volts, 3 Phase, 60 Hz. - Field Verify
15. Seismic Requirements: Zone 1
16. Hoistway Dimensions: Retain Existing
17. Pit Depth: Retain Existing
18. Button & Fixture Style: Vandal Resistant Signal Fixtures

END OF SECTION