PROJECT MANUAL

January 2026

SHEPARD BUILDING
4th Floor Renovation

80 Washington Street
Providence, Rhode Island 02903

PROJECT DESIGN BY:

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RHODE ISLAND DEPARTMENT OF ADMINISTRATION
SHEPARD BLDG – 4TH FLOOR RENOVATION
Providence, Rhode Island AA 25175

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DOCUMENT 00 01 15
LIST OF DRAWING SHEETS

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 work specified in this Document.

1.02 REFERENCE

A. The Drawings hereinafter listed represents an integral part of the Contract Documents. They should not be considered as a separate entity, as along with the technical specifications, form a process of disseminating information required to perform the Work of this Project.

B. The Drawings may be issued in multiple packages or phases. The Schedule below will be modified as these packages are issued.

1.03 SCHEDULE

A. The following schedule indicates the Drawings of this Contract. The manner of listing and respective order is for convenience only and does not obligate the Contractor to perform the Work in any specific sequence. The work indicated on each drawing should not be construed as specific work for a specific trade, subcontractor or supplier.

B. SCHEDULE OF DRAWINGS:

Number	Title
CS0.1	CODE INFO, EGRESS & OCCUPANCY DIAGRAMS
D1.1	DEMOLITION FLOOR PLAN
A1.1	FLOOR PLAN, DOOR & STOREFRONT SCHEDULE & DETAILS
A1.2	FLOOR FINISH PLAN & DETAILS
A1.3	REFLECTED CEILING PLAN, SCHEDULE & DETAILS
A1.4	FURNITURE PLAN & ADA COMPLIANCE
E0.1	ELECTRICAL COVER SHEET
E1.1	ELECTRICAL POWER, FIRE ALARM, & SYSTEMS PLAN - DEMOLITION
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E2.2	ELECTRICAL LIGHTING PLAN - NEW WORK
E3.1	ELECTRICAL SCHEDULES AND DETAILS
E3.2	ELEC DAYLIGHTING ZONING AND LIGHTING CONTROLS SEQUENCES

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTIONS (Not Applicable)

END OF DOCUMENT 00 01 15

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DOCUMENT 00 43 13
BID SECURITY FORM

AIA DOCUMENT A310 – Latest Edition
BID BOND

Document bound herewith. Failure to review this document will not relieve parties of the contractual requirements contained herein.

END OF DOCUMENT 00 43 13

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DOCUMENT 00 52 00
AGREEMENT FORM

**STATE OF RHODE ISLAND VERSION OF AIA DOCUMENT A104 - 2017 Edition
ABBREVIATED STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR CONSTRUCTION PROJECTS OF LIMITED SCOPE WHERE THE BASIS OF PAYMENT IS A STIPULATED SUM AS MODIFIED BY STATE PURCHASING**

Document bound herewith. Failure to review this document will not relieve parties of the contractual requirements contained herein.

END OF DOCUMENT 00 52 00

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DOCUMENT 00 61 13
PERFORMANCE AND PAYMENT BOND FORM

AIA DOCUMENT A312 – Latest Edition
PERFORMANCE AND PAYMENT BOND

Document bound herewith. Failure to review this document will not relieve parties of the contractual requirements contained herein.

END OF DOCUMENT 00 61 13

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DOCUMENT 00 65 20
RELEASE OF LIENS

AIA DOCUMENT G706A – Latest Edition
Release of Liens

Document bound herewith. Failure to review this document will not relieve parties of the contractual requirements contained herein.

END OF DOCUMENT 00 65 20

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DOCUMENT 00 73 46
WAGE DETERMINATION SCHEDULE

The State of Rhode Island Department of Labor, Division of Professional Regulation General Decision Modification document, in effect at the time of the Bid issuance for this Project, is an integral part of the Bid Documents for use in fulfilling prevailing wage rate requirements. A copy is available on the web site of the State of Rhode Island Department of Administration, Division of Professional Regulations Web Site.

Department of Labor and Training, Division of Professional Regulations Web Site Address:

www.dlt.ri.gov/pw

Click on "Wage Rate Schedule for Construction".

Documents are not contained within this Project Manual, may be obtained from the State of Rhode Island, Department of Labor and Training, Division of Professional Regulations, 1511 Pontiac Avenue, Cranston, RI 02920-4407, Tel. No. 401-462-8580.

END OF DOCUMENT 00 73 46

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DOCUMENT 00 91 13
ADDENDA

PART 1 GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

A. As of the time of publication of this project manual no addenda had been issued.

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

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

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION 00 91 13

RHODE ISLAND DEPARTMENT OF ADMINISTRATION
SHEPARD BLDG – 4TH FLOOR RENOVATION
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SECTION 01 10 00
SUMMARY OF WORK

PART 1 GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

A. The Project consists of demolition and construction activities associated with the renovation of a portion of the 4th floor of the historic Shepard Building, located in downtown Providence/RI as indicated in the Contract Documents.

B. Coordination with DOA's separate concurrent contracts, if any.

C. General Requirements:

1. Contractor shall perform the Work of the Contract under a stipulated sum Contract with the Owner in accordance with the Conditions of Contract.
2. The vendor is responsible for obtaining and paying for any required Local and State licenses, Permits and Inspections.
3. Contractor to include all Bond costs in their Bid.
4. Before starting work, all Contractor workers and Subs are required to obtain and submit a current BCI and State-approved picture ID. DOA reserves the right to deny building access to any worker based on information provided on the submitted BCI. All BCI's to be from Rhode Island and the Workers State of Residence and be current within six (6) calendar months of start of onsite work.
5. All onsite workers are to be OSHA 10 certified. Copies of certifications along with driver's licenses are required on the first day of work.
6. The Contractor is responsible for all repairs to existing interior finish damages relating from this project. GC is strongly encouraged to photograph and document any damage found prior to on-site activities.
7. The Contractor is responsible for providing their workers with all personal protection equipment. At a minimum, this includes hard hats, reflective vests, eye protection, harnesses and ear protection.
8. All completed work must be inspected and approved by DOA and Architect.
9. Vendor and/or its subcontractors are to be licensed as required by RI Department of Labor.
10. All contractors and subcontractors shall sign in for each employee at the DOA Security Office located on the building entry at the start of each shift.
11. A full time superintendant is required for the extent of construction. Selected vendor to submit resume of proposed Super and/or on-site personnel for DOA to review and approve. DOA reserves the right to reject proposed Superintendant.
12. A full list of subcontractors to be provided as part of the submittal package at the time of the tentative award.
13. No substitution will be considered prior to receipt of bid unless a written request for approval has been received by the Division of Purchases during the questioning phase. Such requests shall

include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including drawings, performance and test data and other information necessary for any evaluation. A statement setting forth changes in other materials, equipment, or other portions of the work, including changes in work of other contracts that incorporation of the proposed substitution would require, shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. The State of Rhode Island's decision of approval or disapproval of the proposed substitution shall be final. If the State approves a proposed substitution prior to receipt of bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner. No substitutions will be considered after the Contract Award except as provided for in the contract documents.

14. Contractors are not permitted to display a project sign anywhere on the grounds.
15. A space to store equipment and tools shall be provided by DOA in coordination with the GC. The DOA is not responsible for lost or stolen tools/equipment or materials.
16. The contractor is responsible for welding safety procedures. Personal protective equipment according to OSHA latest recommendations.
17. For the welding tasks the awarded contractor shall coordinate prior to start of work with DOA all related conditions, including and not limited to area ventilation, exhausting, electrical power sources and storage and handling of compressed gas cylinders.
18. General Contractor required to utilize DOA Fire Alarm and Sprinkler warrantee contractors. GC shall include their costs in the bid proposal. Warranty Contractors are subject to change year to year. The current sprinkler and Fire Alarm Maintenance + Warranty contractor, will be provided by DOA upon request.
19. Hot work permits are required, including fire watches. Costs to be included in Base Bid.
20. Any/all adjustments or work for Fire Alarm, Sprinkler or Roofing shall be performed by the building maintenance warranty subs and shall be included in the base bid costs. Warranty Contractors are subject to change year to year.
21. GC shall provide all temporary fire extinguishers throughout Temporary spaces and work areas throughout the construction phase.

1.02 RELATED DOCUMENTS

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

1.03 FUTURE WORK

A. FUTURE CONTRACT: The Owner reserves the right to award contracts for additional work to be performed at the site during construction and following the Substantial Completion. Completion of that future work depends on the progress of, and the successful and timely completion of, the preparatory and related Work of this Contract.

1.04 CONTRACTOR USE OF SITE AND PREMISES

A. GENERAL: The Department of Administration (DOA) will not occupy the premises during the construction period. The work area will be available for the GC to carry out its activities, provided that the conditions of use of the property established herein are respected.

B. CONSTRUCTION OPERATIONS: Coordinate with DOA to ensure delivery and completion per the schedule. Include all costs of this coordination, including all premium time wages that may be required to meet these requirements, in the Base bid

C. Provide access to and from site as required by law and by DOA:

1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if routes are temporarily altered during the 3rd shift only. Include and maintain temporary fire extinguishers within the limit of construction.
2. Contractor to provide temporary signage to identify the work area and emergency egress points.

3. Contractor to provide temp way finding signage as needed.
4. Contractor to provide temp way finding signage for ADA routes as needed.

D. TIME RESTRICTIONS

1. All weekend work is to be coordinated with the DOA at least 72 hours in advance.
2. All interior work that is excessively noisy or disruptive to tenants on other floors shall be done on the 3rd shift or as noted otherwise.
3. Coordinate work with DOA staff to avoid disruptions of Department activities. Coordinate and adjust workflow weekly and by special request.

E. UTILITY OUTAGES AND SHUTDOWN

1. Any utility shutdown shall be done on the 3rd shift or on the weekends subject to DOA previous approval.
2. Do not disrupt or shut down life safety systems, including but not limited to fire alarm systems, without 7 days' notice to DOA and authorities having jurisdiction.
3. All shutdowns to occur during the third shift shall be accounted for in the base bid.

F. Do not disrupt building control wiring or fire alarm wiring passing through the area of work.

G. Protect all existing surfaces from damage. Any damage to the existing surfaces requiring replacement and or repair shall be at Contractor's expense.

H. Construction areas shall be kept in a clean, safe and acceptable condition on a daily basis at all times and at completion of the Project.

I. The contractor is responsible for removing all debris off the site daily, including all costs associated with waste containers and proper disposal of waste.

J. The vendor is to have all equipment necessary to perform the installation and service including tools, staging, lift truck, etc. No DOA equipment or tools will be available.

1.05 OCCUPANCY REQUIREMENTS

A. PARTIAL OWNER OCCUPANCY: the owner reserves the right to occupy and to place and install equipment in completed areas of the building prior to Substantial Completion, provided such occupancy does not interfere with completion of the work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total work.

1. The Architect will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to Owner occupancy.
2. Obtain a Certificate of Occupancy from local building officials prior to Owner occupancy.
3. Prior to partial Owner occupancy, mechanical and electrical systems shall be fully operational. Required inspections and tests shall have been successfully completed. Upon occupancy, the Owner will operate and maintain mechanical and electrical systems serving occupied portions of the building.
4. Upon occupancy, the Owner will assume responsibility for maintenance and custodial service for occupied portions of the building.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTIONS (Not Applicable)

END OF SECTION 01 10 00

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SECTION 01 21 00
ALLOWANCES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Cash allowances.

B. Unit cost allowances.

C. Contingency allowance.

D. Inspection and testing allowances.

1.02 RELATED SECTIONS

A. Section 01 29 00 – Payment Procedures: Applications for Payment.

B. Section 01 31 13 – Project Coordination.

C. Section 01 33 00- Submittal Procedures: Schedule of Values.

1.03 CASH ALLOWANCES

A. COSTS INCLUDED IN ALLOWANCES: Cost of Product to Contractor, or Subcontractor, less applicable trade discounts; delivery to site and applicable taxes.

B. COSTS NOT INCLUDED IN THE ALLOWANCE: Product handling at the site, including unloading uncrating and storage; protection of Products from elements and from damage and labor for installation and finishing.

C. ARCHITECT RESPONSIBILITIES:

1. Consult with Contractor in 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. Obtain proposals from suppliers and installers and offer recommendations.
2. Assist Architect in selection of Products, suppliers and installers.
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. Funds will be drawn from Cash Allowances only by Change Order.

F. CASH ALLOWANCES

1. No cash allowances have been established to date.

1.04 CONTINGENCY ALLOWANCES

A. Contractor's costs for Products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from this Allowance.

B. Funds will be drawn from Contingency Allowance only by Change Order.

C. At closeout of Contract, funds remaining in Contingency Allowance will be credited to Owner by Change Order.

D. See Schedule of Allowances.

1.05 INSPECTION AND TESTING ALLOWANCES

A. COSTS INCLUDED IN ALLOWANCES: Cost of engaging an inspection or testing firm, execution of inspection or tests, reporting results.

B. COSTS NOT INCLUDED IN THE ALLOWANCE

1. Incidental labor and facilities required to assist inspection or testing firm.
2. Costs of testing laboratory services required 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 inspection or testing firm's invoice with the next application for payment.
2. Pay invoice on approval by Architect.

D. Funds will be drawn from inspection and testing allowances only by change order.

E. At Project closeout, credit unused amounts remaining in the inspection and testing allowance to Owner by Change Order.

F. INSPECTION AND TESTING ALLOWANCES:

1. No Inspection and Testing Allowances have been established to date.

1.06 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise the Architect of the date when the final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

B. At the Architect's request, obtain proposals for each Allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by the Architect from the designated supplier.

1.07 SUBMITTALS

A. Submit proposals for purchase of products or systems included in Allowances, in the form specified for Change Orders.

B. Submit invoices or delivery slips to show the actual quantities of materials delivered to the site for use in fulfillment of each allowance.

1.08 UNUSED MATERIALS

A. Return unused materials to the manufacturer or supplier for credit to the Owner, after installation has been completed and accepted.

1. When requested by the Architect, prepare unused material for storage by Owner where it is not economically practical to return the material for credit. When directed by the Architect, deliver unused material to the Owner's storage space. Otherwise, disposal of unused material is the Contractor's responsibility.

1.09 SCHEDULE OF ALLOWANCES

A. CASH ALLOWANCES.

1 No cash allowances have been established to date.

B. CONTINGENCY ALLOWANCES.

1 Provide $10,000.00 (ten thousand dollars) allowance for additional/revised Owner requested scope items.

C. INSPECTION AND TESTING ALLOWANCES.

1 No inspection & testing allowances have been established to date.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine products covered by an allowance promptly upon delivery for damage or defects.

3.02 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

END OF SECTION 01 21 00

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SECTION 01 23 00
ALTERNATES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Administrative and procedural requirements for alternates.

1.02 RELATED DOCUMENTS AND SECTIONS

A. Division 00 Documents and Division 01 Sections.

1.03 1.03 DEFINITIONS

A. ALTERNATE: An amount proposed by Bidders and noted on the Bid Form for certain Work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems or installation methods described in the Contract Documents.

B. The cost or credit for each Alternate is the net addition to or deduction from the Contract Sum to incorporate the Alternate into the Work. No other adjustments are made to the Contract Sum.

1.04 PROCEDURES

A. COORDINATION: Modify or adjust affected adjacent work as necessary to completely integrate work of the Alternate into Project.

1. Include as part of each Alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of Alternate.

B. NOTIFICATION: Immediately following award of the Contract, notify each party involved, in writing, of the status of each Alternate. Indicate if Alternates have been accepted, rejected or deferred for later consideration. Include a complete description of negotiated modifications to Alternates.

1. Execute accepted Alternates under the same conditions as other work of the Contract.

C. SCHEDULE: A Schedule of Alternates is included at the end of this Section.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 SCHEDULE OF ALTERNATES

A. **ADD ALTERNATE #1:** Add the installation of electrical and data wall mounted outlets at rooms #450A, 450B, 450C, 436C, 436D and 436E as shown on electrical drawings.

B. **ADD ALTERNATE #2:** Add the installation of electrical and data floor box centered underneath the conference table and interconnected with monitor at wall at rooms # 427, 436B, 443 and 450, as shown on electrical drawings.

END OF SECTION 01 23 00

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SECTION 01 29 00
PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Schedule of Values.

B. Change procedures.

C. Procedures for preparation and submittal of Applications For Payment.

D. Defect Assessment.

E. Sales Tax Exemption.

F. Warranty Inspection Retainage.

1.02 RELATED SECTIONS

A. Document 00 72 00 - General Conditions: Progress Payments and Final Payment.

B. Section 01 33 00 – Submittal Procedures.

C. Section 01 78 00 – Closeout Procedures and Submittals: Final Payment.

1.03 SCHEDULE OF VALUES

A. Submit typed schedule on AIA Form G703 - Application and Certificate for Payment Continuation Sheet. Contractor's standard form or electronic media printout will be considered.

B. Submit Schedule of Values in duplicate within 15 days after date of receipt of a Purchase Order from the State Division of Purchases.

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

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

E. Include within each line item, a directly proportional amount of Contractor's overhead and profit.

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

1.04 CHANGE PROCEDURES

A. The Architect will advise of minor changes in the Work not involving an adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions on AIA Form G710 Architect's Supplemental Instructions or other similar form.

B. 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. The contractor will prepare and submit an estimate within 7 days.

C. The Contractor may propose a change by submitting 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/Price 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.

D. STIPULATED SUM/PRICE CHANGE ORDER: Based on Proposal Request and Contractor's fixed or maximum price quotation or Contractor's request for a Change Order as approved by Architect.

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

F. TIME AND MATERIAL CHANGE ORDER: Submit itemized account and support data after completion of change, within time limits indicated in the Conditions of the Contract. The architect will determine the change allowable in Contract Sum/Price and Contract Time as provided in the Contract Documents.

G. CONSTRUCTION CHANGE AUTHORIZATION: Architect may issue a directive, on AIA Form G713 Construction Change Authorization or similar form, signed by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. The document will describe changes in the Work and designate a method of determining any change in Contract Sum/Price or Contract Time. Promptly execute the change.

H. Maintain detailed records of work done on Time and Material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.

I. CHANGE ORDER FORMS: AIA G701 Change Order.

J. EXECUTION OF CHANGE ORDERS: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

K. 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 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 ADMINISTRATIVE SUBMITTALS

A. APPLICATION FOR PAYMENT: In accordance with the General Conditions and as specified herein.

B. FINAL APPLICATION FOR PAYMENT: As specified herein.

1.06 SUBMITTAL PROCEDURES

A. Submit three copies of each Application for Payment.

B. Submit an updated construction schedule with each Application for Payment.

C. PAYMENT PERIOD: Submit at intervals stipulated in the Agreement.

D. Submit under transmittal letter specified in Section 01 33 00.

E. Submit lien waivers.

1.07 FORMAT

A. AIA G702 - Application and Certificate for Payment, including continuation sheets when required.

B. For each item, provide a column for listing: Item Number; Description of Work; Scheduled Value, Previous Applications: Work in Place and Stored Materials under this Application: Authorized Change Orders; Total Completed and Stored to Date of Application; Percentage of Completion; Balance to Finish; and Retainage.

C. Reference the General Conditions.

1.08 SUBSTANTIATING DATA

A. When Architect requires substantiating information, submit data justifying dollar amounts in question.

B. Provide one copy of data with cover letter for each copy of submittal. Show Application number and date, and line item by number and description.

1.09 PREPARATION OF APPLICATIONS

A. Present required information in typewritten form or on electronic media printout.

B. Execute certification by signature of authorized officer.

C. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored Products.

D. List each authorized Change Order as an extension on continuation sheet, listing Change Order number and dollar amount as for an original item of Work.

E. Prepare Application for Final Payment as specified herein.

1.10 PAYMENT

A. GENERAL: Progress payment requests shall be submitted monthly as specified in the General Conditions.

B. Payment for Lump Sum Work covers all Work necessary to furnish, install and/or complete the Work of the Contract.

C. Payment for unit price items covers all Work necessary to furnish, install and/or complete the item.

D. Payment for equipment, materials and labor for items not included on the Bid shall be considered incidental and no separate payment will be made.

1.11 DEFECT ASSESSMENT

A. Replace the Work or portions of the Work not conforming to the 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.

1. The defective work may remain but the unit sum will be adjusted to a new sum at the discretion of the Architect.
2. The defective Work will be partially repaired to the instructions of the Architect and the unit sum will be adjusted to a new some sum at the discretion of the Architect.
3. The authority of the Architect to assess the defect and identify a payment adjustment is final.

C. Payment will not be made for following:

1. Loading, hauling, and disposing of rejected products.
2. Quantities of material wasted or disposed of in manner not acceptable.
3. Products determined as unacceptable before or after placement.
4. Material not completely unloaded from transporting vehicle.
5. Products remaining on hand after completion of the Work.
6. Material remaining on hand after completion of Work.

1.12 PARTIAL PAYMENT FOR STORED MATERIALS AND EQUIPMENT

A. FINAL PAYMENT: Will be made only for materials incorporated into the Work in the Contract; no partial payments shall be made for equipment or materials delivered to the site but not used.

1.13 FINAL APPLICATION FOR PAYMENT

A. Reference the General Conditions, and as may otherwise be required in the Contract Documents.

B. Prior to submitting final application, make acceptable delivery of required documents.

1.14 SALES TAX EXEMPTION

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

1. Obtain Sales Tax Exemption Certificate number from Owner.
2. Place Exemption Certificate number on invoice for materials permanently 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.

C. Prior to submitting final application, make acceptable delivery of required documents.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION 01 29 00

RHODE ISLAND DEPARTMENT OF ADMINISTRATION
SHEPARD BLDG – 4TH FLOOR RENOVATION
Providence, Rhode Island AA 25175

SECTION 01 30 00
ADMINISTRATIVE PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Site Administration.

B. Coordination and project conditions.

C. Pre-construction meeting.

D. Site mobilization meeting.

E. Progress meetings.

F. Pre-installation meetings.

1.02 SITE ADMINISTRATION

A. Maintain a Daily Attendance Log to include the names of all project employees and guests to the site. The log sheets must clearly indicate the Project Name, and the name of the General Contractor. Each line in the log should allow for the name of that employee, the employee's job title (use terminology used by prevailing wage job title), and the name of that employee's employer. Each guest signing the log should indicate a brief description of the reason for the visit and the guest's employer or organization.

1.03 COORDINATION AND PROJECT CONDITIONS

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

B. 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.

C. Coordinate the space requirements, supports and installation of the electrical Work. Utilize spaces efficiently to maximize accessibility for other installations, maintenance or repairs.

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

1.04 PRE-CONSTRUCTION MEETING

A. The Contractor will schedule a meeting after a Purchase Order is issued to the Contractor by the RI State Department of Purchasing.

B. Attendance REQUIRED: Owner, Architect and Contractor.

C. AGENDA:

1. Distribution of the Contract Documents.
2. Submission of a list of Subcontractors, a list of products, Schedule of Values and a Progress Schedule.
3. Designation of personnel representing the parties in the Contract, and the Architect.
4. The procedures and processing of field decisions, submittals, substitutions, Applications for Payment, Proposal Requests, Change Orders and Contract Closeout procedures.
5. Scheduling.
6. The contractor shall 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.

1.05 SITE MOBILIZATION MEETING

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

B. Attendance REQUIRED: Owner, Architect, Special Consultants, Contractor, Contractor's Superintendent and major Subcontractors.

C. AGENDA

1. Use of premises by the Owner and Contractor.
2. Owner's requirements and occupancy.
3. Security and housekeeping procedures.
4. Schedules.
5. Application for Payment procedures.
6. The contractor shall 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.

1.06 PROGRESS MEETINGS

A. The contractor shall schedule and administer the meetings throughout the progress of the Work at weekly or no more than monthly intervals.

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

C. Attendance REQUIRED: Contractor's Superintendent, major Subcontractors and suppliers, Owner and Architect as appropriate to the agenda topics at each meeting.

D. Agenda

1. Review of approval of the minutes of the previous meeting.
2. Review of Work progress since the previous meeting.
3. Field observations, problems and decisions.
4. Problems that impede construction schedule.
5. Review of off-site fabrication, delivery schedules.
6. Maintenance of Progress Schedule.
7. Corrective measures and procedures to regain projected schedule.
8. Progress schedule during the succeeding work period.
9. Maintenance of quality and Work standards.

10. Effect of proposed changes and substitutions on the Progress Schedule and coordination.
11. Coordination of schedules.
12. Other business.

E. The contractor shall 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.

1.07 PRE-INSTALLATION MEETINGS

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

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

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

D. Prepare an agenda and preside at the meeting.

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

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTIONS (Not Applicable)

END OF SECTION 01 30 00

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RHODE ISLAND DEPARTMENT OF ADMINISTRATION
SHEPARD BLDG – 4TH FLOOR RENOVATION
Providence, Rhode Island AA 25175

SECTION 01 31 13
PROJECT COORDINATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Administrative and supervisory requirements necessary for coordinating construction operations including, but not necessarily limited to, the following:

1. General project coordination, administrative procedures and conservation.
2. Submittals.
3. Cleaning and protection.

1.02 RELATED SECTIONS

A. Section 01 30 00 – Administrative procedures.

B. Section 01 33 00 – Submittal Procedures: Contractor's Construction Schedule.

C. Section 01 60 00 – Product Requirements: Materials and Equipment.

D. Section 01 78 00 – Closeout Procedures and Submittals.

E. Section 01 78 39 - Project Record Documents.

1.03 COORDINATION

A. Coordinate construction operations included in various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections that depend on each other for proper installation, connection and operation.

1. Schedule construction operations in the sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
3. Make provisions to accommodate items scheduled for later installation.

B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports and attendance at meetings.

1. Prepare similar memoranda for the Owner and separate contractors where coordination of their work is required.

C. ADMINISTRATIVE PROCEDURES: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of schedules.
2. Installation and removal of temporary facilities.
3. Delivery and processing of submittals.
4. Progress meetings.
5. Project closeout activities.

D. CONSERVATION: Coordinate construction operations to ensure that operations are carried out with consideration given to conservation of energy, water and materials.

1. Salvage materials and equipment involved in performance of, but not actually incorporated in, the Work.

1.04 SUBMITTALS

A. COORDINATION DRAWINGS: Prepare coordination drawings where careful coordination is needed for installation of products and materials fabricated by separate entities. Prepare coordination drawings where limited space availability necessitates maximum utilization of space for efficient installation of different components.

1. Show the relationship of components shown on separate Shop Drawings.
2. Indicate required installation sequences.
3. Comply with requirements contained in Section 01 33 00 – Submittal Procedures.

B. STAFF NAMES: Within 15 days of commencement of construction operations, submit a list of the Contractor's principal staff assignments, including the superintendent and other personnel in attendance at the Project Site. Identify individuals and their duties and responsibilities. List their addresses and telephone numbers.

1. Post copies of the list in the Project meeting room, the temporary field office and each temporary telephone.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 GENERAL COORDINATION PROVISIONS

A. INSPECTION OF CONDITIONS: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

B. Coordinate temporary enclosures with required inspections and tests to minimize the necessity of uncovering completed construction for that purpose.

3.02 CLEANING AND PROTECTION

A. Clean and protect construction in progress and adjoining materials in place, during handling and installation. Apply protective covering where required to assure protection from damage or deterioration at Substantial Completion.

B. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period.

C. LIMITING EXPOSURES: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:

1. Excessive static or dynamic loading; Excessive internal or external pressures.
2. Excessively high or low temperatures; Thermal shock; Excessively high or low humidity; Water or ice.
3. Air contamination or pollution; Solvents, chemicals, light, radiation; Excessive weathering.
4. Puncture, abrasion, heavy traffic.
5. Soiling, staining and corrosion.
6. Bacteria; Rodent and insect infestation.
7. Combustion; Electrical current.
8. High-speed operation; Improper lubrication; Unusual wear or other misuse; Misalignment.
9. Contact between incompatible materials.
10. Destructive testing.
11. Unprotected storage, improper shipping or handling.
12. Theft or vandalism.

END OF SECTION 01 31 13

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RHODE ISLAND DEPARTMENT OF ADMINISTRATION
SHEPARD BLDG – 4TH FLOOR RENOVATION
Providence, Rhode Island AA 25175

SECTION 01 31 19
PROJECT MEETINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pre-Construction Conference and Progress Meetings

1.02 REQUIREMENTS INCLUDED

A. The Contractor shall schedule and administer the Pre-Construction Conference and shall:
   1. Prepare the agenda for the meeting.
   2. Notify all parties required to attend the meeting.
   3. Make physical arrangements for meetings.
   4. Preside at meeting.
   5. Record the minutes, including significant proceedings and decisions.
   6. Reproduce and distribute copies of minutes within seven (7) calendar days after the meeting to participants in the meeting and other parties affected by decisions made at the meeting.

B. The Contractor shall schedule and administer periodic progress meetings and specially called meetings throughout the progress of the work. The Contractor shall:
   1. Prepare agenda for meetings.
   2. Make physical arrangements for meetings.
   3. Preside at meetings.
   4. Record the minutes, including significant proceedings and decisions.
   5. Reproduce and distribute copies of minutes within five (5) calendar days after each meeting to participants in the meeting and other parties affected by decisions made at the meeting.

C. Representatives of Contractors, Subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.

1.02 PRE-CONSTRUCTION CONFERENCE

A. ATTENDANCE: Owner and/or representative, Architect, Contractor, Contractor's Superintendent, major Subcontractors, major suppliers and others as appropriate.

B. SUGGESTED AGENDA
   1. Distribution and discussion of
      a. List of major Subcontractors and suppliers.
      b. Projected construction schedules.
   2. Critical work sequencing.

3. Major equipment deliveries and priorities.
4. PROJECT COORDINATION: Designation of responsible personnel.
5. Procedures and processing of Field decisions, Proposal requests, Submittals, Change Orders and Applications for Payment.
6. Adequacy of distribution of Contract Documents.
7. Procedures for maintaining Project Record Documents.
8. USE OF PREMISES
    a. Office, work and storage areas.
    b. Owner's requirements.
9. Construction facilities, controls and construction aids.
10. Traffic Maintenance Plan.
11. Temporary utilities.
12. Safety and first-aid procedures.
13. Security procedures.
14. Housekeeping procedures.
15. Place, date and time for regular progress meetings.

1.03 PROGRESS MEETINGS

A. Conduct regular scheduled progress meetings at place, dates and times agreed upon at the Pre-Construction Conference.

B. Conduct additional meetings as progress of the work dictates.

C. ATTENDANCE: Architect and his professional consultants as needed, Owner or representative (when required), Contractor, Contractor's Superintendent, Subcontractors as appropriate to the agenda, suppliers as appropriate to the agenda and others as required.

D. SUGGESTED AGENDA
1. Review of approval of the minutes of the previous meeting.
2. Review of work progress since the previous meeting.
3. Field observations, problems and conflicts.
4. Problems that impede construction schedule.
5. Review of off-site fabrication, delivery schedules.
6. Corrective measures and procedures to regain projected schedule.
7. Revisions to construction schedule.
8. Progress schedule during the succeeding work period.
9. Maintenance of quality standards.
10. Pending changes and substitutions.
11. Coordination of schedules.
12. Review submittal schedules; expedite as required.
13. Review proposed changes for:
    A. Effect on Construction Schedule and on completion date.
    B. Effect on subcontracts of the project.
14. Other business.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTIONS (Not Applicable)

END OF SECTION 01 31 19

RHODE ISLAND DEPARTMENT OF ADMINISTRATION
SHEPARD BLDG – 4TH FLOOR RENOVATION
Providence, Rhode Island AA 25175

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. Product data and shop drawings.

E. Samples.

F. Design data.

G. Test Reports.

H. Certificates.

I. Manufacturer's instructions.

J. Manufacturer's field reports.

K. Architect's action.

1.02 RELATED DOCUMENTS

A. Drawings, General Provisions of the Contract and Division 1 Specification Sections apply to the work of this Section.

1.03 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 the submittal was sent, days since submittal was sent, status of submittal, date submittal was received in return and any date associated with re-submittals.

3. Update Master List with each submission and response.

B. GENERAL: Refer to the General Conditions for basic procedures for submittal handling.

C. SUBMITTAL PREPARATION: Mark each submittal with a permanent label for identification.

D. Provide the following information on the label for proper processing and recording of action taken.

1. Project name; Date.

2. Name and address of Owner, Contractor and Supplier.

3. Name of manufacturer; Number and title of appropriate Specification Section; Drawing number and detail references, as appropriate; Similar definite information as necessary.
4. Provide a space on the label for the Contractor's review and approval markings, and a space for the Architect's "Action" marking.

E. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit four (4) copies, plus the number of copies the Contractor wants returned to him after review of each submittal by the Architect, and to other destinations as required, by use of a transmittal form. Prepare a separate transmittal form for each division of work and identify each submittal by Specification Section number on the transmittal form. Submittals received from sources other than the Contractor will be returned to the sender "without action".

1. Submittals will be accepted via E-mail transmission.
2. Record relevant information and requests for data on the transmittal form. On the transmittal form, or on a separate sheet attached to the form, record deviations from the requirements of the Contract Documents, if any, including minor variations and limitations.
3. **No submittals will be accepted by the Architect if transmitted via FAX machine.**
4. Include the Contractor's signed certification stating that information submitted complies with requirements of the Contract Documents.
5. Sequentially number the transmittal forms; resubmittals to have original number with an alphabetic suffix.

F. Contractor's Review: Stamp of approval indicates to Owner and Architect that all quantities, dimensions, field construction criteria, materials, catalog numbers and similar data have been determined and verified, and that each submittal has been reviewed or coordinated with requirements of Work and Contract Documents. **Failure to provide the Contractor's Review Stamp shall be grounds for the Submittal to be returned to the Contractor with no action taken.**

G. No portion of Work requiring shop drawings shall be started or any materials be fabricated, delivered to site or installed prior to approval of such items. Fabrication performed, materials purchased, or on-site construction accomplished which does not conform to approved shop drawings and data shall be at Contractor's risk. The owner will not be liable for any expense or delay due to corrections or remedies required to accomplish conformity.

H. Project work, materials, fabrications and installation shall conform to approved shop drawings.

I. COORDINATION: Coordinate the preparation and processing of submittals with the performance of the work. Coordinate each separate submittal with other submittals and related activities such as testing, purchasing, fabrication, delivery and similar activities that require sequential activity.

1. Coordinate the submittal of different units of interrelated work so that one submittal will not be delayed by the Architect's need to review a related submittal. The Architect reserves the right to withhold action on any submittal requiring coordination with other submittals until related submittals are forthcoming.

J. SCHEDULING: In each appropriate administrative submittal, such as the Progress Schedule, show the principal work-related submittals and time requirements for coordination of submittal activity with related work.

K. COORDINATION OF SUBMITTAL TIMES: Prepare and transmit each submittal to the Architect sufficiently in advance of the scheduled performance of related work and other applicable activities. Transmit different kinds of submittals for the same unit of work so that processing will not be delayed by the Architect's need to review submittals concurrently for coordination.

L. REVIEW TIME: Allow sufficient time so that the installation will not be delayed as a result of the time required to properly process submittals, including time for resubmittal, if necessary. Advise the Architect on each submittal, as to whether processing time is critical to the progress of the work, and if the work would be expedited if processing time could be shortened.

1. Allow Five (5) calendar days for the Architect's initial processing of each submittal, excluding delivery tome from and to the Contractor. Allow a longer time period where processing must be delayed for coordination with subsequent submittals. The Architect will advise the Contractor promptly when it is determined that a submittal being processed must be delayed for coordination.
2. Allow Two (2) calendar days for reprocessing each submittal.
3. No extension of time will be authorized because of the Contractor's failure to transmit submittals to the Architect sufficiently in advance of the work.

A. MISCELLANEOUS SUBMITTALS

1. INSPECTION AND TEST REPORTS: Classify each inspection and test report as being either "shop drawings" or "product data" depending on whether the report is specially prepared for the project, or a standard publication of workmanship control testing at the point of production. Process inspection and test reports accordingly.
2. SURVEY DATA: Provide copies of all survey data collected for property surveys, field measurements, and quantitative records of actual work, damage surveys and similar data required by the individual Sections of these specifications. None of the specified copies will be returned.
3. STANDARDS: Where submittal of a copy of standards is indicated, and except where copies of standards are specified as an integral part of a "Product Data" submittal, submit a single copy of standards for the Architect's use. Where workmanship, whether at the project site or elsewhere, is governed by a standard, furnish additional copies of the standard to installers, Owner's field representative and others involved in the performance of the Work.
4. CLOSEOUT SUBMITTALS: Refer to section "Project Closeout" and to individual Sections of these specifications for specific submittal requirements of project closeout information, materials, tools and similar items.
5. RECORD DOCUMENTS: Furnish set of original documents as maintained on the project site.
6. GENERAL DISTRIBUTION: Provide additional distribution of submittals to Subcontractors, suppliers, fabricators, installers, governing authorities and others as necessary for the proper performance of the Work. Include such additional copies of submittals in the transmittal to the Architect where the submittals are required to receive "Action" marking before final distribution. Record distributions on transmittal forms.

1.04 CONSTRUCTION PROGRESS SCHEDULES

A. Submit preliminary outline Schedules within 5 days after the receipt of a Purchase Order from RI State Department of Purchasing for coordination with Owner's requirements. After being reviewed, submit detailed Schedules within 2 days modified to accommodate the revisions recommended by the Architect. Progress schedules to be submitted monthly.

B. Show a complete sequence of construction by activity, identifying the Work of separate stages and other logically grouped activities. Indicate the early and late start, the early and late finish, float dates and duration. All work shall take place after school hours.

1.05 PRODUCT DATA AND SHOP DRAWINGS

A. Submit for review for the limited purpose of checking for conformance with the information given and the design concept expressed in the Contract Documents.

B. Submit the number of copies which the Contractor requires plus two copies the Architect will retain. For shop drawings, submit in the form of 4 opaque reproductions.

C. Should the contractor choose to e-mail submittals, the contractor will be responsible for copies to be filed for the owner upon completion of the project.

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

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

F. After reviewing, distribute in accordance with the requirements of this Section and provide copies for Record Documents described in Section 01 78 39.

1.06 SAMPLES

A. Submit for review for the limited purpose of checking for conformance with the information given and the design concept expressed in the Contract Documents.

B. 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.

C. Include identification on each sample with full Project information.

D. Submit 2 samples of specified materials specified within the Construction Documents, in the individual specification Sections or as requested by the Architect. The architect will retain one sample.

E. Reviewed samples which may be used in the Work are indicated in the individual specification Sections.

F. Samples will not be used for testing purposes unless they are specifically stated to be in the individual specification Sections.

1.07 DESIGN DATA

A. Submit for the Architect's knowledge as Contract Administrator or for the Owner.

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

1.08 TEST REPORTS

A. Submit simultaneously to the Architect and the Owner.

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

1.09 CERTIFICATES

A. When specified in the individual specification Sections, submit certification by the manufacturer, installation/applicator subcontractor, or 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.

1.10 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 the Product Data.

B. Indicate the special procedures, the perimeter condition requiring special attention and the special environmental criteria required for application or installation.

1.11 MANUFACTURER'S FIELD REPORTS

A. Submit reports for the Architect's benefit as Contract Administrator or for the Owner.

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

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

1.12 ARCHITECT'S ACTION

A. GENERAL: Except for submittals for the record and similar purposes, where action and return on submittals is required or requested, the Architect will review each submittal, mark with appropriate "Action", and where possible return within Five (5) calendar days of receipt. Where the submittal must be held for coordination, the Architect will advise the Contractor without delay.

B. ACTION STAMP: The Architect will stamp, sign and date each submittal copy to be returned to Contractor and indicate disposition of each submittal in accordance with the following grading requirements:

1. "Approved" or "Reviewed" indicates that Architect notes not exception to the intent of the Contract Documents. Fabrication of item may commence.
2. "Not Approved" or "Rejected" indicates nonconformance with the Contract requirements. The Architect will state the reasons for rejections.
3. "Revise and Resubmit" indicates nonconformance with the Contract requirements or that too many corrections would be necessary. No fabrication may commence.
4. "Furnish As Corrected" indicates that the Architect notes changes needed to the intent of the Contract Documents. The Contractor is responsible for completing all noted changes.

C. ARCHITECT'S REVIEW

1. Architect's review of submitted drawings and data will cover only general conformity to drawings and specifications, external connections and dimensions which affect layout.
2. Architect's review does not indicate thorough review of all dimensions.
3. **Architect's review of submittals does not relieve Contractor's responsibility for errors, omissions or deviations, field verification of all dimensions nor responsibility for compliance with Contract Documents.**

1.13 RESUBMISSION REQUIREMENTS

A. Make any corrections or changes in the submittals required by the Architect and resubmit until they are denoted "Approved", "Reviewed", "Approved as Noted" or "Furnish as Corrected" by the Architect. Resubmission requirements specified in individual specifications Sections, which differ from these requirements, will take precedence over these requirements.

B. SHOP DRAWINGS AND PRODUCT DATA

1. Revise initial drawings or data and resubmit as specified for the initial submittal.
2. Indicate any changes which have been made other than those requested by the Architect.

C. SAMPLES: Submit new samples as required for initial submittal.

1.14 DISTRIBUTION

A. Distribute reproductions of shop drawings and copies of product data which carry the Architect's stamp denoting "Approved", "Reviewed", "Approved as Noted" or "Furnish as Corrected" to:

1. Job site file; Record documents file.
2. Subcontractors; Supplier or fabricator.

B. Distribute samples which carry the Architect's stamp denoting "Approved", "Reviewed", "Approved as Noted" or "Furnish as Corrected" as directed by the Architect.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION 01 33 00

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RHODE ISLAND DEPARTMENT OF ADMINISTRATION
SHEPARD BLDG – 4TH FLOOR RENOVATION
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SECTION 01 45 00
QUALITY CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Quality assurance and control of installation.

B. Verification of Credentials and Licenses

C. Tolerances.

D. References.

1.02 RELATED SECTIONS

A. Section 01 33 00 – Submittal Procedures: Submission of Manufacturers' Instructions and Certificates.

B. Section 01 60 00 – Product Requirements: Requirements for material and product quality.

1.03 QUALITY ASSURANCE/CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions and workmanship, to produce Work of specified quality.

B. Comply fully with manufacturers' instructions, including each step-in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

D. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes or specified requirements indicate higher standards or more precise workmanship.

E. Perform work by qualified people to produce workmanship of specified quality.

F. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.04 VERIFICATION OF CREDENTIALS AND LICENSES

A. An element of this oversight process is the verification that persons employed on the Project site have appropriate and current credentials and licenses in their possession, at the Project site, for the work they are performing.

B. Those persons without appropriate and current credentials and licenses will be subject to dismissal from the Project site.

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 manufacturers' tolerances. When the manufacturers' tolerances conflict with the Contract Documents, request 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 date of issue current on date of Contract Documents, except where a specific date is established by Code.

C. Obtain copies of standards when required by Contract Documents.

D. Should specified reference standards conflict with Contract Documents, request clarification for Architect before proceeding.

E. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION 01 45 00

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RHODE ISLAND DEPARTMENT OF ADMINISTRATION
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SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Mobilization and demobilization.

B. Temporary Utilities.

C. Construction facilities.

D. Temporary barriers and enclosures.

E. Protection of Work.

F. Temporary controls.

G. Project identification.

1.02 RELATED SECTIONS

A. Drawings, General Provisions of the Contract and Division 1 Sections apply to the work of this Section.

1.03 GENERAL

A. The limits of the site and areas designated for Contractor staging are shown on the Drawings.

B. The limits of the Owner's property are shown on the Drawings.

C. In the event additional space is required for the Contractor's operations, the Contractor shall make its own arrangements and pay for such additional space.

D. A Field Office for Site/Owner Meetings is not required.

1.04 PRIVATE LAND

A. The Contractor shall not enter or occupy private land outside of easements, except by written permission of the property Owner. Furnish Architect with copies of all agreements the Contractor has with property Owners to enter or occupy private lands.

1.05 PERMITS AND TEMPORARY FACILITIES

A. The Contractor shall obtain necessary permits, coordinate and provide all temporary facilities as required for performing the work, including any facilities specified for the Owner's or the Architect's use.

1.06 CONTROL OF TEMPORARY FACILITIES

A. All temporary facilities shall be subject to the control and direction of the Owner.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 MOBILIZATION

A. Provide all work necessary to move in personnel and equipment, set up Contractor's temporary offices, buildings, facilities, utilities, and prepare the site for construction.

B. Set up construction facilities in a neat and orderly manner within the Contractor's staging area and at a location acceptable to the Architect. Accomplish all required work in accordance with applicable portions of these Specifications. Confine operations within the general work limits shown or established.

3.02 REMOVAL OF TEMPORARY FACILITIES AND CONTROLS

A. Temporary utilities, barricades, signs and other appurtenances related to prosecution of the Work and not incorporated in the permanent construction shall be completely removed from the site prior to acceptance of work by the Owner.

B. Upon completion of work of all trades and before final acceptance of entire Project, each trade shall remove, at its own expense, all wiring, appurtenances and accessories used in performance of its respective work.

C. Clean and repair damage caused by installation or use of temporary work.

D. Restore permanent facilities used during construction to the specified condition.

3.03 DEMOBILIZATION

A. At the completion of the work and immediately prior to final inspection, clean the entire project area removing all debris, soil and rubbish.

1. Should Contractor not remove rubbish or debris or not clean the facilities and site as specified above, the Owner reserves the right to have final cleaning done by others at the sole expense of the Contractor.

B. The Contractor shall:

1. Employ experienced workers or professional cleaners for final cleaning.

2. Conduct final inspection of concealed spaces in preparation for Contract completion.

3. Remove from the property temporary structures and materials, equipment and appurtenances not required as part of, or appurtenant to, the completed work.

4. Leave watercourse, gutters and ditches open and in condition satisfactory to Architect.

3.04 TEMPORARY UTILITIES

A. The Contractor shall coordinate for and obtain the necessary permits for connection to these services.

3.05 TEMPORARY WATER

A. Owner will provide water supply as required for used in connection with Work to be done under this Contract.

B. The Contractor shall pay for the cost of the water usage.

3.06 TEMPORARY ELECTRICITY AND/OR LIGHTING

A. Arrange with Owner to provide all power for heating, lighting, operation of equipment or for any other required use.

B. Install circuit and branch wiring, with area distribution boxes located so that power and lighting is available throughout construction by use of construction-type power cords.

C. Provide artificial lighting for areas of work when natural light is not adequate for work, and for areas accessible to the public.

D. Furnish all extension cords, sockets, lamps, motors and accessories for work. Ground all outlets.

E. All temporary wiring, service equipment and accessories thereto installed shall be removed at expense of Contractor after serving its purpose.

F. The contractor is required to pay for replacement of all lamps broken and/or removed from premises during construction period and until date of Substantial Completion of Work and written acceptance by Owner.

3.07 INTERFERENCE WITH EXISTING STRUCTURES

A. Whenever it may be necessary to cross or interfere with existing culverts, drains, water pipes or fixtures, guardrails, fences, or other structures needing special care, due notice shall be given to the Architect and to the various public and private agencies or individuals responsible for the utility or structure that is interfered with.

B. Whenever required, all objects shall be strengthened to meet any additional stress that the work herein specified may impose upon it, and any damage caused shall be thoroughly repaired.

C. The entire Work shall be the responsibility of the Contractor, and the Work shall be performed at no additional expense to the Owner.

D. All damaged items of Work or items required to be removed and replaced due to construction shall be replaced or repaired by the Contractor to the complete satisfaction of the property Owners and/or the Architect at no additional expense to the Owner.

3.08 TEMPORARY SANITARY FACILITIES

A. Utilize existing sanitary facilities on site as designated by DOA for needs of all construction workers and others performing work or furnishing services on project.

B. Ensure that existing sanitary facilities are:

1. Cleaned and maintained as required.

3.09 PARKING

A. Public lot / Street Parking.

3.10 INTERIOR ENCLOSURES

A. Provide temporary soundproof partitions and ceilings as required to separate work areas from Owner occupied areas, to prevent penetration of dust and moisture into Owner occupied areas and to prevent damage to existing materials and equipment.

B. CONSTRUCTION: Framing, plywood and gypsum board sheet materials with closed joints and sealed edges at intersections with existing surfaces; insulated to R-13, STC rating of 35 in accordance with ASTM E90 and maximum Flame Spread Rating of 75 in accordance with ASTM E84.

C. Paint surfaces exposed to view from Owner occupied areas.

3.11 PUBLIC SAFETY

A. At all times until final acceptance of Work by Owner, the Contractor shall protect Work and shall take all precautions of preventing injuries to persons or damage to property on or about site.

B. The Contractor shall comply with all applicable laws, ordinances, rules and regulations regarding safety of persons or property or regarding protecting them from damage, injury or loss and shall not load or permit any part of Work to be placed to endanger safety of Work.

C. Conduct the work such that adjacent tenants shall have reasonable access to their property. The Contractor shall be responsible for providing such reasonable safe means of access to public way as Architect deems essential. When it is necessary to leave materials and equipment upon highway or city or town way, place them to cause least possible obstruction to drainage, pedestrian and other travel.

3.12 CARE AND PROTECTION OF PROPERTY

A. The Contractor shall be responsible for the preservation of all public and private property and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect or misconduct in the execution of the Work on the part of the Contractor, such property shall be restored by the Contractor, at his expense, to a condition similar or equal to that existing before the damage was done, or he shall make good the damage in other manner acceptable to the Architect.

B. The protection, removal and replacement of existing physical features along the line of Work shall be a part of the Work under the Contract, and all costs in connection therewith shall be included in the unit and/or lump sum prices established under the items in the proposal.

3.13 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

A. The Contractor shall assume full responsibility for the protection of all buildings, structures and utilities, public or private, including poles, signs, services to buildings, utilities in the street, gas pipes, water pipes, hydrants, sewers, drains, electric and telephone cables and cesspools adjacent to trench excavations, whether or not they are shown on the Drawings. The Contractor shall carefully support and protect all such structures and utilities from injury of any kind. Any damage resulting from the Contractor's operations shall be repaired by him at his expense, to the damaged items original condition.

B. Protection and temporary removal and replacement of existing utilities and structures as described in this section shall be a part of the work under the Contract and all costs in connection therewith shall be included in the unit prices established in the proposal.

3.14 PROTECTION OF WORK

A. The Contractor shall at all times protect excavations, trenches, new construction, old construction, all job materials, apparatus and fixtures from rain, wind, snow, ice, dust, dirt, mud, groundwater, back-up or leakage of sewers, drains or other piping, and from water of any other origin, and shall remove promptly any accumulation of the above. He shall provide and operate all pumps, piping and other equipment necessary to this end at no additional cost to Owner.

B. Thoroughly protect all completed work and all stored materials.

C. Provide boards, cloths, planks, waterproof paper, canvas or other approved protection and use as necessary to prevent any damage.

D. Replace or rectify work or materials damaged by workmen, by the elements or by any other cause, to the satisfaction of the Architect and at no additional expense to the Owner.

E. Do not allow workmen, including those of any Subcontractor or supplier, to mark finish surfaces with marking pens or other such devices that are not readily erasable.

F. Protect installed Work and provide special protection where specified in individual specification Sections.

G. Provide temporary and removable protection for installed products. Control activity in immediate work areas to minimize damage.

H. Provide protective coverings at walls, projections, jambs, sills and soffits of openings.

I. Protect finished floors and other surfaces from traffic, dirt, wear, damage or movement of heavy objects by protecting them with durable sheet materials.

3.15 NOISE CONTROL

A. The Contractor shall employ all reasonable measures to avoid unnecessary noise and ensure that noise is appropriate for normal ambient sound levels in the work area during working hours. Where required by agencies having jurisdiction, certain noise-producing work may have to be performed during specified periods only. Noise control measures during normal work hours shall include but not be limited to:

1. Operate machinery in a manner to cause least noise consistent with efficient performance of work.

2. Equip all construction machinery with sound-muffling devices.

3. During construction adjacent to or near occupied buildings, erect screens or barriers to reduce noise in building to limits in accordance with applicable codes. Conduct operations in such a manner as to avoid unnecessary noise which might interfere with activities of building occupants.

B. When the Contractor's work extends beyond normal working hours, the Contractor shall incorporate to complete satisfaction of the Owner and Architect, adequate noise prevention measures to ensure minimum noise impact on the surrounding areas. Noise prevention measures shall include, but not be limited to:

1. Insulated enclosures.

2. Hospital grade silencers or mufflers.

3. Equipment modification.

4. Special equipment, as necessary to meet Municipal noise guidelines/ordinances.

5. Any other noise prevention measures.

C. Should at any time the Owner and/or Architect determine that noise prevention measures are inadequate, the Contractor shall suspend all such work in question until acceptable measures are incorporated. Suspension of work due to inadequate noise prevention shall not be a cause for additional cost to the Owner.

D. Prior to the start of any Work outside normal work hours, the Contractor shall submit a Noise Control plan to the Owner and Architect for review. Noise Control plans shall be submitted for:

1. Night work.

2. All Pumping operations and work that may extend beyond normal workday.

3. Any other work as determined by the Architect that warrants special noise prevention measures.

E. All costs associated with noise control measures shall be considered part of the bid price for appropriate work to be completed.

3.16 POLLUTION CONTROL

A. Prevent pollution of drains and watercourses by sanitary waste, sediment, debris and other substances resulting from construction activities.

1. Do not allow sanitary waste to enter any drain or watercourse other than sanitary sewers.

B. Do not allow sediment, debris or other substances to enter sanitary sewers and take measures to prevent such materials from entering any drain or watercourse.

END OF SECTION 01 50 00

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RHODE ISLAND DEPARTMENT OF ADMINISTRATION
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SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Products, materials and equipment.

B. Transportation and handling.

C. Storage and protection.

D. Product options.

E. Substitutions.

1.02 RELATED SECTIONS

A. Section 01 45 00 - Quality Control: Product quality monitoring.

1.03 MANUFACTURED AND FABRICATED PRODUCTS

A. Design, fabricate and assemble in accordance with the best engineering and shop practices.

B. Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.

C. Two or more items of the same kind shall be identical, by the same manufacturer.

D. Products shall be suitable for service conditions.

E. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically reviewed by Architect.

F. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

1.04 MATERIAL AND EQUIPMENT INCORPORATED INTO THE WORK

A. Conform to applicable specifications and standards.

B. Comply with size, make, type and quality specified within these specifications and construction documents or as specifically reviewed by the Architect.

1.05 MANUFACTURER'S INSTRUCTIONS

A. When the Contract Documents require that installation of Work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, as specified in Section 01 33 00 – Submittal Procedures.

B. Maintain one set of complete instructions at the job site during installation and until completion.

C. Handle, install, connect, clean, condition and adjust products in strict accordance with such instructions and in conformity with specified requirements.

D. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Architect for further instructions.

E. Do not proceed with Work without clear instructions.

F. Perform Work in accordance with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by the Contract Documents.

1.06 CERTIFICATES OF CONFORMANCE AND MANUFACTURE

A. In addition to other requirements specified herein, the Contractor shall furnish to the Architect, as specified in Section 01 33 00 - Submittals, notarized certificates of conformance and manufacture that all materials and/or equipment to be furnished under this Contract meet the specification requirements. When directed, each shipment of material shall be accompanied by the manufacturer's notarized certificates of conformance and manufacture. Unless otherwise specifically specified, all testing of materials shall be provided by the Contractor at no additional expense to the Owner.

B. Each manufacturer's certificate shall be endorsed or accompanied by the Contractor's certificate that the material certified by the manufacturer will be the material incorporated in the Work.

1.07 TRANSPORTATION AND HANDLING

A. Arrange deliveries of products in accordance with construction and DOA schedules, coordinate to avoid conflict with Work, conditions at the site, DOA daily operations and also when two or more trades, contractors or suppliers are involved.

B. Transport all materials and equipment on legally approved conveyances as required or recommended by the respective manufacturer, supplier, and DOA.

C. Deliver products in undamaged conditions, in manufacturer's original containers or packaging with identifying labels intact and legible.

D. Receive and handle all materials and equipment, at the Project site, by conveyances or methods as recommended by the respective manufacturer or supplier to prevent damage to products.

E. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and reviewed submittals, and that products are properly protected and undamaged.

F. Remove from the site any material or item of equipment damaged during the transportation or handling process and immediately replace at no additional cost to the Owner.

1.08 STORAGE AND PROTECTION

A. Coordinate on site storage locations on building with DOA.

B. Store products in accordance with the manufacturer's instructions, with seals and labels intact and legible.

C. Store products subject to damage by the elements in weathertight enclosures.

D. Maintain temperature and humidity within the ranges required by manufacturer's instructions.

E. Storage within the building is limited. The Contractor will not have full access to project area. Always maintain all storage areas in a clean and orderly condition.

1.09 EXTERIOR STORAGE

A. No products shall be stored outside.

1.10 PROTECTION AFTER INSTALLATION

A. Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove when no longer needed.

1.11 PRODUCT OPTIONS

A. PRODUCTS SPECIFIED BY REFERENCE STANDARDS OR BY DESCRIPTION ONLY: Any product meeting those standards or description.

B. PRODUCTS SPECIFIED BY NAMING ONE OR MORE MANUFACTURERS: Products of manufacturers named and meeting specifications, no options or substitutions allowed.

C. PRODUCTS SPECIFIED BY NAMING ONE OR MORE MANUFACTURERS WITH A PROVISION FOR SUBSTITUTIONS: Submit a request for substitution for any manufacturer not named.

1.12 SUBSTITUTIONS

A. Instructions to Bidders specify time restrictions for submitting requests for Substitutions during the bidding period to requirements specified in this Section.

B. Thereafter, Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.

C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

D. A REQUEST CONSTITUTES A REPRESENTATION THAT THE CONTRACTOR:

1. has investigated the proposed product and determined that it meets or exceeds the quality level of the specified product.
2. Will provide the same warranty for the Substitution as for the specified product.
3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete, with no additional cost to Owner.
4. Waives claims for additional costs or time extension that may subsequently become apparent.
5. Will reimburse Owner for review or redesign services associated with re-approval by authorities.

E. **Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.**

F. SUBSTITUTION SUBMITTAL PROCEDURE

1. Submit four copies of request for Substitution for consideration. Limit each request to one (1) proposed Substitution.
2. Submit shop drawings, product data and certified test results attesting to the proposed product equivalence.

3. The Architect will notify the Contractor, in writing, of the decision to accept or reject requests.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION 01 60 00

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RHODE ISLAND DEPARTMENT OF ADMINISTRATION
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SECTION 01 71 13
MOBILIZATION AND DEMOBILIZATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Work necessary to move in personnel and equipment, set up Contractor's temporary offices, buildings, facilities, utilities, prepare the site for construction and demobilize complete.

1.02 RELATED SECTIONS

A. Section 01 50 00 – Temporary Facilities and Controls.

1.03 GENERAL

A. The limits of the site are shown on the Drawings. Areas designated for Contractor staging shall be coordinated with the Owner in the field.

B. The limits of the Owner’s property are shown on the Drawings.

C. In the event additional space is required for the Contractor’s operations, the Contractor shall make its own arrangements and pay for such additional space.

PART 2 PRODUCTS

2.01 TEMPORARY FACILITIES

A. The Contractor shall obtain necessary permits, coordinate and provide all temporary facilities as required for performing the work, including any facilities specified for the Owner’s or the Architect’s use.

2.02 TEMPORARY UTILITIES

A. The Contractor shall coordinate for and obtain the necessary permits for connection to these services.

PART 3 EXECUTION

3.01 LAYOUT

A. Set up construction facilities in a neat and orderly manner within the Contractor’s staging area and at a location acceptable to the Architect. Accomplish all required work in accordance with applicable portions of these Specifications. Confine operations within the general work limits shown.

3.02 DEMOBILIZATION

A. At the completion of the work and immediately prior to final inspection, clean the entire project area removing all debris, soil and rubbish.

1. Should Contractor not remove rubbish or debris or not clean the facilities and site as specified above, the Owner reserves the right to have final cleaning done by others at the sole expense of the Contractor.

B. The Contractor shall:

1. Employ experienced workers or professional cleaners for final cleaning.
2. Conduct final inspection of concealed spaces in preparation for Contract completion.
3. Remove from the property temporary structures and materials, equipment and appurtenances not required as part of, or appurtenant to, the completed work.

END OF SECTION 01 71 13

RHODE ISLAND DEPARTMENT OF ADMINISTRATION
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SECTION 01 73 29
CUTTING AND PATCHING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Administrative and procedural requirements for cutting and patching.

1.02 RELATED SECTIONS

A. **Section 01 31 13** – Project Coordination: Procedures for coordinating cutting and patching with other construction activities.

B. **Section 02 41 13** - Selective Demolition: Demolition of selected portions of the building for repairs.

C. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.03 SUBMITTALS

A. CUTTING AND PATCHING PROPOSAL: Submit a proposal describing procedures well in advance of the time cutting and patching will be performed if the Owner requires approval of these procedures before proceeding. **Request approval to proceed.** Include the following information, as applicable, in the proposal:

1. Describe the extent of cutting and patching required. Show how it will be performed and indicate why it cannot be avoided.
2. Describe anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
3. List of products to be used and firms or entities that will perform Work.
4. Indicate dates when cutting and patching will be performed.
5. **UTILITIES: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.**
6. Where cutting and patching involves adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with the original structure.
7. Approval by the Architect to proceed with cutting and patching does not waive the Architect's right to later require complete removal and replacement of unsatisfactory work.

1.04 QUALITY ASSURANCE

A. REQUIREMENTS FOR STRUCTURAL WORK: Do not cut and patch structural elements in a manner that would change their load-carrying capacity or load-deflection ratio.

1. Obtain approval of the cutting and patching proposal before cutting and patching structural elements.

B. OPERATIONAL LIMITATIONS: Do not cut and patch operating elements or related components in a manner that would result in reducing their capacity to perform as intended. Do not cut and patch operating elements or related components in a manner that would result in increased maintenance or decreased operational life or safety.

1. Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems:

A. Primary operational systems and equipment.

B. Air or smoke barriers; Water, moisture or vapor barriers.

C. Membranes and flashings.

D. Fire protection systems.

E. Noise and vibration control elements and systems.

F. Electrical wiring systems; Control systems; Communication systems.

C. VISUAL REQUIREMENTS: Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. Remove and replace construction cut and patched in a visually unsatisfactory manner.

1. If possible, retain the original Installer or fabricator to cut and patch the exposed Work. If it is impossible to engage the original Installer or fabricator, engage another recognized experienced and specialized firm.

1.05 WARRANTY

A. EXISTING WARRANTIES: Replace, patch and repair material and surfaces cut or damaged by methods and with materials in such a manner as not to void any warranties required or existing.

PART 2 PRODUCTS

2.01 MATERIALS - GENERAL

A. Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible, if identical materials are unavailable or cannot be used. Use materials whose installed performance will equal or surpass that of existing materials.

PART 3 EXECUTION

3.01 INSPECTION

A. A. Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed before cutting. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding.

1. Before proceeding, meet at the Project Site with parties involved in cutting and patching. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.02 PREPARATION

A. Temporary Support: Provide temporary support for work to be cut.

B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.

C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Avoid cutting existing utilities serving the building but scheduled to be removed or relocated until provisions have been made to bypass them.

3.03 PERFORMANCE

A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.

B. Cutting: Cut existing construction methods least likely to damage elements retained or adjoining construction. Where possible, review proposed procedures with the original Installer; comply with the original Installer's recommendations.

1. In general, where cutting, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.

3. Cut through concrete and masonry using a cutting machine, such as a carborundum saw or a diamond-core drill.

4. Where services are required to be removed, relocated, or abandoned, bypass utility services, such as pipe or conduit before cutting. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal the remaining pipe or conduit to prevent entrance of moisture or other foreign matter after bypassing and cutting.

C. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.

1. Where feasible, inspect and test patched areas to demonstrate the integrity of the installation.

2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.

3. Where removing walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

a. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing the patch after the area has received primer and second coat.

4. Patch, repair or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

3.04 CLEANING

A. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar items. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

END OF SECTION 01 73 29

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SECTION 01 74 00
CLEANING AND WASTE MANAGEMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Provide all necessary material, labor and equipment to maintain the job site free of debris and waste material during construction and to perform final cleaning.

1.02 RELATED SECTIONS

A. **Section 01 78 00** – Closeout Procedures and Submittals.

B. Cleaning and protection requirements as described in other Sections of this Project Manual.

1.03 REQUIREMENTS OF REGULATORY AGENGIES

A. SAFETY STANDARDS: Maintain project in accordance with the following safety and insurance standards: Federal Occupational Safety and Health Act of 1970.

B. FIRE PROTECTION: Store volatile waste in covered metal containers and remove from premises daily.

C. POLLUTION CONTROL: Conduct clean-up and disposal operations to comply with local ordinances and anti-pollution laws.

1. Burning or burying of rubbish and waste materials on the Project site is not permitted.
2. Disposal of volatile fluid waste (such as mineral spirits, oil or paint thinner) in storm sanitary sewer systems or into streams or waterways is not permitted.

PART 2 PRODUCTS

2.01 CLEANING MATERIALS

A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.

B. Use cleaning materials only on surfaces recommended by cleaning material manufacturers.

PART 3 EXECUTION

3.01 DURING CONSTRUCTION

A. Oversee cleaning and ensure that buildings and grounds are maintained free from accumulations of waste material and rubbish.

B. Do not allow waste materials, rubbish and debris to accumulate and become an unsightly or hazardous condition. At reasonable intervals or as directed by the Architect during the progress of work, clean up site and access and dispose of waste materials, rubbish and debris from the site and legally dispose of at public or private dumping areas off the Owner's property.

C. Immediately after unpacking, remove and dispose of all packing materials, case lumber, excelsior, wrapping or other rubbish from site.

D. DOA requires that the GC maintain a recycling program throughout the project. Documentation shall be submitted to DOA and the Architect outlining percentages of overall waste materials recycled broken down by materials recycled.

E. Remove all waste from site and dispose in a manner complying with local ordinances and antipollution laws.

F. Store volatile waste in covered metal containers and remove daily.

G. Vacuum clean interior building areas when ready to receive the painting and continue vacuum cleaning on an as-needed basis until building is ready for acceptance or occupancy.

H. Lower waste materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.

I. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet newly painted surfaces.

J. Provide trash receptacles about site and empty containers daily.

K. Neatly stack construction materials, such as concrete forms and scaffolding, when not in use.

L. Promptly remove splattered concrete, asphalt, oil, paint, corrosive liquids and cleaning solutions from surfaces to prevent marring or other damage to satisfaction of Architect.

M. Sprinkle dusty debris with water and calcium chloride as needed.

N. Ensure that waste is not buried or burned on site or disposed of into storm drains, sanitary sewers, steams or waterways.

E. Cleanup as determined by Architect will be a condition for recommendation of progress payment application.

1. The contractor shall have full responsibility for cleaning up during and immediately upon completion of work. Remove all rubbish, waste, tools, equipment and appurtenances caused by and used in execution of work, leaving site clean, free of debris and in condition acceptable to Architect.
2. Equipment or material shall not be left within any work area after acceptance of Contract without written permission of Architect. Do not abandon any material at or near site regardless of its value.

3.02 FINAL CLEANING

A. Use experienced workmen or professional cleaners for final cleaning.

B. At completion of construction and just prior to acceptance or occupancy, conduct a final inspection to exposed exterior and interior surfaces.

C. Remove grease, dust, dirt, stains, labels, fingerprints and other foreign materials from interior and exterior surfaces.

D. Repair, patch and touch-up marred surfaces to match adjacent surfaces.

E. Broom clean paved surfaces; rake clean other surfaces of grounds.

F. Replace air conditioning filters if units were operated during construction.

G. Clean ducts, blowers and coils if air conditioning units were operated without filters during construction.

H. Maintain cleaning until the building or portion is accepted by the Owner.

END OF SECTION 01 74 00

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SECTION 01 75 00
STARTING AND ADJUSTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Starting systems.

B. Demonstration and instructions.

C. Testing, adjusting and balancing.

1.02 RELATED SECTIONS

A. Section 01 45 00 - Quality Control: Manufacturers field reports.

B. Section 01 78 00 – Closeout Procedures and Submittals: System operation and maintenance data and extra materials.

C. Division 8 Sections pertaining to Openings.

D. Division 26 Sections pertaining to Electrical systems.

1.03 STARTING SYSTEMS

A. Coordinate schedule for start-up of various equipment and systems.

B. Notify Architect and Owner seven days prior to start-up of each item.

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

D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

E. Verify wiring and support components for equipment are complete and tested.

F. Execute start-up under supervision of responsible Contractors' personnel in accordance with manufacturers' instructions.

G. When specified in individual specification Sections, require the manufacturer to provide authorized representatives to be present at site to inspect, check and approve equipment or system installation prior to start-up and to supervise placing equipment or system in operation.

H. Submit a written report in accordance with **Section 01 45 00** that equipment or system has been properly installed and is functioning correctly.

1.04 DEMONSTRATION AND INSTRUCTIONS

A. Demonstrate operation and maintenance of products to the Owner's personnel two weeks prior to date of final inspection.

B. Demonstrate Project equipment, instructed by qualified Contractor's representative who is knowledgeable about the Project.

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

D. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owners' personnel in detail to explain all aspects of operation and maintenance.

E. Demonstrate start-up, operation, control, adjustment, troubleshooting, servicing, maintenance and shutdown of each item of equipment at agreed-upon times, at equipment location.

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

G. The amount of time required for instruction on each item of equipment and system is that specified in individual Sections.

1.05 TESTING, ADJUSTING AND BALANCING

A. Contractor will appoint and employ services of an independent firm, acceptable to the Owner and Architect, to perform testing, adjusting and balancing. The contractor shall pay for these services.

B. The independent firm will perform services specified in **Division 23 Sections.**

C. Reports will be submitted by the independent firm to the Architect indicating observations and results of tests and indicating compliance or non-compliance with specified requirements and with the requirements of the Contract Documents.

D. All testing is to be provided by the Contractor and included in their base bid proposal.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION 01 75 00

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RHODE ISLAND DEPARTMENT OF ADMINISTRATION
SHEPARD BLDG – 4TH FLOOR RENOVATION
Providence, Rhode Island AA 25175

SECTION 01 78 00
CLOSEOUT PROCEDURES AND SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Closeout Procedures.

B. Requirements.

C. Substantial Completion.

D. Final Review.

E. Additional Reviews.

F. Submittals.

G. Final Adjustment of Accounts.

H. Final Application for Payment.

I. Final Cleaning.

J. Adjusting.

K. Operation and Maintenance Data.

L. Warranties.

M. Spare Parts and Maintenance Materials.

1.02 RELATED SECTIONS

A. Section 01 78 39 – Project Record Documents.

1.03 REQUIREMENTS

A. Comply with requirements stated in conditions of the Contract and in specifications for administrative procedures in closing out the Work.

1.04 SUBSTANTIAL COMPLETION

A. When Contractor considers the work is Substantially Complete, he/she shall submit to the Architect:

1. A written notice that the Work or designated portion thereof, is Substantially Complete.
2. A list of items to be completed or corrected.

B. Within a reasonable time after receipt of such notice, Architect will review the Work to determine the status of completion.

C. Should Architect determine that the Work is not Substantially Complete:

1. Architect will promptly notify the Contractor in writing, giving the reasons therefor.
2. The contractor shall remedy the deficiencies in the work and send out another written notice of substantial completion to the Architect.
3. The architect will again review the work.

D. When Architect concurs that the Work is Substantially Complete, he will:

1. Prepare a Certificate of Substantial Completion, accompanied by Contractor's list of items to be completed or corrected, as verified and amended by the Architect.
2. Submit the certificate to Owner, Contractor and manufacturer for their written acceptance of the responsibilities assigned to them in the certificate.

1.05 FINAL REVIEW

A. When Contractor considers the Work is complete, he shall submit written certification that:

1. Contract documents have been reviewed.
2. Work has been inspected for compliance with Contract Documents.
3. Work has been completed in accordance with Contract Documents.
4. Equipment and systems have been tested in the presence of the Owner's representative and are operational.
5. Work is completed and ready for final review.

B. Architect will make final review to verify the status of completion with reasonable promptness after receipt of such certification.

C. Should Architect consider that the Work is incomplete or defective:

1. The Architect will promptly notify the Contractor in writing, listing the incomplete or defective work.
2. The contractor shall take immediate steps to remedy the stated deficiencies and send out another written certification to Architect that the work is complete.
3. The Architect will again review the Work.
4. Should Architect consider that the Work is still incomplete or defective, all subsequent reviews shall be considered as Additional Reviews, subject to the provisions **listed in 1.06 below.**

D. When the Architect finds that the Work is acceptable under the Contract Documents and that all Punch List items have been accomplished to his satisfaction, he shall request the Contractor to make closeout submittals.

1.06 CONTRACTOR'S CLOSEOUT SUBMITTALS TO ARCHITECT

A. OPERATING AND MAINTENANCE DATA: Submit documentation as **described in 1.12 below**.

B. WARRANTIES, GUARANTEES AND BONDS: Submit documentation as **described in 1.13 below**.

C. SPARE PARTS AND MAINTENANCE MATERIALS FOR OWNER: Submit documentation as **described in 1.14 below.**

D. Contractor's affidavit of payment of debts and claims.

E. Contractor’s affidavit of release of liens.

F. Consent of surety to final payment.

G. Certificate of insurance for products and completed operations.

H. PROJECT RECORD DRAWINGS: Submit documentation as **described in Section 01 78 39.**

1.07 FINAL ADJUSTMENT OF ACCOUNTS

A. Submit a final statement of accounting to Architect.

B. Statement shall reflect all adjustments to the Contract Sum:

1. The original Contract Sum.
2. Additions and deductions resulting from:
   a. Previous Change Orders, allowances and unit prices.
   b. Deductions for uncorrected work, liquidated damages and re-inspection payments.
   c. Other adjustments.
3. Total Contract Sum, as adjusted.
4. Previous payments.
5. Sum remaining due.

C. Architect will prepare a final change order reflecting approved adjustments to the Contract sum that were not previously made by Change Orders.

1.08 FINAL APPLICATION FOR PAYMENT

A. The contractor shall submit the final application for payment in accordance with procedures and requirements stated in the General Conditions.

1.09 FINAL CLEANING

A. Execute final cleaning prior to final inspection.

B. Clean interior surfaces exposed to view; remove temporary labels, stains and foreign substances, vacuum resilient, carpeted and soft surfaces.

C. Clean equipment and fixtures to a sanitary condition.

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

1.10 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

1.11 OPERATION AND MAINTENANCE DATA

A. Submit one copy of completed volumes in final form 5 days prior to final inspection. This copy will be returned with Architect/Engineer comments. Revise content of documents as required prior to final submittal.

B. Submit Operation and Maintenance Data; Three (3) bound and three (3) electronic copies. Bound copies in 8-1/2 x 11-inch text pages, three D side-ring capacity expansion binders with durable plastic covers. Prepare binder covers and electronic copies with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project and 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. CONTENTS: Prepare a Table of Contents for each volume, with each Product or system description identified, type on 24-pound white paper.

E. PART 1: Directory, listing names, addresses and telephone numbers of Architect, Engineers, Contractor, Subcontractors and major equipment suppliers.

F. PART 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses and telephone numbers of Subcontractors and suppliers. Identify the following:

1. Significant design criteria.
2. List of equipment.
3. Parts list for each component.
4. Operating instructions.
5. Maintenance instructions for equipment and systems.
6. Maintenance instructions for all finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.

G. PART 3: Project documents and certificates, including the following:

1. Shop drawings and product data.
2. Certificates.
3. Photocopies of warranties and bonds.
4. Photocopies of certified payrolls.
5. Photocopies of the Daily Reports per RIDOL.

I. Submit final volumes revised, within ten days after final inspection.

1.12 WARRANTIES

A. Provide duplicate notarized copies.

1. In addition to the Warranty and Guarantee Requirements of the General Conditions, provide all other guarantees, bonds, affidavits and certifications required throughout the Project Manual.

B. Execute and assemble documents from Subcontractors, suppliers and manufacturers.

C. Provide Table of Contents and assemble in three D side-ring binder with durable plastic cover.

D. Submit prior to final Application for Payment.

E. For items of Work delayed beyond the date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.13 SPARE PARTS AND MAINTENANCE MATERIALS

A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification Sections.

B. Deliver to Project site and place in location as directed by the Owner; obtain receipt prior to final payment.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION 01 78 00

AHARONIAN & ASSOCIATES INC. - ARCHITECTS

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RHODE ISLAND DEPARTMENT OF ADMINISTRATION
SHEPARD BLDG – 4TH FLOOR RENOVATION
Providence, Rhode Island AA 25175

SECTION 01 78 39
PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project Record Documents required for Contract closeout.

1.02 RELATED SECTIONS

A. **Section 01 78 00** – Closeout Procedures and Submittals.

1.03 REQUIREMENTS

A. Maintain at the site for the Owner one record copy of:

1. Drawings
2. Specifications
3. Addenda
4. Change Orders and other modifications to the Contract
5. Architect field orders or written instructions
6. Reviewed shop drawings, product data and samples

1.04 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Store documents and samples in Contractor's field office apart from documents used for construction.

B. Provide a locked file cabinet for storage of documents and samples.

C. File documents and samples in accordance with CSI/CSC format.

D. Maintain documents in a clean, dry, legible condition and in good order. Do not use Record Documents for construction purposes.

E. Make documents and samples available at all times for inspection by Architect and Owner.

1.05 MARKING DEVICES

A. Provide felt tip marking pens for recording information in the color code designated by Architect.

1.06 RECORDING

A. Label each document "Project Record" in neat large printed letters.

B. Record information concurrently with construction progress.

C. Do not conceal any work until the required information is recorded.

D. DRAWINGS: Principal dimensions, elevations and other data as required shall be recorded for all work, such as:

1. Deviations of any nature made during construction.
2. Location of underground utilities.
3. Field changes of dimension and detail.
4. Changes made by field order or by Change Order.
5. Details not on original Contract Drawings.

E. The marked-up prints shall be inspected weekly by the Architect and shall be corrected immediately if found either inaccurate or incomplete.

F. SPECIFICATIONS AND ADDENDA: Legibly mark each Section to record:

1. Manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.
2. Changes made by field order or by Change Order.

1.07 FINAL MEASUREMENTS

A. The Contractor shall provide qualified personnel and equipment for taking final measurements for quantities and Record Documents.

1.08 RECORD DRAWINGS

A. Submit documents to Architect with claim for final Application for Payment for review & comment.

1. Submit two (2) electronic copies and three (3) binders with the photocopies of all documents.

B. The Contractor shall correct, amplify and do all other work as may be required by the Architect to complete the drawings in a manner satisfactory to the Architect and at no additional cost to the Owner.

C. Upon approval, the Contractor shall provide a final Record Drawing set, two electronic copies and one print copy (electronic format (PDF, heavyweight bond). The bond and electronic version shall be submitted to the Owner by the Architect.

D. It shall be marked to include all changes, RFI responses, addendums, clarifications, etc.

1.09 SUBMITTAL

A. At Contract close-out, deliver Record Documents to Architect for the Owner.

B. Accompany submittal with transmittal letter in duplicate, containing:

1. Date.
2. Project title and number.
3. Contractor's name and address.
4. Title and number of each record document.
5. Signature of Contractor or his authorized representative.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION 01 78 39

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RHODE ISLAND DEPARTMENT OF ADMINISTRATION
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SECTION 02 41 13
SELECTIVE DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Demolition and removal of selected portions of site elements.

B. Patching and repairs.

1.02 RELATED SECTIONS

A. Section 01 10 00 – Summary of Work: Use of the building.

1.03 DEFINITIONS

A. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged or to remain the Owner's property.

B. Remove and Salvage: Items indicated to be removed and salvaged remain the Owner's property. Remove, clean and pack or crate items to protect against damage. Identify contents of containers and deliver them to Owner's designated storage area.

C. Remove and Reinstall: Remove items indicated; clean, service and otherwise prepare them for reuse; store and protect against damage. Reinstall items in the same locations or in locations indicated.

D. Existing to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Architect, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations.

1.04 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain the owner's property, demolished materials shall become the contractor's property and shall be removed from the site with further disposition at the contractor's option.

1.05 QUALITY ASSURANCE

A. REGULATORY REQUIREMENTS: comply with governing EPA notification regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Pre-demolition conference: conduct conference at project site to comply with preinstallation conference requirements of section 01 31 19 - project meetings.

1.06 PROJECT CONDITIONS

A. The owner will occupy the entire building immediately under and adjacent to the selective demolition area. Conduct selective demolition so that Owner's operations will not be disrupted. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

B. Owner assumes no responsibility for actual condition of building elements to be selectively demolished.

C. Storage or sale of removed items or materials on-site will not be permitted.

1.07 SCHEDULING

A. Arrange selective demolition schedule so as not to interfere with Owner's on-site operations.

1.08 WARRANTY

A. Existing Special Warranty: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 PRODUCTS

2.01 REPAIR MATERIALS

A. Use repair materials identical to existing materials.

1. Where identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
2. Use materials whose installed performance equals or surpasses that of existing materials.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

D. When unanticipated mechanical, electrical, or structural elements that conflict with the intended function or design are encountered, investigate, and measure the nature and extent of the conflict. Promptly submit a written report to the Architect.

E. Survey the condition of the building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during selective demolition.

F. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.02 UTILITY SERVICES

A. Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Do not interrupt existing utilities serving occupied or operating facilities, except when authorized in writing by Owner and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and to governing authorities.
    a. Provide not less than 72 hours' notice to Owner if shutdown of service is required during changeover.

3.03 PREPARATION

A. Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with selective demolition operations.

B. Employ a certified, licensed exterminator to treat building and to control rodents and vermin before and during selective demolition operations.

C. Conduct demolition operations and remove debris to ensure minimum interference with roads, streets, walks and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

D. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around selective demolition area.

1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
2. Protect existing site improvements, appurtenances, and landscaping to remain.
3. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
4. Provide temporary weather protection, during interval between demolition and removal of existing construction, on exterior surfaces and new construction to ensure that no water leakage or damage occurs to structure or interior areas.
5. Protect walls, ceilings, floors, and other existing finish work that are to remain and are exposed during selective demolition operations.
6. Cover and protect furniture, furnishings and equipment that have not been removed.

E. Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.

1. Construct dustproof partitions of not less than nominal 4-inch studs, 5/8-inch gypsum wallboard with joints taped on occupied side, and 1/2-inch fire-retardant plywood on the demolition side.
2. Insulate partition to provide noise protection to occupied areas.
3. Seal joints and perimeter.
4. Equip partitions with dustproof doors and security locks.
5. Protect air-handling equipment.
6. Weatherstrip openings.

F. Provide and maintain interior and exterior shoring, bracing or structural support to preserve stability and prevent movement, settlement or collapse of building to be selectively demolished.

1. Strengthen or add new support when required during the progress of selective demolition.

3.04 POLLUTION CONTROLS

A. Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations.

1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

B. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

1. Remove debris from elevated portions of buildings by chute, hoist or other device that will convey debris to grade level.

C. Clean adjacent structures and improvements of dust, dirt and debris caused by selective demolition operations. Return adjacent areas to the condition existing before start of selective demolition.

3.05 SELECTIVE DEMOLITION

A. Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition work above each floor or tier before disturbing supporting members on lower levels.
2. Neatly cut openings and holes plumb, square and true to dimensions required. Use cutting methods is least likely to damage construction to remain or adjoining construction. To minimize disturbance of adjacent surfaces, use hand or small power tools designed for sawing or grinding, not hammering, and chopping. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until the work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
5. Maintain adequate ventilation when using cutting torches.
6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
7. Remove structural framing members and lower them to the ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment throughout the structure and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly. On-site storage or sale of removed items is prohibited.
10. Return elements of construction and surfaces to remain to condition existing before start of selective demolition operations.

B. Demolish concrete and masonry in small sections. Cut concrete and masonry at junctures with construction to remain, using power-driven masonry saw or hand tools; do not use power-driven impact tools.

C. Break up and remove concrete slabs on grade, unless otherwise shown to remain.

D. Remove no more existing roofing than can be covered in one day by new roofing.

E. Remove air-conditioning equipment without releasing refrigerants.

3.06 PATCHING AND REPAIRS

A. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by selective demolition operations.

B. Patching is specified in Section 01 73 29 Cutting and Patching.

C. Where repairs to existing surfaces are required, patch to prepare surfaces suitable for new materials.
1. Completely fill holes and depressions in existing masonry walls to remain with an approved masonry patching material, applied according to manufacturer's printed recommendations.

D. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction to remain in a manner that eliminates evidence of patching and refinishing.

E. Patch and repair floor and wall surfaces in the new space where demolished walls or partitions extend one finished area into another. Provide a flush and even surface of uniform color and appearance.

1. Closely match texture and finish of existing adjacent surface.

2. Patch with durable seams that are as invisible as possible. Comply with specified tolerances.

3. When patching smooth painted surfaces, extend the final paint coat over entire unbroken surface containing the patch after the surface has received primer and second coat.

4. Inspect and test patched areas to demonstrate integrity of the installation, where feasible.

F. Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

3.07 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.08 CLEANING

A. Sweep the building broom clean on completion of selective demolition operation.

B. Change filters on air-handling equipment on completion of selective demolition operations.

END OF SECTION 02 41 13

RHODE ISLAND DEPARTMENT OF ADMINISTRATION
SHEPARD BLDG – 4TH FLOOR RENOVATION
Providence, Rhode Island AA 25175

SECTION 07 92 00
JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preparing sealant substrate surfaces.

B. Sealant and backing.

1.02 RELATED SECTION

A. Section 08 11 13 - Hollow Metal Doors & Frames.

1.03 REFERENCES

A. ANSI/ASTM D1056 - Flexible Cellular Materials - Sponge or Expanded Rubber.

B. ANSI/ASTM D1565 - Flexible Cellular Materials - Vinyl Chloride Polymers and Copolymers (Open-Cell Foam).

C. ASTM C790 - Use of Latex Sealing Compounds.

D. ASTM C834 - Latex Sealing Compounds.

E. FS TT-S-00227 - Sealing Compound: Elastomeric Type, Multi-Component.

F. SWI (Sealing and Waterproofers Institute) - Sealant and Caulking Guide Specification.

1.04 SUBMITTALS

A. Submit product data under the provisions of the Contract and Specification Sections.

B. Submit product data indicating sealant chemical characteristics, performance criteria, limitations, color, and availability.

C. Submit samples under the provisions of the Contract and Specification Sections.

D. Submit two samples 1/2 x 1/2 inches in size illustrating colors selected.

E. Submit manufacturer's installation instructions under the provisions of the Contract and Specification Sections.

1.05 QUALITY ASSURANCE

A. MANUFACTURER: Company specializing in manufacturing the products specified in this Section with a minimum of ten years' documented experience.

B. APPLICATOR: Company specializing in performing the work of this Section with a minimum of ten years' documented experience.

C. Conform to Sealant and Waterproofers Institute requirements for materials and installation.

1.06 ENVIRONMENTAL REQUIREMENTS

A. Do not install solvent curing sealants in enclosed building specs.

B. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.07 SEQUENCING AND SCHEDULING

A. Coordinate work under provisions of the Contract and Specification Sections.

B. Coordinate the work of this Section with all Sections referencing this Section.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. SUBSTITUTIONS: Under provisions of **Section 01 60 00**.

2.02 SEALANT

B. TYPE 1: Tremco Tremflex 834 Siliconized Acrylic Latex Sealant

1. General purpose, interior, one-part, paintable, pure acrylic latex sealant.
2. Conforms to ASTM C834.
3. +/- 12 1/2% joint movement capability.
4. Acceptable for use where an acoustic sealant is required.

2.03 ACCESSORIES

A. PRIMER: Non-staining type, recommended by sealant manufacturer to suit application.

B. JOINT CLEANER: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. JOINT BACKING: ANSI/ASTM D1056; round, closed cell polyethylene foam rod; oversized 30 to 50 percent larger than joint width, No. 92 Green Rod Closed Cell Polyurethane manufactured by Pecora Corporation.

D. BOND BREAKER: Pressure sensitive tape recommended by sealant manufacturer to suit application.

2.04 COLORS

A. Colors to be selected by Architect from sealant manufacturer's standard range.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive Work and are as shown on Drawings and as recommended by sealant manufacturer.

B. Beginning of installation means the installer accepts existing substrate.

3.02 PREPARATION

A. Thoroughly clean joints in accordance with manufacturer's instructions. Remove loose materials and foreign matter which might impair adhesion of sealant.

B. Verify that joint backing and release tapes are compatible with sealant.

C. Protect elements surrounding the work of this Section from damage or disfiguration. Apply masking tape to each exposed surface of joints.

3.03 INSTALLATION

A. Install sealants in strict accordance with manufacturer's instructions; ASTM C804 for solvent release sealants and ASTM C790 for latex base sealants.

B. Measure joint dimensions and size materials to achieve a 2 to 1width/depth ratio. Sealant depth shall not be more than 3/4 inch and not less than 3/8 inch.

C. Joints more than 3/4 inch in depth that have no means of providing a backup for sealant, shall receive joint backing material. Place backing material in joints taking care to maintain a constant depth 1/8 inch greater than the sealant depth tolerances specified.

1. Install joint backing to achieve a neck dimension no greater than 1/3 the joint width.
2. Do not stretch backing into joints. Backing shall be continuous, no voids allowed.

D. Install bond breakers where joint backing is not used.

E. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

1. Apply sealants using a hand caulking gun or power gun with a nozzle of proper size and sufficient power to completely fill joints.

F. **Install sealant in neat manner in true lines free of air pockets, foreign embedded matter, ridges or sags.**

G. Tool joints with a dry or water wet tool only. Do not use detergents or soapy water for tooling operations. **Tool joints slightly concave, creating an hourglass sealant profile within the joint.**

1. **Fillet beads are not acceptable unless approved by the Architect or shown as such on the Drawings. Sealant shall not lap over the face of adjacent work being sealed.**

H. Remove masking tape immediately after tooling or before the sealant has taken initial set.

3.04 CLEANING AND REPAIRING

A. Clean work under provisions of the Contract and Specification Sections.

B. Clean adjacent soiled surfaces.

C. Repair or replace defaced or disfigured finishes caused by work of this Section.

3.05 PROTECTION OF FINISHED WORK

A. Protect finished installation under the provisions of the Contract and Specification Sections.

B. Protect sealants until cured.

3.06 SEALANT SCHEDULE

TYPE 1: All interior conditions unless noted otherwise

END OF SECTION 07 92 00

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RHODE ISLAND DEPARTMENT OF ADMINISTRATION
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SECTION 08 11 13
HOLLOW METAL FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Non-rated and rated rolled steel frames.

1.02 RELATED SECTIONS

A. Section 07 92 00 - Joint Sealants.

B. Section 08 71 00 - Door Hardware.

1.03 REFERENCES

A. ASTM A 366/A 366M - Standard Specification for Steel, Sheet, Carbon, Cold-Rolled, Commercial Quality.

B. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

C. ASTM A 924/A 924M - Standard Specification for General Requirements for Sheet Steel, Metallic-Coated by the Hot-Dip Process.

D. ANSI A250.3 - Test Procedure and Acceptance Criteria for Factory-Applied Finish Painted Steel Surfaces for Steel Doors and Frames.

E. ANSI A250.6 - Hardware on Standard Steel Doors (Reinforcement-Application).

F. ANSI A250.7 - Nomenclature for Standard Steel Doors and Steel Frames.

G. ANSI A250.8 - Recommended Specifications for Standard Steel Doors & Frames.

H. ANSI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.

I. ANSI/DHI A115.IG - Installation Guide for Doors and Hardware.

J. NFPA 80 - Standard for Fire Doors and Windows.

K. SDI-105 - Recommended Erection Instructions for Steel Frames; Steel Door Institute.

L. SDI-117 - Manufacturing Tolerances for Standard Steel Doors and Frames; Steel Door Institute.

M. SDI-124 - Maintenance of Hollow Metal Doors and Frames; Steel Door Institute.

N. UL 10B - Standard for Fire Tests of Door Assemblies; Underwriters Laboratories Inc.

O. WHI - Intertek Testing Services 1nc. /Warnock Hersey International Inc.

1.04 QUALITY ASSURANCE

A. Conform to requirements of SDI-100.

1.05 SUBMITTALS

A. Submit shop drawings and product data under the provisions of the Contract and Specification Sections.

B. Indicate frame configuration, anchor types and spacing, location of cutouts for hardware, reinforcement, and finish.

C. Submit manufacturer's installation instructions under the provisions of the Contract and Specification Sections.

1.06 DELIVERY, STORAGE AND HANDLING

A. Protect products under the provisions of the Contract and Specification Sections.

B. Protect frames 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. Ceco Corporation.

C. Amweld.

D. SUBSTITUTIONS: Under the provisions of the Contract and Specification Sections.

2.02 MATERIALS

A. COLD-ROLLED STEEL; ASTM A366 or ASTM A568, commercial quality carbon steel.

B. ANCHORS AND FASTENERS; Manufacturer’s standard units fabricated from not less than 18-gauge galvanized sheet steel or 18 gauge hot-dip galvanized steel complying with ASTM A153, Class C or D

C. PRIMER: Thermosetting primer which is compatible with the finish system.

2.03 FRAMES

A. INTERIOR FRAMES: 18 gage thick material, core thickness; welded construction.

2.04 ACCESSORIES

A. Prep door frames for electric strikes as noted within the hardware schedule.

2.05 PROTECTIVE COATINGS

A. BITUMINOUS COATING: Fibered asphalt emulsion.

B. PRIMER: Zinc chromate type.

2.06 FABRICATION

A. Fabricate frames as welded units at exterior and interior locations.

B. Fabricate frames with hardware reinforcement plates welded in place. Provide mortar guard boxes.

C. Reinforce frames wider than 48 inches with roll formed steel channels fitted tightly into frame head, flush with top.

D. Prepare frame for silencers. Provide three single rubber silencers for single doors [and mullions of double doors] on strike side, and two single silencers on frame head at double doors without mullions.

E. Attach fire rated label to each frame unit.

F. Seal joints watertight.

G. Fabricate frames for masonry wall coursing with 4-inch head members.

2.07 FINISH

A. INTERIOR UNITS: A60 galvanized at wet locations only.

B. PRIMER: Manufacturer's standard baked on type.

C. FINISH: Field finish in accordance with Section 09 91 00; Color as selected by Architect.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install frames in accordance with SDI-105.

B. Coordinate with masonry and gypsum board systems wall construction for anchor placement.

C. Coordinate installation of glass and glazing.

D. Install roll formed steel reinforcement channels between two abutting frames. Anchor to structure and floor.

3.02 TOLERANCES

A. MAXIMUM DIAGONAL DISTORTION: 1/16 inch measured with straight edge, corner to corner.

3.03 ADJUSTING AND CLEANING

A. Adjust hardware for smooth and balanced door movement.

END OF SECTION 08 11 13

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RHODE ISLAND DEPARTMENT OF ADMINISTRATION
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SECTION 08 14 16
FLUSH WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Interior Flush Wood Veneer Doors:

1. Five-ply flush bonded doors.
2. Sound-retardant doors.

1.02 RELATED SECTIONS

A. Section 08 12 13 – Hollow Metal Frames.

B. Section 08 71 00 - Door Hardware.

C. Section 09 91 00 - Painting.

1.03 REFERENCES

A. ANSI A208.1 – Particleboard.

B. ASTM E 90 – Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

C. ASTM E 413 – Classification for Rating Sound Insulation.

D. AWI/AWMAC/WI Architectural Woodwork Standards, Edition 1, Section 9 – Doors.

H. WDMA I.S. 1A-11 – Architectural Wood Flush Doors.

1.04 SUBMITTALS

A. Submit simultaneously with submittals from **Sections 08 12 13 and 08 71 00**.

B. Submit shop drawings and product data under provisions of **Section 01 33 00**.

C. Indicate door elevations, stile and rail reinforcement, internal blocking for hardware attachment and cutouts for glazing.

D. Schedules: Submit manufacturer's schedules, including door dimensions, cutouts, species, finish, and hardware. Reference individual door numbers as indicated on the Drawings.

E. Submit samples under provisions of **Section 01 33 00**.

F. Submit two samples 2-1/2 x 2-1/2 inch in size illustrating construction and veneer.

G. Test Reports: Submit manufacturer's test results of STC ratings from testing performed by independent testing agency for sound-retardant doors.

H. Manufacturer's Certification: Submit manufacturer's certification that doors comply with specified requirements and are suitable for intended application.

I. Cleaning Instructions: Submit manufacturer's cleaning instructions for doors.

J. Warranty: Submit manufacturer's standard warranty.

1.05 QUALITY ASSURANCE

A. Tolerances for Warp, Telegraphing, Squareness, and Prefitting Dimensions: WDMA I.S.1-A.

B. Identifying Label: Each door shall bear identifying label indicating:

1. Door manufacturer.
2. Order number.
3. Door number.

1.06 REGULATORY REQUIREMENTS

A. Conform to applicable building and codes for fire rated doors and panels.

1.07 DELIVERY, STORAGE AND HANDLING

A. Delivery:

1. Deliver doors to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
2. Package doors individually in polybags.

B. Storage:

1. Store doors in accordance with manufacturer's instructions.
2. Store doors in clean, dry areas indoors, protected from damage and direct sunlight.
3. Store doors flat on level surface.
4. Do not store doors directly on concrete.
5. Keep doors completely covered. Use covering which allows air circulation and does not permit light to penetrate.
6. Store doors between 50- and 90-degrees F and 25 to 55 percent relative humidity.

C. Handling:

1. Handle doors in accordance with manufacturer's instructions.
2. Protect doors and finish during handling and installation to prevent damage.
3. Handle doors with clean hands or clean gloves.
4. Lift and carry doors. Do not drag doors across other doors or surfaces.

1.08 ENVIRONMENTAL REQUIREMENTS

A. Do not subject doors to extreme conditions or changes in temperature or relative humidity in accordance with WDMA I.S.1-A.

1.09 WARRANTY

A. Warrant solid core, interior doors for life of installation against warpage, delamination, and defects in materials and workmanship.

B. Defects noted during warranty period shall be corrected at no cost to Owner. Corrective work shall include labor and material for repair, replacement, refinishing, and rehanging as required.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Eggers / VT Industries

B. Fenestra Corporation.

C. Marshfield Door Systems, Inc.

2.02 DOOR TYPE

A. SOUND-RETARDANT DOORS

1. Model: sound attenuation core, SR-5 and SR-20-5, non-rated and 20-minute rated, stained stiles.
2. Compliance: WDMA I.S.1-A.
    a. Quality Grade: Custom.
2. Testing Methods: ASTM E 90 and E 413.
3. Door Thickness: 1-3/4 inches.
5. STC Rating: 46.
6. Core: Sound absorbent material encapsulated by stiles, rails, crossbands, and face veneers.
7. Perimeter Gasketing and Drop Seals: To achieve STC ratings.
8. Face Veneers and Vertical Stile Edges: Matching.
    a. Species: Match existing doors
    b. Cut: Match existing doors
    c. Assembly: Match existing doors
    d. Minimum Thickness Before Sanding: 1/42 inch.

2.03 FABRICATION

A. Pre-fit Doors:
1. Pre-fit and bevel doors at factory to fit openings.
2. Pre-fit Tolerances: WDMA I.S.1-A and AWS Section 9.

B. Factory machine doors for mortised hardware, including pilot holes for hinge screws and lock fronts required.

2.05 FINISH

A. Doors shall be primed to receive field paint to match 4th floor existing standard color.

B. Color: Match existing.

C. Top and Bottom Rails: Factory sealed.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine locations to receive doors. Notify Architect of conditions that would adversely affect installation or subsequent use. Do not begin installation until unacceptable conditions are corrected.

B. Ensure frames are solidly anchored, allowing no deflection when doors are installed.

C. Ensure frames are plumb, level, square, and within tolerance.

3.02 PREPARATION

A. Allow doors to become acclimated to building temperature and relative humidity for a minimum of 24 hours before installation.

3.03 INSTALLATION

A. Install doors in accordance with manufacturer's instructions.

B. Install doors at locations indicated on the Door Schedule – Drawings A1.1.

C. Install doors plumb, level, and square.

D. Install door hardware as specified in Section 08 71 00.

3.04 ADJUSTING

A. Adjust doors to swing freely, without binding in frame.

B. Adjust hardware to operate properly.

C. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.

D. Remove and replace damaged doors that cannot be successfully repaired, as determined by Architect.

3.05 CLEANING

A. Clean doors promptly after installation in accordance with manufacturer's instructions.

B. Do not use harsh cleaning materials or methods that could damage the finish.

3.06 PROTECTION

A. Protect installed doors from damage during construction.

END OF SECTION 08 14 16

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SECTION 08 71 00
DOOR HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Hardware for doors.

B. Thresholds and gasketing.

1.02 PRODUCTS FURNISHED BUT INSTALLED UNDER OTHER SECTIONS

A. Furnish templates to Section 08 11 13 for door and frame preparation.

1.03 RELATED SECTIONS

A. Section 08 11 13 – Hollow Metal Frames.

B. Section 08 14 16 - Flush Wood Doors

1.04 REFERENCES

A. Rhode Island State Building Code.

B. BHMA - Builder's Hardware Manufacturers Association.

C. DHI - Door and Hardware Institute.

D. NAAM - National Association of Architectural Metal Manufacturers.

E. NFPA 101 - Life Safety Code.

F. ANSI A117.1 (1998) - Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People.

G. AWI - Architectural Woodwork Institute.

1.05 COORDINATION

A. Coordinate the work of this Section with other directly affected Sections involving manufacturers of any internal reinforcement for door hardware.

1.06 QUALITY ASSURANCE

A. MANUFACTURERS: Companies specializing in manufacturing door hardware with a minimum of ten years' documented experience.

B. HARDWARE SUPPLIER: Company specializing in supplying commercial institutional door hardware with ten years' documented experience.

C. HARDWARE SUPPLIER PERSONNEL: Employ an Architectural Hardware Consultant (AHC) to assist in the work of this Section; paid directly by General Contractor.

1.07 CERTIFICATIONS

A. Architectural Hardware Consultant shall inspect complete installation and certify that hardware, and installation has been furnished and installed in accordance with manufacturer's instructions.

B. Provide two copies of certifications to Architect.

1.08 REGULATORY REQUIREMENTS

A. Conform to the applicable sections of Chapter 5 of NFPA 101 and Rhode Island State Building Code.

1.09 SUBMITTALS

A. Submit simultaneously with submittal from Sections 08 11 13.

B. Submit schedule, shop drawings and product data under the provisions of the Contract and Specification Sections.

C. Indicate locations and mounting heights of each type of hardware.

D. Provide product data on specified hardware.

E. Submit manufacturer's parts lists, templates, and installation instructions under the provisions of the Contract and Specification Sections.

1.10 OPERATION AND MAINTENANCE DATA

A. Submit operation and maintenance data under the provisions of the Contract and Specification Sections.

B. Include data on the operation of hardware, lubrication requirements and inspection procedures related to preventative maintenance.

1.11 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site under the provisions of the Contract and Specification Sections.

B. Store and protect products under the provisions of the Contract and Specification Sections.

C. Package hardware items individually. Label and identify package with door opening code to match hardware schedule.

D. Deliver keys to Owner by security shipment direct from hardware supplier.

E. Protect hardware from theft by cataloging and storing it in a secure area.

1.12 WARRANTY

A. Provide Manufacturer's Standard warranty under the provisions of the Contract and Specification Sections.

1.13 MAINTENANCE MATERIALS

A. Provide special wrenches and tools applicable to each different or special hardware component.

B. Provide maintenance tools and accessories supplied by hardware component manufacturers.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. BUTTS (Heavy Duty Ball Bearing)

1. Hager Hinge Company.
2. Stanley Hardware.
3. Yale Locks & Hardware.
4. McKinney.

B. CYLINDRICAL LEVER LOCKSETS (Grade 1 quality)

1. Sargent Manufacturing Co.
2. Schlage Lock Co.
3. Yale Locks & Hardware.
4. Medeco.

C. CLOSERS

1. LCN Closers.

D. PUSH/PULL, PROTECTION PLATES AND WALL BUMPERS

1. Rockwood.
2. H B Ives.

E. THRESHOLDS AND GASKETING (Silicone type)

1. Pemko.
2. Reese Enterprises, Inc.
3. Zero International, Inc.

F. ELECTRIC STRIKES

1 HES 5300 or 9800 series

2 Von Duprin

G. SUBSTITUTIONS: Under the provisions of the Contract and Specification Sections.

2.02 BUTTS

A. Full Mortise; 4-1/2 x 4-1/2; heavy duty ball bearing; 5 knuckles; square corners; non-removable pinsat exterior locations and as noted.

2.03 LOCKSETS / DEADBOLTS

B. LOCKSETS: Schlage ND Series; Handicapped accessible type; Spartan lever style.

C. DEADBOLTS: Medeco3 Maxum.

2.04 CLOSERS DEVICES

A. Non-handed; delay action; variable backcheck: LCN 4040 Series.

B. Electric hold-open type: LCN 4040 Series.

2.05 KEYING AND CORES

A. Provide construction cylinders and keys during construction period only.

B. DOOR LOCKS: Keyed as directed by Owner.

C. Supply 4 keys for each lock.

D. Detailed keying to be determined in consultation with the Architect and Owner.

2.06 FINISHES

A. FINISHES: To match 4th floor existing hardware finish.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that doors and frames are ready to receive work and dimensions are as indicated on shop drawings.

B. Verify that power supply is available to power operated devices.

C. Beginning of installation means acceptance of existing conditions.

3.02 INSTALLATION

A. Install hardware in accordance with manufacturer's instructions and requirements of SDI, ANSI/NFPA 80, BHMA, DHI, NAMM and AWI.

B. Use the templates provided by hardware item manufacturers.

C. Conform to ANSI A117.1 for positioning requirements for the handicapped.

3.03 SCHEDULE

A. Each door shall receive the hardware as noted on Drawings, as herein specified, or as required by applicable codes.

END OF SECTION 08 71 00

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SECTION 09 21 16
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Cold-rolled metal framing.

B. Acoustic insulation and sealant.

C. Gypsum board and cement board.

D. Taped and sanded joint treatment.

1.02 RELATED SECTIONS

A. Section 09 91 00 - Painting.

1.03 REFERENCES

A. ANSI/ASTM C36 - Gypsum Wallboard.

B. ANSI/ASTM C79 - Gypsum Sheathing Board

C. ANSI/ASTM C442 - Gypsum Backing Board.

D. ANSI/ASTM C475 - Joint Treatment Materials for Gypsum Wallboard Construction.

E. ANSI/ASTM C630 - Water Resistant Gypsum Backing Board.

F. ANSI/ASTM C645 - Non-Load (Axial) Bearing Steel Studs, Runners (Track), and Rigid Furring Channels for Screw Application of Gypsum Board.

G. ANSI/ASTM C557 - Adhesive for Fastening Gypsum Wallboard to Wood Framing.

H. ANSI/ASTM C646 - Steel Drill Screws for the Application of Gypsum Sheet Material to Light Gage Steel Studs.

I. ANSI/ASTM C754 - Installation of Framing Members to Receive Screw Attached Gypsum Wallboard, Backing Board, or Water-Resistant Backing Board.

J. GA-201 - Gypsum Board for Walls and Ceilings.

K. GA-21 - Recommended Specifications for Levels of Gypsum Board Finish.

L. GA-216 - Recommended Specifications for the Application and Finishing of Gypsum Board.

M. ANSI/ASTM C645 - Non-Load (Axial) Bearing Steel Studs, Runners (Track), and Rigid Furring Channels for Screw Application of Gypsum Board.

N. ANSI/ASTM E90 - Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.

O. ANSI/ASTM E119 - Fire Tests of Building Construction and Materials.

P. ASTM C9977 – Gypsum Sheathing

Q. ASTM D3273 – Gypsum Sheathing

R. ASTM C79 – Gypsum Sheathing

S. ASTM C 36 – Impact Resistant Gypsum Board.

T. ASTM C 1396 – Impact Resistant Gypsum Board.

U. ANSI A108.11, American National Standard for Interior Installation of Cementitious Backer Units.

V. ASTM C 1325, Specification for Fiber-Mat Reinforced Non-Asbestos Cement Interior Substrate Sheets.

1.04 SUBMITTALS

A. Submit product data under provisions of Section 01 33 00.

B. Provide product data on metal framing, gypsum board, joint tape and edge trim.

1.05 SYSTEM DESCRIPTION

A. Conform to applicable building and fire codes for fire rated assemblies.

B. FIRE RATING REQUIREMENTS: As noted on Drawings, in accordance with UL or WHI listed assembly No’s.

1.06 QUALITY ASSURANCE

A. APPLICATOR: Company specializing in gypsum board systems, work with 5 years documented experience.

PART 2 PRODUCTS

2.01 MANUFACTURERS - GYPSUM BOARD SYSTEM

A. United States Gypsum Company.

B. National Gypsum Company.

C. Georgia-Pacific Corporation.

D. Certainteed Saint-Gobain

2.02 FRAMING MATERIALS

A. FRAMING AND TRACKS: ANSI/ASTM C645; galvanized sheet steel, 26 gage thick, 'C' shape, with serrated faces.

B. FURRING AND ACCESSORIES: ANSI/ASTM C645.

2.03 GYPSUM BOARD MATERIALS

A. STANDARD GYPSUM BOARD: ANSI/ASTM C36; 5/8-inch thick, maximum permissible length; ends square cut, tapered edges.

B. FIRE RATED GYPSUM BOARD: ANSI/ASTM C36; fire resistive type, UL rated; 5/8-inch thick, maximum permissible length; ends square cut, tapered edges.

C. MOISTURE RESISTANT GYPSUM BOARD: ANSI/ASTM C630; 5/8-inch thick, maximum permissible length; ends square cut, tapered edges.

D. NOISE-REDUCING GYPSUM BOARD: ASTM C1766; C1629; 5/8-inch thick, maximum permissible length; ends square cut, tapered edges.

E. GYPSUM BACKING BOARD: ANSI/ASTM C442; standard and fire rated type; 5/8 inch thick; square edges, ends square cut, maximum permissible length.

F. Gypsum Sheathing Board: Dens Glass Gold Exterior Guard by G-P Gypsum; ANSI/ASTM C79; moisture resistant and fire-resistant type, thickness as shown on Drawings; maximum permissible length, ends square cut, square edges; water resistant core, glass mat facings.

G. CEMENT BACKER BOARD: PermaBase Cement Board by National Gypsum Company.

1. Cementitious, water durable, board; surfaced with fiberglass reinforcing mesh on front and back; long edges wrapped.

2. Complying with ANSI A118.9 and ASTM C 1325.

3. Thickness as shown on Drawings; 4 ft. by 8 ft. sheets with tapered edges.

4. COMPRESSIVE STRENGTH: Not less than 2250 lbs. per sq. in. when tested in accordance with ASTM D 2394.

5. WATER ABSORPTION: Not greater than 8 percent when tested for 24 hours in accordance with ASTM C 473.

2.04 ACCESSORIES

A. ACOUSTICAL INSULATION BATTS: preformed fiberglass, friction fit type without integral vapor barrier membrane, thickness as indicated on Drawings.

B. ACOUSTICAL SEALANT: Non-hardening, non-skinning, for use in conjunction with gypsum board; USG Acoustical Sealant manufactured by United States Gypsum Company.

C. CORNER BEADS: Metal.

D. EDGE TRIM: GA 201 and GA 216; Type L and J exposed reveal bead as indicated.

E. JOINT MATERIALS: ANSI/ASTM C475; reinforcing tape, joint compound, adhesive, water, and fasteners.

F. FASTENERS: ANSI/ASTM C646.

G. ADHESIVE: ANSI/ASTM C557.

H. Provide all other miscellaneous metal framing and gypsum board components and accessory items as required to provide the wall systems as shown on the Drawings and as specified herein.

PART 3 EXECUTION

3.01 INSPECTION

A. Verify that site conditions are ready to receive work and opening dimensions are as indicated on shop Drawings.

B. Beginning of installation means acceptance of existing surfaces.

3.02 METAL STUD INSTALLATION

A. Install studs in accordance with ANSI/ASTM C754 and GA 201 and GA 216.

B. METAL FRAMING SPACING: 16 inches on center or as indicated on Drawings.

C. PARTITION HEIGHTS: Full height to floor or roof construction above unless noted otherwise on drawings.

D. Install additional bracing for partitions extending above ceiling.

E. DOOR OPENING FRAMING: Install double studs in door frame jambs. Install stud tracks on each side of opening, at frame head height and between studs and adjacent studs.

F. BLOCKING: Nail wood blocking to studs; bolt or screw steel channels to studs. Install blocking for support of plumbing fixtures, toilet partitions, wall cabinets, toilet accessories, hardware and shelves.

G. Coordinate installation of bucks, anchors, blocking, electrical and mechanical work placed in or behind partition framing.

3.03 WALL FURRING INSTALLATION

A. Erect wall furring for direct attachment to concrete and concrete block walls.

B. Erect furring channels vertically. Secure in place on alternate channel flanges at 16 inches on center or as noted on Drawings.

C. Space furring channels maximum 16 inches on center, or as indicated on Drawings, not more than 4 inches from floor and ceiling lines.

D. Install thermal insulation vertically and hold in place with Z-furring channels spaced maximum 24 inches on center, not more than 3 inches at external corners and 12 inches at internal corners.

E. Erect free-standing metal stud framing tight to concrete and concrete masonry walls, attached by adjustable furring brackets in accordance with manufacturer's instructions.

3.04 FURRING FOR FIRE RATINGS

A. Install furring as required for fire resistance ratings indicated.

3.05 CEILING FRAMING INSTALLATION

A. Install in accordance with ANSI/ASTM C754, GA 201, GA 216 and manufacturer's instructions.

B. Coordinate location of hangers with other work.

C. Install ceiling framing independent of walls, columns and above-ceiling work.

D. Reinforce openings in ceiling suspension system which interrupt main carrying channels or furring channels, with lateral channel bracing. Extend bracing minimum 24 inches past each end of openings.

E. Laterally brace entire suspension system.

3.06 ACOUSTICAL ACCESSORIES INSTALLATION

A. Place acoustic insulation in partitions tight within spaces, around cut openings, behind and around electrical and mechanical items within or behind partitions and tight to items passing through partitions.

3.07 GYPSUM BOARD INSTALLATION

A. Install gypsum board in accordance with GA 201 and GA 216.

B. Erect single layer standard gypsum board in most economical direction, with ends and edges occurring over firm bearing.

C. Erect single layer fire rated gypsum board vertically, with edges and ends occurring over firm bearing.

D. DOUBLE LAYER APPLICATIONS: Use fire rated gypsum backing board for first layer, placed perpendicular to framing or furring members. Place second layer of fire rated gypsum board perpendicular to first layer. Offset joints of second layer from joints of first layer.

E. Erect exterior gypsum sheathing horizontally, with edges butted tight and ends occurring over firm bearing.

F. Use screws when fastening gypsum board to metal furring or framing.

G. Use screws when fastening gypsum board to wood furring or framing.

H. Treat cut edges and holes in moisture resistant gypsum board and exterior gypsum ceiling board with sealant.

I. Place control joints consistent with lines of building spaces as indicated or as directed.

J. Place corner beads at external corners as indicated. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials or as indicated.

3.08 JOINT TREATMENT

A. Tape, fill and sand exposed joints, edges and corners to produce smooth surface ready to receive finishes.

B. Perform taping operation in accordance with manufacturer's instructions.

C. Feather coats onto adjoining surfaces so that camber is maximum 1/32 inch.

D. Taping, filling and sanding is not required at surfaces behind adhesive applied ceramic tile.

E. Provide Level [4] finish.

3.09 TOLERANCES

A. MAXIMUM VARIATION FROM TRUE FLATNESS: 1/8 inch in 10 feet in any direction.

END OF SECTION 09 21 16

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SECTION 09 51 00
ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general conditions of Contract, including General and Supplementary Conditions and Divisions-1 Specification sections apply to work of this section.

1.02 SUMMARY

A. Section Includes

1. Acoustic ceiling panels
2. Exposed grid suspension system
3. Wire hangers, fasteners, main runners, cross tees, and wall angle moldings
4. Perimeter Trim

B. Related Sections

1. Section 09 21 16 - Gypsum Board Assemblies
2. Division 26 - Electrical (see electrical drawings)

1.03 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM A 1008 Standard Specification for Steel, Sheet, Cold Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability
2. ASTM A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire
3. ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process
4. ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
5. ASTM C 635 Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings
6. ASTM C 636 Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels
7. ASTM D 3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber

8. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials
9. ASTM E 119 Standard Test Methods for Fire Tests of Building Construction and Material
    a. Armstrong Fire Guard Products
10. ASTM E 580 Installation of Metal Suspension Systems in Areas Requiring Moderate Seismic Restraint
11. ASTM E 1111 Standard Test Method for Measuring the Interzone Attenuation of Ceilings Systems
12. ASTM E 1414 Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum
13. ASTM E 1264 Classification for Acoustical Ceiling Products

B. International Building Code

C. ASHRAE Standard 62.1-2004, Ventilation for Acceptable Indoor Air Quality

D. NFPA 70 National Electrical Code

E. ASCE 7 American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures

F. International Code Council-Evaluation Services - AC 156 Acceptance Criteria for Seismic Qualification Testing of Non-structural Components

G. International Code Council-Evaluation Services Report - Seismic Engineer Report
    a. ESR 1308 - Armstrong Suspension Systems

H. International Association of Plumbing and Mechanical Officials - Seismic Engineer Report
    a. 0244 - Armstrong Single Span Suspension System

I. California Department of Public Health CDPH/EHLB Emission Standard Method Version 1.1 2010

J. LEED - Leadership in Energy and Environmental Design is a set of rating systems for the design, construction, operation, and maintenance of green buildings

K. International Well Building Standard

L. Mindful Materials

M. Living Building Challenge

N. U.S. Department of Agriculture BioPreferred program (USDA BioPreffered).

1.04 SYSTEM DESCRIPTION

Continuous/Wall-to-Wall

1.05 SUBMITTALS

A. Product Data: Submit manufacturer's technical data for each type of acoustic ceiling unit and suspension system required.

B. Samples: Minimum 6-inch x 6-inch samples of specified acoustic panel; 8-inch-long samples of exposed wall molding and suspension system, including main runner and 4-foot cross tees.

C. Shop Drawings: Layout and details of acoustic ceilings show locations of items that are to be coordinated with or supported by the ceilings.

D. Acoustic Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards. For

acoustic performance, each carton of material must carry an approved independent laboratory classification of NRC, CAC, and AC.

a. If the material supplied by the acoustic subcontractor does not have an Underwriter's Laboratory classification of acoustical performance on every carton, subcontractor shall be required to send material from every production run appearing on the job to an independent or NVLAP approved laboratory for testing, at the architect's or owner's discretion. All products not conforming to manufacturer's current published values must be removed, disposed of and replaced with complying product at the expense of the Contractor performing the work.

1.06 QUALITY ASSURANCE

A. Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer.

1. Fire Performance Characteristics: Identify acoustic ceiling components with appropriate markings of applicable testing and inspecting organization.

2. Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with ASTM E 1264 Classification.

3. Fire Resistance: As follows tested per ASTM E119 and listed in the appropriate floor or roof design in the Underwriters Laboratories Fire Resistance Directory

B. Acoustic Panels: As with other architectural features located at the ceiling, may obstruct or skew the planned fire sprinkler water distribution pattern through possibly delay or accelerate the activation of the sprinkler or fire detection systems by channeling heat from a fire either toward or away from the device. Designers and installers are advised to consult a fire protection engineer, NFPA 13, or their local codes for guidance where automatic fire detection and suppression systems are present.

C. Coordination of Work: Coordinate acoustic ceiling work with installers of related work including, but not limited to building insulation, gypsum board, light fixtures, mechanical systems, electrical systems, and sprinklers.

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver acoustic ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.

B. Before installing acoustic ceiling units, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustic ceiling units carefully to avoid chipping edges or damaged units in any way.

1.08 WARRANTY

A. Acoustic Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period. Failures include, but are not limited to the following:

1. Acoustic Panels: Sagging and warping.

2. Grid System: Rusting and manufacturer's defects.

B. Warranty Period:

1. Acoustic panels: One (1) year from date of substantial completion

2. Grid: One (1) year from date of substantial completion

C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.09 MAINTENANCE

A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.

1. Acoustic Ceiling Units: Furnish quality of full-size units equal to 5.0 percent of amount installed.
2. Exposed Suspension System Components: Furnish quantity of each exposed suspension component equal to 2.0 percent of amount installed.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Ceiling Panels:

1. Armstrong World Industries, Inc.

B. Suspension Systems:

1. Armstrong World Industries, Inc.

C: Perimeter Systems

1. Armstrong World Industries, Inc.

2.2.1 ACOUSTICAL CEILING UNITS

A. Acoustical Panels Type AP

1. Surface Texture: Medium
2. Composition: Mineral Fiber
3. Color: White
4. Size: 24" x 24"
5. Edge Profile: Square Lay-In 15/16" for interface with PRELUDE XL 15/16" Exposed Tee grid.
6. Noise Reduction Coefficient (NRC): 0.70
7. Ceiling Attenuation Class (CAC): 40
8. Acceptable Product: **SCHOOL ZONE FINE FISSURED 1810** as manufactured by Armstrong World Industries

2.3.1 METAL SUSPENSION SYSTEMS

A. Components:

Main beams and cross tees, base metal and end detail, fabricated from commercial quality hot dipped galvanized steel complying with ASTM A 653. Main beams and cross tees are double-web steel construction with type exposed flange design. Exposed surfaces chemically cleansed, capping prefinished galvanized steel in baked polyester paint. Main beams and cross tees shall have rotary stitching.

a. Structural Classification: ASTM C 635 Intermediate Duty.
b. Color: White and match the actual color of the selected ceiling tile, unless noted otherwise.
c. Acceptable Product: **PRELUDE XL 15/16" Exposed Tee** as manufactured by Armstrong World Industries

B. Attachment Devices: Size for five design loads indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.

C. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft annealed, with a yield stress load of at least three design loads, but not less than 12 gauge.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out, unless expressly permitted by manufacturer's printed recommendations.

3.02 PREPARATION

A. Measure each ceiling area and establish layout of acoustic units to balance border widths at opposite edges of each ceiling. Avoid use of less than half width units at borders and comply with reflected ceiling plans. Coordinate panel layout with mechanical and electrical fixtures.

B. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.

1. Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.

3.03 INSTALLATION

A. Follow manufacturer installation instructions.

B. Install suspension system and panels in accordance with the manufacturer's instructions, and in compliance with ASTM C 636 and with the authorities having jurisdiction.

C. Suspend main beam from overhead construction with hanger wires spaced 4-0 on center along the length of the main runner. Install hanger wires plumb and straight.

D. Install wall moldings at intersection of suspended ceiling and vertical surfaces. Miter corners where wall moldings intersect or install corner caps.

E. For reveal edge panels: Cut and reveal or rabbet edges of ceiling panels at border areas and vertical surfaces.

F. Install acoustic panels in coordination with suspended system, with edges resting on flanges of main runner and cross tees. Cut and fit panels neatly against abutting surfaces. Support edges by wall moldings

3.4 ADJUSTING AND CLEANING

A. Replace any damaged and broken panels.

B. Clean exposed surfaces of acoustic ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage. Remove any ceiling products that cannot be successfully cleaned and or repaired. Replace with attic stock or new product to eliminate evidence of damage.

C. Before disposing of ceilings, contact the Armstrong Recycling Center at 877-276-7876, select option #1 then #8 to review with a consultant the condition and location of building where the ceilings will be removed. The consultant will verify the condition of the material and that it meets the Armstrong requirements for recycling. The Armstrong consultant with provide assistance to facilitate the recycle of the ceiling.

END OF SECTION 09 51 00

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Providence, Rhode Island AA 25175

SECTION 09 65 13
RESILIENT WALL BASE/TRANSITION ACCESSORIES

PART 1 GENERAL

1.01 SUMMARY/SECTION INCLUDES

A. Resilient wall base.

B. Resilient wall base installation materials.

1.02 RELATED SECTIONS

A. Section 09 68 13 – Modular Carpeting

B. Section 09 91 00 – Painting

1.03 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM E 84, Standard Test Method for Surface Burning Characteristics of Building Materials; current edition.
2. ASTM F 137, Standard Test Method for Flexibility of Resilient Flooring Materials; current edition.
3. ASTM E 648, Standard Test method for Critical Radiant Flux; current edition.
4. ASTM F 1515, Standard Test Method for Measuring Light Stability of Resilient Flooring; current edition.
5. ASTM F 1861, Standard Specification for Resilient Wall Base, Type TP (thermoplastic rubber) or Type TV (thermoplastic vinyl); current edition.

1.04 SUBMITTALS

A. See Section 01 30 00 for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns, and colors available; and installation instructions.

C. Shop Drawings: Indicate seaming plan. Include product schedule with designations indicated on drawings.

1. Verification Samples: Submit two samples, 12-inch length, illustrating profile and color, for each resilient wall base product specified.

D. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

1.05 QUALITY ASSURANCE

A. Installer qualifications.

1. Company specializing in installing the products specified in this section with minimum 5 years of experience.
2. Employ skilled workers who install products like those required for this Project and whose products have a record of successful in-service performance.

B. Mockups: Provide resilient products with mockups specified in other Sections.

1.06 DELIVERY, STORAGE, AND HANDLING

A. **General:** Comply with the Division 1 Product Requirements Sections.

B. **Ordering:** Comply with the manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. **Delivery:** Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

D. **Storage and Protection:** Store materials protected from exposure to harmful weather conditions and temperature and humidity conditions recommended by manufacturer.

1. All materials (flooring, adhesives, weld rod and accessories) should be stored in areas that are fully enclosed and weather tight. The permanent HVAC should be fully operational and controlled and set at a minimum temperature of 65 F (18.3° C). If this is not possible, the areas should be acclimated and controlled by means of temporary HVAC to the service level conditions expected during occupancy. The temperature and humidity should range from 75° F ± 10°F (23.9° C ± 5.5° C) with a 50% ± 10% ambient relative humidity.
2. Store modular cartons stacked per the manufacturer’s recommendations.
3. Comply with the manufacturer’s recommendation for the acclimation of all materials in the space where they will be installed for at least 48 hours prior to the installation unless longer conditioning periods are required by the manufacturer.

1.07 PROJECT CONDITIONS

A. **Environmental Requirements/Conditions:**

1. Areas to receive material should be clean, fully enclosed and weather tight. The permanent HVAC should be fully operational and controlled and set at a minimum temperature of 65 F (18.3° C). If this is not possible, the areas should be acclimated and controlled by means of temporary HVAC to the service level conditions expected during occupancy. The temperature and humidity should range from 75° F ± 10°F (23.9° C ± 5.5° C) with a 50% ± 10% ambient relative humidity. These conditions **MUST** be established at least seven days prior to beginning the installation, maintained during the installation, and continued for at least seven days following the installation.
2. The flooring material should be conditioned in the same manner for at least 48 hours prior to the installation.
3. Substrate evaluation and preparation should not begin until a stable, conditioned environment has been established as described in this section.
4. Areas to receive flooring must have adequate lighting to allow for proper inspection and preparation of the substrate, installation of the flooring and final inspection.

B. **Temperature Requirements:** Maintain air temperature in spaces where products will be installed for time period before, during, and after installation as recommended by manufacturer.

1. Temperature Conditions: 65 F (18.3° C) for at least seven days prior to beginning the installation, maintained during the installation, and continued for at least seven days following the installation.

C. **Substrate Conditions:**

1. **Concrete Curing:** Do not install flooring over concrete substrates until substrates have cured and are dry to bond with adhesive as determined by the concrete and flooring manufacturer's recommendations.

2. **Testing Results:** Conduct and document pre-installation testing as specified by manufacturer in accordance with the latest version of the specified test methods.

a. **Substrate Porosity Testing:** ASTM F 3131 – Standard Practice for Field Determination of Substrate Water Absorption (Porosity) for Substrates to Receive Resilient Flooring.

b. **pH testing:** ASTM F 710 – Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

c. **In-situ Relative Humidity Testing**: ASTM F 2170 – Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

d. **Calcium Chloride Testing:** ASTM F 1869 – Standard Test Method for Measuring Moisture Vapor Emissions Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

e. **Surface Moisture Testing:** ASTM F 2659 – Standard Guide for Preliminary Evaluation of Comparative Moisture Condition of Concrete, Gypsum Cement and other Floor Slabs and Screeds Using a Non- Destructive Electronic Moisture Meter.

f. **Bond Testing:** Conduct testing and document results in accordance with the manufacturer's recommendations.

3. Close spaces to traffic during flooring installation and for a period after installation recommended in writing by the manufacturer.

4. Installation should not begin until the work of all other trades has been completed, especially overhead trade.

5. Where demountable partitions and other items are indicated for installation on top of flooring material, install flooring material before these items are installed.

D. **Field Measurements**: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

1.08 LIMITED WARRANTY

A. Resilient Flooring: Submit a written warranty executed by the manufacturer, agreeing to repair or replace resilient flooring that fails within the warranty period.

B. Limited Warranty Period: Five (5) years

C. The Limited Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

D. For the Limited Warranty to be valid, this product is required to be installed using the appropriate Forbo Flooring Guaranteed Installation System. Product installed not using the specific instructions from the Guaranteed Installation System will void the warranty.

1.09 EXTENDED SYSTEM LIMITED WARRANTY

A. **Project Warranty**: Comply with requirements according to the "Conditions of the Contract" in Division 1 Closeout Submittals Warranty Section for project warranty provisions.

B. **Manufacturer's Warranty:** Submit the manufacturer's standard warranty document executed by authorized company official for Owner's acceptance. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

1. **Warranty Period:** Thirty (30) year limited warranty commencing on Date of Original Purchase from manufacturer.

C. **Installation Warranty:** Submit the flooring contractor's installation warranty signed by the General Contractor and Installer for Owner's Acceptance, agreeing to repair or replace work which has failed a as result of defects in workmanship. Failure shall include, but not limited to, tearing, cracking, separation, deterioration or loosening from substrate, seam failure, ripples, bubbling or puckering.

Upon notification of such installation deficiencies, within the warranty period, make necessary repairs or replacement at the convenience of the Owner. Other guaranties or warranties may not be substituted by the Contractor for the terms of this warranty. Installation warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents

1. **Warranty Period:** Two (2) year limited warranty commencing on Date of Substantial Completion from flooring contractor.

1.10 MAINTENANCE

A. **Extra Materials:** Deliver extra materials to Owner. Furnish extra materials from same production run as products installed. Packaged with protective covering for storage and identified with appropriate labels.

B. **Quantity:** Furnish quantity of flooring units equal to 10% of amount installed.

C. **Delivery, Storage and Protection:** Comply with Owner's requirements for delivery, storage and protection of extra material.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. Except as otherwise specified, materials shall be the first line products of the following manufacturers:

1. Armstrong
2. Johnsonite
3. Roppe

B. Physical and performance characteristics.

1. Meets performance requirements for ASTM F 1861 Standard Specification for Resilient Wall Base, Type TP (thermoplastic rubber) or Type TV (thermoplastic vinyl), Group 1.
2. ASTM E 648, Standard Test Method for Critical Radiant Flux of 0.45 watts/cm2 or greater, Class I.
3. ASTM E 84, Standard Test Method for Surface Burning Characteristics of Building Materials, Class A, Smoke.
4. Flexibility: Does not crack, break, or show any signs of fatigue when bent around a 1 1/4" diameter cylinder when tested according to ASTM F 137 Standard Test Method for Flexibility of Resilient Flooring Materials protocols.

5. Color Stability: Meets or exceeds ASTM F 1861 requirements for color stability when tested to ASTM F 1515 Standard Test Method for Measuring Light Stability of Resilient Flooring protocols.

Substitutions: not permitted.

C. Color and pattern: to be selected by Owner/ Architect from manufacturer's full range of options.

2.02 RESILIENT WAL BASE & TRANSITION MATERIALS

A. Resilient Edge Strips: Strips shall be homogeneous vinyl or rubber composition with a tapered or bull nose edge no less than 1" wide, colored to match flooring or as selected by Architect from standard colors available.

B. Metal Edge Strips: Strips shall be of width shown and of required thickness to protect the exposed edge of the flooring with units in maximum length available to minimize the number of joints.

1. As selected by Architect from Manufacturer full line.

C. Wall Base: Provide rubber wall base complying with FS SS-W-40, Type I.

1. As selected by Architect from Manufacturer full line.

D. Floor Care Products: Provide products as required in Section 3.7 Protection.

1. Provide cleaning chemicals and equipment as recommended by manufacturers.

2.03 PRODUCT SUBSTITUTION

A. Substitutions: Under provisions of Section 01 60 00.

2.04 SOURCE QUALITY

A. Source Quality**:** Obtain flooring product materials from a single manufacturer.

B. Leveling and patching compound: Trowelable latex-modified, Portland-cement-based formulation.

C. Adhesives: as recommended by manufacturer for specific site conditions and substrates.

2.05 ACCESSORIES

A. Base manufacturer's preformed corners (optional).

PART 3 - EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

A. **Compliance:** Comply with manufacturer's product data, including technical bulletins, product catalog, installation instructions, and product carton instructions for installation and maintenance procedures as needed.

3.02 EXAMINATION

A. **Site Verification of Conditions**: Verify substrate conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions (i.e. moisture tests, bond test, pH test, etc.).

B. Visually inspect flooring materials, adhesives and accessories prior to installation. Flooring material with visual defects shall not be installed and shall not be considered as a legitimate claim.

C. Examine subfloors prior to installation to determine that surfaces are smooth and free from cracks, holes, ridges, and other defects that might prevent adhesive bond or impair durability or appearance of the flooring material.

D. Inspect subfloors prior to installation to determine that surfaces are free from curing, sealing, parting and hardening compounds; residual adhesives; adhesive removers; and other foreign materials that might prevent adhesive bond. Visually inspect for evidence of moisture, alkaline salts, carbonation, dusting, mold, or mildew.

E. Report conditions contrary to contract requirements that would prevent proper installation. Do not proceed with the installation until unsatisfactory conditions have been corrected.

F. Failure to call attention to defects or imperfections will be construed as acceptance and approval of the subfloor. Installation indicates acceptance of substrates with regard to conditions existing at the time of installation.

3.03 PREPARATION

A. **General:** Comply with manufacturer's written installation recommendations for preparing substrates indicated to receive flooring products and accessories.

B. **Adjacent Surfaces Protection:** Protect adjacent work areas and finish surfaces from damage during product installation.

C. **Surface Preparation**:

1. **General:** Prepare substrate in accordance with manufacturer's recommendations and ASTM industry standards. Work shall not proceed until all unsatisfactory conditions are corrected to acceptable conditions to the Owner and Architect.
2. **Substrate:** Substrates to receive vinyl wall base and accessories must be structurally sound, rigid, smooth, flat, clean, and permanently dry. The substrates must be free of all foreign materials including, but not limited to, dust, solvent, paint, wax, oils, grease, residual adhesive, adhesive removers, film-forming curing compounds, silicate penetrating curing compounds, sealing, hardening or parting compounds, alkaline salts, excessive carbonation or laitance, mold, mildew, and other foreign materials that might affect the rate of moisture dissipation from the concrete, the adhesion of flooring to the concrete or cause a discoloration of the flooring from below.

D. **Substrate Testing:** In order to ensure that the moisture condition of concrete substrates is within acceptable limits, it is essential that moisture testing be conducted and documented on ALL concrete substrates regardless of age or grade level, including those where resilient flooring has already been installed. Moisture testing should only be conducted once a stable, conditioned environment has been established in accordance with the latest version of the specified test methods. All other testing types shall be conducted on all substrate types. A diagram of the area showing the location and results of each test should be submitted to the Architect, General Contractor or End User. If at the time of testing the test results exceed the limitations set forth by the flooring manufacturer, the installation must not proceed until the problem has been corrected. The Contractor responsible for the substrate shall be responsible for the costs associated with analysis of the substrate and subsequent remediation requirements.

1. **Surface Moisture Testing:** ASTM F 2659 – Standard Guide for Preliminary Evaluation of Comparative Moisture Condition of Concrete, Gypsum Cement and other Floor Slabs and Screeds Using a Non- Destructive Electronic Moisture Meter.

a. Conduct testing at each calcium chloride test location as the calcium chloride test is being placed.
b. The concrete surface must be dry and have a value of 5 or less when using Forbo Sustain 1299 adhesive.

2. **In-situ Relative Humidity Testing:** ASTM F 2170 – Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

   a. Conduct three (3) tests for the first 1,000 square feet (100 square meters) and at least one additional test for each additional 1,000 square feet (100 square meters).

3. **Calcium Chloride Testing:** ASTM F 1869 – Standard Test Method for Measuring Moisture Vapor Emissions Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

4. **Substrate Porosity Testing:** ASTM F 3131 – Standard Practice for Field Determination of Substrate Water Absorption (Porosity) for Substrates to Receive Resilient Flooring.

   a. Conduct testing in accordance with the manufacturer's recommendations in various locations throughout the area where flooring is to be installed. Although the number of tests required may vary, enough tests should be performed to allow an evaluation of the entire area where material will be installed.

   b. Water should penetrate the substrate within 5 – 20 minutes to be considered acceptable. If water penetrates too rapidly or too slowly, adjustments to the substrate must be made to provide the proper surface profile. Substrates determined to be overly porous, dusty or generally insufficient may need to be primed using a primer according to the manufacturer's recommendations to regulate the porosity level of the substrate.

5. **pH testing:** ASTM F 710 – Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

   a. Conduct testing at each calcium chloride test location as the calcium chloride tests are removed.

6. **Bond Testing:**
   a. Conduct testing in accordance with the manufacturer's recommendations in various locations throughout the area where flooring is to be installed. Although the number of tests required may vary, enough tests should be performed to allow an evaluation of the entire area where material will be installed.

3.04 FIELD QUALITY REQUIREMENTS

A. **Manufacturer's Field Services:** Upon request of the Owner, General Contractor or Architect, and with at least 72 hours' notice, provide manufacturer's field service consisting of product use recommendations and periodic site visit for inspection of product installation in accordance with manufacturer's recommendations.

3.05 INSTALLATION OF VINYL WALL BASE & ACCESSORIES

A. Apply top set wall base to walls, columns, casework, and other permanent fixtures in areas where top-set base is required. Install base in lengths if practical, with inside corners fabricated from base materials that are mitered or coped. Tightly bond base to vertical substrate with continuous contact at horizontal and vertical surfaces. complying with the edge strip manufacturer's recommendations.

B. Fill voids with plastic filler along the top edge of the resilient wall base or integral cove cap on masonry surfaces or other similar irregular substrates.

C. Place resilient edge strips tightly butted to flooring, and secure with adhesive recommended by the edge strip manufacturer. Install edge strips at edges of flooring that would otherwise be exposed.

D. Apply [butt-type] [overlap] metal edge strips where shown on the drawings, [before] [after] flooring installation. Secure units to the substrate, complying with the edge strip manufacturer's recommendations.

3.06 CLEANING

A. **Initial Maintenance:** In order to allow the adhesive to dry and cure properly, wait a minimum of five days following the installation before conducting wet cleaning procedures or initial maintenance. Additional time may be necessary if the installation is over a non-porous substrate.

B. **Procedure:**

1. Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's recommendations prior to Owner's acceptance. Remove construction debris from project site and legally dispose of debris.

2. Remove visible adhesive and other surface blemishes using cleaning methods recommended by floor manufacturers.

3. Wall Vinyl Base and Accessories are pre-sealed and pre-finished. It is occupancy ready and no additional finish is required at the time of installation. See manufacturers' recommendations for further information.

4. Remove all surface soil, debris, sand and grit by dust mopping, sweeping or vacuuming the floor.

5. Mix a neutral pH cleaning solution according to the label directions and apply the solution to the floor. Do NOT flood the floor. Allow the solution to dwell on the floor for 5 – 10 minutes.

6. Scrub the floor using a 3M™ Red Buffer Pad #5100 or equivalent (if necessary).

7. Pick up the scrubbing solution with a wet vacuum or an automatic scrubber.

8. Rinse the entire floor surface with a clean mop using clean, cool water.

9. Allow the floor to dry thoroughly before allowing traffic.

3.07 PROTECTION

A. **Protection:** Do not allow heavy traffic or rolling loads for at least 72 hours following the installation. Additional time may be necessary if the installation is over a non-porous substrate. Protect installed products and finish surfaces from damage during construction. Remove and legally dispose of protective covering at time of Substantial Completion.

3.08 INTIAL MAINTENANCE PROCEDURES

A. **General:** Include in Contract Sum Amount cost for initial maintenance procedures and execute procedures after flooring installation as recommended by flooring manufacturer.

END OF SECTION 09 65 13

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SECTION 09 68 13
MODULAR CARPETING

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 RELATED SECTIONS

A. Sections related to this section include:

1. Finishes: Refer to Division 9 Finishes Section for maintenance of flooring.

2. Resilient Flooring Accessories: Refer to Division 9 Finishes Sections for resilient wall bases, reducer strips, metal edge strips and other resilient flooring accessories.

1.03 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM D 1335 – Standard Test Method for Tuft Bind of Pile Yarn Floor Coverings
2. ASTM D 2859 – Standard Test Method for Ignition Characteristics of Finished Textile Floor Coverings (Pill Test)
3. ASTM D 3936 – Standard Test Method for Resistance to Delamination of the Secondary Backing of Pile Yarn Floor Coverings
4. ASTM D 5252 – Standard Practice for the Operation of the Hexapod Tumble Drum Tester
5. ASTM E 492 – Standard Test Method for Laboratory Measurement of impact Sound Transmission through Floor-Ceiling Assemblies Using the Tapping Machine
6. ASTM E 648 – Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
7. ASTM E 662 – Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
8. ASTM E 989 – Standard Classification for Determination of impact insulation Class (llC)
9. ASTM E 1745 – Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs
10. ASTM F 141 – Standard Terminology Relating to Resilient Floor Coverings
11. ASTM F 710 – Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
12. ASTM F 1482 – Standard Practice for Installation and Preparation of Panel Type Underlayment to Receive Resilient Flooring
13. ASTM F 1861 – Standard Specification for Resilient Wall Base
14. ASTM F 1869 – Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
15. ASTM F 2170 – Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

16. ASTM F 2419 – Standard Practice for Installation of Thick Poured Gypsum Concrete Underlayment and Preparation of the Surface to Receive Resilient Flooring
17. ASTM F 2471 – Standard Practice for Installation of Thick Poured Lightweight Cellular Concrete Underlayment and Preparation of the Surface to Receive Resilient Flooring
18. ASTM F 2659 – Standard Guide for Preliminary Evaluation of Comparative Moisture Condition of Concrete, Gypsum Cement and other Floor Slabs and Screeds Using a Non-Destructive Electronic Moisture Meter
19. ASTM F 2678 – Standard Practice for Preparing Panel Underlayment, Thick Poured Gypsum Concrete Underlayment, Thick Poured Lightweight Cellular Concrete Underlayment, and Concrete Subfloors with Underlayment Patching Compounds to Receive Resilient Flooring
20. ASTM F 3191 – Standard Practice for Field Determination of Substrate Water Absorption (Porosity) for Substrates to Receive Resilient Flooring

B. National Fire Protection Association (NFPA):
1. NFPA 253 – Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
2. NFPA 258 – Test Method for Specific Optical Density of Smoke Generated by Solid Materials

H. American Association of Textile Chemists and Colorists (AATCC):
1. AATCC 16E – Colorfastness to Light
2. AATCC 107 – Colorfastness to Water
3. AATCC 134 – Electrostatic Propensity of Carpets
4. AATCC 165 – Colorfastness to Crocking: Textile Floor Coverings Crockmeter Method

1.04 1SUBMITTALS

A. General: Submit each item in this Article according to the "Conditions of the Contract" and Division 1 Specification Sections.

B. Product Data: Submit three (3) copies of the manufacturer’s technical data and installation recommendations for each type of flooring and accessory products specified.

C. Shop Drawings:

1. Submit shop drawings showing layout, locations of seams, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts.

2. Show details of profiles and product components, including anchorage, accessories, finish colors, patterns and textures.

D. Samples: Submit three (3) sets of samples of each type, color and finish of flooring and accessory products specified, with an indication of full range of color, pattern and texture variation. Provide samples with a minimum size of 6” x 9” for flooring products and 6” in length for accessories.

E. Quality Assurance Submittals:

1. Submit three (3) copies of the manufacturer’s Product Technical Data Sheet, specifying performance characteristics, criteria and physical requirements.

2. Submit three (3) copies of the manufacturer's written installation recommendations.

F. Closeout Submittals:

1. Submit three (3) copies of the maintenance and operations data. This should include methods for maintaining the installed products and any precautions against cleaning materials or methods that are detrimental to the product and their performance.

2. Submit three (3) copies of the warranty as specified herein.

3. Installer Certification: Submit proof of certification from the manufacturer certifying that the installers comply with the specified requirements.

G. Replacement Material: After completion of work, deliver to project site replacement materials from the same manufactured lot as materials installed. Package materials with protective covering and identify each with descriptive labels.
   1. Flooring Materials: No less than 50 square feet of each type, pattern and color installed.
   2. Accessories: No less than 10 linear feet for each 500 linear feet or fraction thereof each different type and color installed.

1.05 QUALITY ASSURANCE

A. Manufacturer: Whenever possible, provide each type of flooring as provided by a single manufacturer, including recommended primers, adhesives, sealants, patching and leveling compounds.

B. Pre-Installation Meetings: Conduct pre-installation meetings to verify project requirements, substrate conditions, manufacturer's installation and floor care recommendations and manufacturer's warranty requirements. Comply with requirements according to the “Project Management and Coordination” in Division 1 Project Meetings Section.

C. Pre-Installation Testing: Conduct and document pre-installation testing as specified by manufacturer in accordance with the latest version of the specified test methods.

   1. Substrate Porosity Testing: ASTM F 3131 – Standard Practice for Field Determination of Substrate Water Absorption (Porosity) for Substrates to Receive Resilient Flooring.

   2. pH testing: ASTM F 710 – Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

   3. In-situ Relative Humidity Testing: ASTM F 2170 – Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

   4. Calcium Chloride Testing: ASTM F 1869 – Standard Test Method for Measuring Moisture Vapor Emissions Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

   5. Surface Moisture Testing: ASTM F 2659 – Standard Guide for Preliminary Evaluation of Comparative Moisture Condition of Concrete, Gypsum Cement and other Floor Slabs and Screeds Using a Non- Destructive Electronic Moisture Meter.

   6. Bond Testing: Conduct testing and document results in accordance with the manufacturer’s recommendations.

D. Flooring Contractor Qualifications:

   1. The awarded flooring contractor shall be an established firm, experienced in the installation of the specified product and shall have access to all manufacturers’ required specifications, technical, installation and maintenance-related documents.

E. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.

   1. Engage installers certified by Forbo as a “Forbo Certified Modular Technician.”

   2. Proof of valid certification must be submitted to the General Contractor and verified by Forbo prior to the start of the project.

F. Regulatory Requirements: Provide flooring products with the following fire performance characteristics as determined by testing identical products in accordance with the latest version of ASTM method indicated below by a certified testing laboratory or another testing and inspecting agency acceptable to authorities having jurisdiction.

1. ASTM E 648 – Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source or NFPA 253 – Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.

2. ASTM E 662 – Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials or NFPA 258 – Test Method for Specific Optical Density of Smoke Generated by Solid Materials.

3. ASTM D 2859 – Standard Test Method for Ignition Characteristics of Finished Textile Floor Coverings (Pill Test).

G. Post-Installation Meetings: Conduct post-installation meetings to review methods and procedures related to floor care and warranty requirements.

1.06 WARRANTY

A. Project Warranty: Comply with requirements according to the "Conditions of the Contract" in Division 1 Closeout Submittals Warranty Section for project warranty provisions.

B. Manufacturer's Warranty: Submit the manufacturer's standard warranty document executed by authorized company official for Owner's acceptance. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

1. Warranty Period: Twenty (20) year limited warranty commencing on Date of Original Purchase from manufacturer.

C. Installation Warranty: Submit the flooring contractor’s installation warranty signed by the General Contractor and Installer for Owner’s Acceptance, agreeing to repair or replace work which has failed a as result of defects in workmanship. Failure shall include, but not limited to, tearing, cracking, separation, deterioration or loosening from substrate, seam failure, ripples, bubbling or puckering. Upon notification of such installation deficiencies, within the warranty period, make necessary repairs or replacement at the convenience of the Owner. Other guaranties or warranties may not be substituted by the Contractor for the terms of this warranty. Installation warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

1. Warranty Period: Two (2) year limited warranty commencing on Date of Substantial Completion from flooring contractor.

1.07 DELIVERY, STORAGE AND HANDLING

A. General: Comply with the Division 1 Product Requirements Sections.

B. Ordering: Comply with the manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

D. Storage and Protection: Store materials protected from exposure to harmful weather conditions and temperature and humidity conditions recommended by manufacturer.

1. All materials (flooring, adhesives and accessories) should be stored in areas that are fully enclosed and weathertight. The permanent HVAC should be fully operational and controlled and set at a minimum temperature of 65 F (18.3° C). If this is not possible, the areas should be acclimated and controlled by means of temporary HVAC to the service level conditions expected during occupancy. The temperature and humidity should range from 75° F ± 10°F (23.9° C ± 5.5° C) with a 50% ± 10% ambient relative humidity.

2. Store modular cartons stacked per the manufacturer’s recommendations.

3. Comply with the manufacturer's recommendation for the acclimation of all materials in the space where they will be installed for at least 48 hours prior to the installation unless longer conditioning periods are required by the manufacturer.

1.08 PROJECT CONDITIONS

A. Environmental Requirements/Conditions:

1. Areas to receive material should be clean, fully enclosed and weather tight. The permanent HVAC should be fully operational and controlled and set at a minimum temperature 65° F (18.3° C). If this is not possible, the areas should be acclimated and controlled by means of temporary HVAC to the service level conditions expected during occupancy. The temperature and humidity should range from 75° F ± 10°F (23.9° C ± 5.5° C) with a 50% ± 10% ambient relative humidity. These conditions **MUST** be established at least seven days prior to beginning the installation, maintained during the installation, and continued for at least seven days following the installation.
2. The flooring material should be conditioned in the same manner for at least 48 hours prior to the installation.
3. Substrate evaluation and preparation should not begin until a stable, conditioned environment has been established as described in this section.
4. Areas to receive flooring must have adequate lighting to allow for proper inspection and preparation of the substrate, installation of the flooring and final inspection.

B. Temperature Requirements: Maintain air temperature in spaces where products will be installed for time period before, during, and after installation as recommended by manufacturer.

1. Temperature Conditions: 65 F (18.3° C) for at least seven days prior to beginning the installation, maintained during the installation, and continued for at least seven days following the installation.

C. Substrate Conditions:

1. Concrete Curing: Do not install flooring over concrete substrates until substrates have cured and are dry to bond with adhesive as determined by the concrete and flooring manufacturer's recommendations.
2. Testing Results: Conduct and document pre-installation testing as specified by manufacturer in accordance with the latest version of the specified test methods.

    a. Substrate Porosity Testing: ASTM F 3131 – Standard Practice for Field Determination of Substrate Water Absorption (Porosity) for Substrates to Receive Resilient Flooring.
    b. pH testing: ASTM F 710 – Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
    c. In-situ Relative Humidity Testing: ASTM F 2170 – Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
    d. Calcium Chloride Testing: ASTM F 1869 – Standard Test Method for Measuring Moisture Vapor Emissions Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
    e. Surface Moisture Testing: ASTM F 2659 – Standard Guide for Preliminary Evaluation of Comparative Moisture Condition of Concrete, Gypsum Cement and other Floor Slabs and Screeds Using a Non- Destructive Electronic Moisture Meter.
    f. Bond Testing: Conduct testing and document results in accordance with the manufacturer's recommendations.

3. Close spaces to traffic during flooring installation and for time period after installation recommended in writing by the manufacturer.
4. Installation should not begin until the work of all other trades has been completed, especially overhead trade.
5. Where demountable partitions and other items are indicated for installation on top of flooring material, install flooring material before these items are installed.

D. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

PART 2 PRODUCTS

2.01 MODULAR CARPETING

A. Manufacturer Address:
FORBO FLOORING SYSTEMS - US Headquarters
8 Maplewood Dr.
Hazleton, PA 18202
Phone: 1-800-842-7839

B. Proprietary Product Information:

1. Material Name: Flotex
2. Description: Flocked high performance carpet tile with a 100% nylon type 6.6 wear layer with an intermediate fiberglass layer and a recycled vinyl cushioned backing.
3. Size: Approximately 19.69” x 19.69” (50cm x 50cm)
4. Gauge: 5.3mm (0.21”)
5. Backing: Vinyl
6. Color and Pattern:

    a. Colors and patterns shall be selected by Architect. Patterns shall be defined in any given area, applied in stripes, diagonals, checkerboard patterns and other designs as determined by the Architect. All selections shall be made from the manufacturer’s full product lines, including premium colors. See Architectural drawings for color schedule list in reference to this material.

    b. Adhesive: To be selected according to manufacturer’s recommendation. [Forbo FRT 950 Adhesive] [Forbo T 940 Adhesive] [FRS 885 Adhesive] [Forbo Sustain 885m Adhesive] [Forbo Sustain 1195 Adhesive] [Forbo FST 1299 Adhesive] [Forbo 660 Adhesive]

2.02 2.02 ACCESSORIES

A. Resilient Edge Strips: Strips shall be homogeneous vinyl or rubber composition with a tapered or bull nose edge no less than 1” wide, colored to match flooring or as selected by Architect from standard colors available.

B. Metal Edge Strips: Strips shall be of width shown and of required thickness to protect the exposed edge of the flooring with units in maximum length available to minimize the number of joints. Color as selected by Architect from standard colors available.

C. Floor Care Products: Provide products as required in Section 3.7 Cleaning.

2.03 2.03 PRODUCT SUBSTITUTIONS

A. Substitutions: No substitutions permitted.

2.04 2.04 RELATED MATERIALS

A. Related Materials: Refer to other sections for related materials as follows.

1. Concrete: Refer to Division 3 Concrete Sections for cast-in-place concrete, concrete toppings, and cementitious underlayment’s.

2. Resilient Flooring Accessories: Refer to Division 9 Finishes Sections for resilient wall bases, reducer strips, metal edge strips and other resilient flooring accessories.

2.05 SOURCE QUALITY

A. Source Quality: Obtain flooring product materials from a single manufacturer.

PART 3 EXECUTION

3.01 MANUFACTURERS' RECOMMENDATIONS

A. Compliance: Comply with manufacturer's product technical data, including product technical bulletins, installation recommendations and floor care recommendations.

3.02 INSPECTION

A. Site Verification of Conditions: The Flooring Contractor and Installer shall examine and verify conditions previously described in other sections under which flooring, and accessories are to be installed to be in accordance with the manufacturer's installation recommendations and must notify the General Contractor in writing of conditions detrimental to proper and timely completion of work. Work shall not proceed until all unsatisfactory conditions are corrected to acceptable conditions to the Owner and Architect.

B. Material Inspection: Visually inspect all materials prior to installation in accordance with the manufacturer's installation recommendations. Material with visual defects shall not be installed and shall not be considered as a legitimate claim if they are installed.

3.03 PREPARATION

A. General: Comply with manufacturer's written installation recommendations for preparing substrates indicated to receive flooring products and accessories.

B. Adjacent Surfaces Protection: Protect adjacent work areas and finish surfaces from damage during product installation.

C. Surface Preparation:

1. General: Prepare a substrate in accordance with manufacturer's recommendations and ASTM industry standards. Work shall not proceed until all unsatisfactory conditions are corrected to acceptable conditions to the Owner and Architect.

2. Substrate: Substrates to receive flooring must be structurally sound, rigid, smooth, flat, clean, and permanently dry. The substrates must be free of all foreign materials including, but not limited to, dust, solvent, paint, wax, oils, grease, residual adhesive, adhesive removers, film-forming curing compounds, silicate penetrating curing compounds, sealing, hardening or parting compounds, alkaline salts, excessive carbonation or laitance, mold, mildew, and other foreign materials that might affect the rate of moisture dissipation from the concrete, the adhesion of flooring to the concrete or cause a discoloration of the flooring from below.

3. Concrete Substrate: Concrete substrates shall be cured per the concrete manufacturer's recommendations. They must have a minimum compressive strength of 3,000 psi and a minimum dry density of 150 pounds per cubic foot. Refer to Division 3 Concrete Sections for patching, repairing crack materials and leveling compounds with Portland cement-based compounds.

a. Reference Standard: Comply with the latest version of ASTM F 710 – Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

D. Substrate Testing: In order to ensure that the moisture condition of concrete substrates is within acceptable limits, it is essential that moisture testing be conducted and documented on ALL concrete substrates regardless of age or grade level, including those where resilient flooring has already been installed. Moisture testing should only be conducted once a stable, conditioned environment has been established in accordance with the latest version of the specified test methods. All other testing types shall be conducted on all substrate types. A diagram of the area showing the location and results of each test should be submitted to the Architect, General Contractor or End User. If at the time of testing the test results exceed the limitations set forth by the flooring manufacturer, the installation must not proceed until the problem has been corrected. The Contractor responsible for the substrate shall be responsible for the costs associated with analysis of the substrate and subsequent remediation requirements.

1. Surface Moisture Testing: ASTM F 2659 – Standard Guide for Preliminary Evaluation of Comparative Moisture Condition of Concrete, Gypsum Cement and other Floor Slabs and Screeds Using a Non- Destructive Electronic Moisture Meter.

2. In-situ Relative Humidity Testing: ASTM F 2170 – Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes. Conduct three (3) tests for the first 1,000 square feet (100 square meters) and at least one additional test for each additional 1,000 square feet (100 square meters).

3. Calcium Chloride Testing: ASTM F 1869 – Standard Test Method for Measuring Moisture Vapor Emissions Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

    a. Conduct three (3) tests for the first 1,000 square feet (100 square meters) and at least one additional test for each additional 1,000 square feet (100 square meters).

4. Substrate Porosity Testing: ASTM F 3131 – Standard Practice for Field Determination of Substrate Water Absorption (Porosity) for Substrates to Receive Resilient Flooring.

    a. Conduct testing in accordance with the manufacturer's recommendations in various locations throughout the area where flooring is to be installed. Although the number of tests required may vary, enough tests should be performed to allow an evaluation of the entire area where material will be installed.

    b. Water should penetrate into the substrate within 5 – 10 minutes to be considered acceptable. If water penetrates too rapidly or too slowly, adjustments to the substrate must be made to provide the proper surface profile. Substrates determined to be overly porous, dusty or generally insufficient may need to be primed using a primer according to the manufacturer's recommendations to regulate the porosity level of the substrate.

5 pH testing: ASTM F 710 – Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

    a. Conduct testing at each calcium chloride test location as the calcium chloride tests are removed.

6 Bond Testing

    a. Conduct testing in accordance with the manufacturer's recommendations in various locations throughout the area where flooring is to be installed. Although the number of tests required may vary, enough tests should be performed to allow an evaluation of the entire area where material will be installed.

3.04 INSTALLATION

A. Material Installation: Flotex Modular has a directional pattern which may be installed either with the arrows running in the same direction, alternating directions (quarter turned) or in opposite directions (half turned). Always confirm the recommended Flotex® Modular installation direction before beginning the installation. After establishing the starting lines, spread the adhesive using the

recommended trowel for permanent installations ensuring enough adhesive is being applied (refer to the spread rate on the adhesive bucket lid sticker). Be sure to spread adhesive all the way to the starting line without leaving any voids. For permanent installations, tiles must be installed into wet adhesive. Do not spread adhesive in an area larger than can be installed while ensuring 100% wet transfer to the backing of the material. Begin laying tiles at the starting point, ensuring that the tile is placed exactly along the layout lines. If the first few tiles are not installed accurately, the entire installation will be affected. Immediately roll the flooring in all directions using a 100 lb. roller to ensure proper adhesive transfer. Additional rolling is required during adhesive setup to ensure that the material is flat and fully adhered. The use of a three-section wall roller or steel seam roller is required at walls, under toe kicks or anywhere the full weight of a 100 lb. roller cannot access or be applied.

B. Permanent Adhesive Application: Use trowel recommended by flooring manufacturer for Forbo [T 940] [FRS 885] [Sustain 885m] [Sustain 1195] adhesive.
   1. 1/16” x 1/16” x 1/16” square notch trowel.
   2. Spread rate is approximately 125 ft^2/gallon.

C. Permanent Adhesive Application: Use trowel recommended by flooring manufacturer for Forbo 660 adhesive.
   1. 1/16” x 1/16” x 1/16” square notch trowel.
   2. Spread rate is approximately 110-120 ft^2/gallon.

D. Installation Techniques:

   1. Where demountable partitions and other items are indicated for installation on top of finished flooring, install flooring before these items are installed.

   2. Scribe, cut, fit flooring to butt tightly to vertical surfaces, permanent fixtures and built-in furniture, including pipes, outlets, edgings, thresholds, nosing’s, and cabinets.

   3. Extend flooring into toe spaces, door reveals, closets, and similar openings.

   4. Install flooring on covers for telephone and electrical ducts, and similar items occurring within finish floor areas. Maintain overall continuity of color and pattern with pieces of flooring installed on these covers.

   5. Do not install resilient flooring over expansion joints. Use expansion joint covers manufactured for use with resilient flooring. Refer to other specification sections for expansion joint covers.

   6. Adhere resilient flooring to substrate without producing open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, or other surface imperfections in completed installation.

      a. Use adhesive applied to the substrate in compliance with the flooring manufacturer’s recommendations, including those for proper spreading of the adhesive, adhesive missing and adhesive open and working times.

   7. Immediately roll the flooring in all directions using a 100 lb. roller to ensure proper adhesive transfer. Additional rolling is required during adhesive setup to ensure that the material is flat and fully adhered. The use of a three-section wall roller or steel seam roller is required at walls, under toe kicks or anywhere the full weight of a 100 lb. roller cannot access or be applied.

E. Finish Flooring Patterns: To be determined by Architect in coordination with Owner.

3.05 FIELD QUALITY REQUIREMENTS

A. Manufacturer's Field Services: Upon request of the Owner, General Contractor, and with at least 72 hours’ notice, provide manufacturer's field service consisting of product use recommendations and

periodic site visit for inspection of product installation in accordance with manufacturer's recommendations.

3.06 PROTECTION

A. Protection: Do not allow heavy traffic or rolling loads for at least 72 hours following the installation. Additional time may be necessary if the installation is over a non-porous substrate. Protect installed products and finish surfaces from damage during construction. Remove and legally dispose of protective covering at time of Substantial Completion.

3.07 CLEANING

A. Initial Maintenance: In order to allow the adhesive to dry and cure properly, wait a minimum of five days following the installation before conducting wet cleaning procedures or initial maintenance. Additional time may be necessary if the installation is over a non-porous substrate.

B. Procedure:

1. Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's recommendations prior to Owner's acceptance. Remove construction debris from project site and legally dispose of debris.

2. Remove visible adhesive and other surface blemishes using cleaning methods recommended by floor manufacturers.

3. Remove all surface soil, debris, sand and grit by vacuuming using a dual motor upright vacuum with a rotating brush. The brush should be approximately 1/8" below the vacuum cleaner casing to ensure proper agitation. Make several passes with the vacuum cleaner to ensure that all loose dirt is removed. Vacuum action should be fast forward and slow backward.

4. Flotex® requires regular care to keep it clean and prevent the accumulation of dirt and soil. Proper cleaning, such as daily vacuuming and routine hot water extraction, can reduce contamination to virtually non-existent levels. Identify sources of soiling and react to spills immediately, before they dry.

5. Spot clean, if necessary, by using the "Scrape, Scrub and Rinse" procedures.

C. "Scrape, Scrub, And Rinse" Spotting Procedure:

1. Scrape up spills using a spatula or blunt edged scraper and wipe excess soil onto a cloth.

2. Apply a liberal amount of clean water to the spot.

3. Using a spatula, scrape the water and the remains of the spill into a paper towel or cloth. Keep scraping with the spatula until the spill is completely removed.

4. If the spill or stain is not completely removed, apply a general-purpose spotter cleaner to a white cotton cloth and rub it into the spot. Do not be afraid to use aggressive scrubbing to remove set-in spills. A soft wire brush can be used to remove scuff marks or other set-in spills. Refer to the list at the end of this section of recommended products. Be certain not to leave any detergent residue when cleaning. Any chemicals applied to the flooring must be removed. No more than 1 oz. per gallon should be used. The most common problem when caring for Flotex® is the overuse of cleaning chemicals. The buildup of chemicals and cleaners will de-luster the Flotex® fibers and leave a dull appearance. Chemical buildup also attracts dirt faster and speeds soiling.

5. Using a spatula, scrape the water, any cleaner and the remains of the spill into a paper towel or cloth. Keep scraping with the spatula until the spill or stain is completely removed.

6. Rinse the area thoroughly with clean water to ensure that any cleaning solution is completely removed.

7. A spotter machine may be used to perform rinsing throughout the spot cleaning process.

8. Allow a minimum of three hours before traffic is allowed on the floor surface again. If traffic is allowed on the floor before it has completely dried, the fibers are more susceptible to attract soil, requiring additional cleaning procedures in these areas to achieve the desired result.

3.08 INITIAL MAINTENANCE PROCEDURES

A. General: Include in Contract Sum Amount cost for initial maintenance procedures and execute procedures after flooring installation as recommended by flooring manufacturer.

B. Initial maintenance to be conducted by awarded Flooring Contractor.

END OF SECTION 09 68 13

310 George Washington Highway - Suite 100 - Smithfield, Rhode Island 02917 T 401-232-5010 F 401-232-5080

RHODE ISLAND DEPARTMENT OF ADMINISTRATION
SHEPARD BLDG – 4TH FLOOR RENOVATION
Providence, Rhode Island AA 25175

SECTION 09 91 00
PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Surface finish schedule.

1.02 RELATED SECTIONS

A. Section 08 11 13 – Hollow Metal Frames.

B. Section 09 21 16 - Gypsum Board Assemblies

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.

1.04 DEFINITIONS

A. Conform to ANSI/ASTM D16 for interpretation of terms used in this Section.

1.05 QUALITY ASSURANCE

A. PRODUCT MANUFACTURER: Company specializing in manufacturing quality paint and finish products with 20 years' experience.

B. APPLICATOR: Company specializing in commercial painting and finishing with 10 years documented experience.

1.06 REGULATORY REQUIREMENTS

A. Conform to applicable code for flame/fuel/smoke rating requirements for finishes.

1.07 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, unless required otherwise by manufacturer's instructions.

B. Do not apply exterior coatings during rain or snow, or when relative humidity is above 50 percent unless allowed or required otherwise by manufacturer's instructions.

C. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior, unless allowed or required otherwise by manufacturer's instructions.

D. Minimum Application Temperature for Varnish and Urethane Finishes: 65 degrees F for interior or exterior, unless allowed or required otherwise by manufacturer's instructions.

E. Provide lighting level of 80 ft candles measured mid-height at substrate surf.

1.08 SUBMITTALS

A. Submit product data under the provisions of the Contract and Specification Sections.

B. Provide product data on all finishing products and special coatings.

C. Submit samples under the provisions of the Contract and Specification Sections.

D. Submit two samples 1 x 1 inch in size illustrating range of colors and textures available for each surface finishing product scheduled, for selection.

E. Submit manufacturer's application instructions under the provisions of the Contract and Specification Sections.

1.09 FIELD SAMPLES

A. Provide samples under the provisions of the Contract and Specification Sections.

B. Provide one field sample panel for each type of coating, 4 feet square, illustrating coating color, texture, and finish.

C. Locate where directed by Architect.

D. Accepted sample may not remain as part of the Work.

1.10 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site under the provisions of the Contract and Specification Sections.

B. Store and protect products under the provisions of the Contract and Specification Sections.

C. Deliver products to site in sealed and labeled containers; inspect to verify acceptance.

D. Container labeling to include manufacturer's name, type of paint, brand name and code, coverage, surface preparation, drying time, cleanup, color designation and instructions for mixing and reducing.

E. Store paint materials at a minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in well ventilated area, unless required otherwise by manufacturer's instructions.

F. Take precautionary measures to prevent fire hazards and spontaneous combustion.

1.11 EXTRA STOCK

A. Provide a five-gallon container of each color and surface texture to Owner.

B. Label each container with color, texture, and room locations, in addition to the manufacturer's label.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Except as otherwise specified, materials shall be the first line products of the following manufacturers:

1. Benjamin Moore.
2. Pittsburgh Paints.
3. Sherwin Williams.
4. H&C Concrete Stains and Sealers

B. Materials selected for coating systems for each type of surface shall be the product of a single manufacturer.

2.02 MATERIALS

A. Products specified are manufactured by paint companies identified with manufacturers listed in Paragraph 2.01.

B. Select primary products of the coating system from the products of a single manufacturer.

C. Secondary products not specified by name and required for the job, such as shellac, thinners, putty, shall be "best grade" or "first line" products of a reputable manufacturer.

D. Coatings

1. Ready mixed, except field catalyzed coatings; tile-like gloss finish.
2. Process pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating.
3. Good flow and brushing properties; capable of drying or curing free of streaks or sags.

E. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.

F. SPECIALTY COATINGS: FIRETEX FX5120 – Waterbased Intumescent Coating; Applied to new steel beams and joists within apparatus bay to provide a 1-hour rating.

G. Epoxy Floor Paint:

1. Basis of Design: Sherwin-Williams: AquArmor™ S Slurry System; 1/8" Slurry system

2.03 FINISHES

A. Refer to schedule at end of Section for surface finish schedule.

B. In addition to the finish systems specified in the painting schedule, materials shall be lead-free.

2.04 TINTING AND MIXING

A. Job mixing or tinting may be done only when approved by the Architect.

2.05 COLORS AND PATTERNS

A. Colors shall be as selected by the Architect from the manufacturer’s standard range of colors.

B. The Architect reserves the right to select, allocate and vary colors on different surfaces throughout the building.

PART 3 EXECUTION

3.01 INSPECTION

A. Verify that surfaces or substrate conditions are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

C. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is below the following maximums:

1. GYPSUM WALLBOARD: 12 percent.
2. INTERIOR WOOD: 15 percent, measured in accordance with ASTM D2016.

D. Beginning of installation means acceptance of surfaces or substrate.

3.02 PREPARATION

A. Remove electrical plates, hardware, light fixtures trim and fittings prior to preparing surfaces or finishing.

B. Correct minor defects and clean surfaces which affect work of this Section.

C. Shellac and seal marks which may bleed through surface finishes.

D. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow the surface to dry.

E. Asphalt or Bituminous Surfaces Scheduled for Paint Finish: Remove foreign particles to permit adhesion of finishing materials. Apply compatible sealer or primer.

F. Gypsum Board Surfaces: Latex fill minor defects. Spot prime defects after repair

G. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.

H. Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove dirt, loose mortar, scale, salt or alkali powder and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weather corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow it to dry.

I. Uncoated Steel and Iron Surfaces: Remove grease, scale, dirt and rust. Where heavy coatings of scales are evident, remove by wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring welded joints, bolts and nuts are similarly cleaned. Spot prime paint after repairs

J. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.

3.03 PROTECTION

A. Protect elements surrounding the work of this Section from damage or disfiguration.

B. Repair damage to other surfaces caused by the work of this Section.

C. Furnish drop cloths, shields, and protective methods to prevent spray or droppings from disfiguring other surfaces.

D. Remove empty paint containers from the site.

3.04 APPLICATION

A. Apply products in accordance with manufacturer's instructions.

B. Do not apply finishes to surfaces that are not dry.

C. Apply each coat to the uniform finish.

D. Apply each coat of paint slightly darker than the preceding coat unless otherwise approved.

E. Sand lightly between coats to achieve the required finish.

F. Allow the applied coat to dry before the next coat is applied.

G. Where clear finishes are required, tint fillers shall match wood. Work fillers into the grain before set. Wipe excess from surface.

H. Prime back surfaces of interior and exterior woodwork with primer paint.

I. Prime back surfaces of interior woodwork scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with mineral spirits.

3.05 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

A. Paint shop-primed equipment.

B. Remove unfinished louvers, grilles, covers and access panels on mechanical and electrical components and paint separately.

C. Prime and paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports except where items are prefinished.

D. Replace identification markings on mechanical or electrical equipment when painted accidentally.

E. Paint interior surfaces of air ducts, and convector and baseboard heating cabinets that are visible through grilles and louvers with one coat of flat black paint, to limit of sight line. Paint dampers exposed behind louvers, grilles and convector and baseboard cabinets to match face panels.

F. Paint exposed conduit and electrical equipment occurring in finished areas.

G. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.

H. Replace electrical plates, hardware, light fixture trim and fittings removed prior to finishing.

3.06 CLEANING

A. As Work proceeds, promptly remove paint where spilled, splashed or spattered.

B. During progress of Work maintain premises free of unnecessary accumulation of tools, equipment, surplus materials, and debris.

C. Collect cotton waste, cloths and material which may constitute a fire hazard, place it in closed metal containers and remove daily from site.

D. Touch up and restore finish where damaged. Do not mar the surface of item being cleaned.

E. Leave storage space clean and in condition required for equivalent spaces in project.

3.07 SCHEDULE - INTERIOR SURFACES

A. STEEL - FACTORY PRIMED

1. 1ST FINISH COAT: WATERBASED INTUMESCENT COATING
2. 2ND FINISH COAT: URETHANE ALKYD GLOSS ENAMEL

B. WOOD

1. FILLER COAT: ALKYD PRIME SEALER
2. 1ST FINISH COAT: URETHANE ALKYD GLOSS ENAMEL
3. 2ND FINISH COAT: URETHANE ALKYD GLOSS ENAMEL

C. GYPSUM BOARD WALLS

1. PRIME COAT: ALKYD PRIMER SEAL
2. 1ST FINISH COAT: INTERIOR LATEX EG-SHEL
3. 2ND FINISH COAT: INTERIOR LATEX EG-SHEL

D. GYPSUM BOARD CEILINGS

1. PRIME COAT: ALKYD PRIME SEALER
2. 1ST FINISH COAT: LATEX FLAT
3. 2ND FINISH COAT: LATEX FLAT

END OF SECTION 09 91 00

SECTION 26 05 05
SELECTIVE DEMOLITION FOR ELECTRICAL

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Electrical demolition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that abandoned wiring and equipment serve only abandoned facilities.

B. Beginning of demolition means installer accepts existing conditions.

3.02 PREPARATION

A. Disconnect electrical systems in walls, floors, and ceilings to be removed.

B. Provide temporary wiring and connections to maintain existing systems in service during construction. No live work permitted.

C. Existing Fire Alarm System: Maintain existing system in service until new system is accepted. Disable system only to make switchovers and connections. Minimize outage duration.

3.03 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

A. Remove, relocate, and extend existing installations to accommodate new construction.

B. Remove abandoned wiring to source of supply.

C. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.

D. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets that are not removed.

E. Repair adjacent construction and finishes damaged during demolition and extension work.

F. Maintain access to existing electrical installations that remain active. Modify installation or provide access panel as appropriate.

3.04 CLEANING AND REPAIR

A. Clean and repair existing materials and equipment that remain or that are to be reused.

B. Panelboards: Clean exposed surfaces and check tightness of electrical connections. Provide closure plates for vacant positions. Provide typed circuit directory showing revised circuiting arrangement.

C. Luminaires: Remove existing luminaires for cleaning. Use mild detergent to clean all exterior and interior surfaces; rinse with clean water and wipe dry.

END OF SECTION

SECTION 26 05 19
LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Single conductor building wire.

B. Metal-clad cable.

C. Wiring connectors.

D. Electrical tape.

E. Cable ties.

1.02 RELATED REQUIREMENTS

A. Section 07 84 00 - Firestopping.

1.03 REFERENCE STANDARDS

A. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire; 2013 (Reapproved 2024).

B. ASTM B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft; 2023.

C. ASTM B33 - Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes; 2010, with Editorial Revision (2020).

D. ASTM B787/B787M - Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation; 2004 (Reapproved 2020).

E. ASTM D3005 - Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape; 2024.

F. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.

G. NECA 120 - Standard for Installing Armored Cable (AC) and Type Metal-Clad (MC) Cable; 2018.

H. NEMA WC 70 - Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy; 2021.

I. NETA ATS - Standard for Acceptance Testing Specifications for Electrical Power Equipment And Systems; 2025.

J. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

K. UL 44 - Thermoset-Insulated Wires and Cables; Current Edition, Including All Revisions.

L. UL 83 - Thermoplastic-Insulated Wires and Cables; Current Edition, Including All Revisions.

M. UL 267 - Outline of Investigation for Wire-Pulling Compounds; Current Edition, Including All Revisions.

N. UL 486A-486B - Wire Connectors; Current Edition, Including All Revisions.

O. UL 486C - Splicing Wire Connectors; Current Edition, Including All Revisions.

P. UL 486D - Sealed Wire Connector Systems; Current Edition, Including All Revisions.

Q. UL 510 - Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape; Current Edition, Including All Revisions.

R. UL 1569 - Metal-Clad Cables; Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for conductors and cables, including detailed information on materials, construction, ratings, listings, and available sizes, configurations, and stranding.

1.05 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store conductors and cables in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 CONDUCTOR AND CABLE APPLICATIONS

A. Do not use conductors and cables for applications other than as permitted by NFPA 70 and product listing.

B. Provide single conductor building wire installed in suitable raceway unless otherwise indicated, permitted, or required.

2.02 CONDUCTOR AND CABLE GENERAL REQUIREMENTS

A. Provide products that comply with requirements of NFPA 70.

B. Provide products listed, classified, and labeled as suitable for the purpose intended.

C. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.

D. Comply with NEMA WC 70.

E. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.

F. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.

G. Conductors and Cables Installed Exposed in Spaces Used for Environmental Air (only where specifically permitted): Plenum rated, listed and labeled as suitable for use in return air plenums.

H. Conductor Material:
   1. Provide copper conductors only. Aluminum conductors are not acceptable for this project. Conductor sizes indicated are based on copper.
   2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
   3. Tinned Copper Conductors: Comply with ASTM B33.

I. Conductor Color Coding:
   1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
   2. Color Coding Method: Integrally colored insulation.
   3. Color Code:
      a. 480Y/277 V, 3 Phase, 4 Wire System:
         1) Phase A: Brown.
         2) Phase B: Orange.
         3) Phase C: Yellow.
         4) Neutral/Grounded: Gray.
      b. 208Y/120 V, 3 Phase, 4 Wire System:
         1) Phase A: Black.
         2) Phase B: Red.
         3) Phase C: Blue.
         4) Neutral/Grounded: White.
      c. Equipment Ground, All Systems: Green.

2.03 SINGLE CONDUCTOR BUILDING WIRE

A. Manufacturers:
   1. Copper Building Wire:
      a. Cerro Wire LLC: www.cerrowire.com/#sle.
      b. Encore Wire Corporation: www.encorewire.com/#sle.
      c. General Cable Technologies Corporation: www.generalcable.com/#sle.
      d. Service Wire Co: www.servicewire.com/#sle.
      e. Southwire Company: www.southwire.com/#sle.

B. Description: Single conductor insulated wire.

C. Conductor Stranding:
   1. Feeders and Branch Circuits:
      a. Size 10 AWG and Smaller: Solid.
      b. Size 8 AWG and Larger: Stranded.

D. Insulation Voltage Rating: 600 V.

E. Insulation:
   1. Copper Building Wire: Type THHN/THWN or THHN/THWN-2, except as indicated below.

2.04 METAL-CLAD CABLE

A. Manufacturers:
   1. AFC Cable Systems Inc: www.afcweb.com/#sle.
   2. Encore Wire Corporation: www.encorewire.com/#sle.
   3. Service Wire Co: www.servicewire.com/#sle.
   4. Southwire Company: www.southwire.com/#sle.

B. Description: NFPA 70, Type MC cable listed and labeled as complying with UL 1569, and listed for use in classified firestop systems to be used.

C. Conductor Stranding:
   1. Size 10 AWG and Smaller: Solid.
   2. Size 8 AWG and Larger: Stranded.

D. Insulation Voltage Rating: 600 V.

E. Insulation: Type THHN, THHN/THWN, or THHN/THWN-2.

F. Grounding: Full-size integral equipment grounding conductor.

G. Armor: Steel, interlocked tape.

2.05 WIRING CONNECTORS

A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.

B. Wiring Connectors for Splices and Taps:
   1. Copper Conductors Size 8 AWG and Smaller: Use twist-on insulated spring connectors.
   2. Copper Conductors Size 6 AWG and Larger: Use mechanical connectors or compression connectors.

C. Twist-on Insulated Spring Connectors: Rated 600 V, 221 degrees F (105 degrees C) for standard applications and 302 degrees F (150 degrees C) for high temperature applications; pre-filled with sealant and listed as complying with UL 486D for damp and wet locations.

D. Mechanical Connectors: Provide bolted type or set-screw type.

E. Compression Connectors: Provide circumferential type or hex type crimp configuration.

2.06 ACCESSORIES

A. Electrical Tape:

1. Vinyl Insulating Electrical Tape: Complying with ASTM D3005 and listed as complying with UL 510; minimum thickness of 7 mil (0.18 mm); resistant to abrasion, corrosion, and sunlight; conformable for application down to 0 degrees F (-18 degrees C) and suitable for continuous temperature environment up to 221 degrees F (105 degrees C).

B. Wire Pulling Lubricant:
   1. Listed and labeled as complying with UL 267.
   2. Suitable for use with conductors/cables and associated insulation/jackets to be installed.
   3. Suitable for use at installation temperature.

C. Cable Ties: Material and tensile strength rating suitable for application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that interior of building has been protected from weather.

B. Verify that work likely to damage wire and cable has been completed.

C. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.

D. Verify that field measurements are as indicated.

E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

A. Clean raceways thoroughly to remove foreign materials before installing conductors and cables.

3.03 INSTALLATION

A. Circuiting Requirements:
   1. Unless dimensioned, circuit routing indicated is diagrammatic.
   2. When circuit destination is indicated without specific routing, determine exact routing required.
   3. Arrange circuiting to minimize splices.
   4. Include circuit lengths required to install connected devices within 10 ft (3.0 m) of location indicated.
   5. Maintain separation of Class 1, Class 2, and Class 3 remote-control, signaling, and power-limited circuits in accordance with NFPA 70.
   6. Maintain separation of wiring for emergency systems in accordance with NFPA 70.

B. Install products in accordance with manufacturer's instructions.

C. Perform work in accordance with NECA 1 (general workmanship).

D. Install metal-clad cable (Type MC) in accordance with NECA 120.

E. Installation in Raceway:
   1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
   2. Pull all conductors and cables together into raceway at same time.
   3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
   4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.

F. Paralleled Conductors: Install conductors of the same length and terminate in the same manner.

G. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.

1. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conductors and cables to lay on ceiling tiles.

H. Terminate cables using suitable fittings.
   1. Metal-Clad Cable (Type MC):
      a. Use listed fittings.
      b. Cut cable armor only using specialized tools to prevent damaging conductors or insulation. Do not use hacksaw or wire cutters to cut armor.

I. Install conductors with a minimum of 12 inches (300 mm) of slack at each outlet.

J. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.

K. Group or otherwise identify neutral/grounded conductors with associated ungrounded conductors inside enclosures in accordance with NFPA 70.

L. Make wiring connections using specified wiring connectors.
   1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.
   2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
   3. Do not remove conductor strands to facilitate insertion into connector.
   4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminates. Do not use wire brush on plated connector surfaces.
   5. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
   6. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.

M. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.

N. Insulate ends of spare conductors using vinyl insulating electrical tape.

O. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 00.

P. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

3.04 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. Inspect and test in accordance with NETA ATS, except Section 4.

C. Perform inspections and tests listed in NETA ATS, Section 7.3.2. The insulation resistance test is required for all conductors. The resistance test for parallel conductors listed as optional is not required.

D. Correct deficiencies and replace damaged or defective conductors and cables.

END OF SECTION

SECTION 26 05 26
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Grounding and bonding requirements.

B. Conductors for grounding and bonding.

C. Connectors for grounding and bonding.

1.02 RELATED REQUIREMENTS

A. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables: Additional requirements for conductors for grounding and bonding, including conductor color coding.

B. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.

B. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

C. UL 467 - Grounding and Bonding Equipment; Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittals procedures.

1.05 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

PART 2 PRODUCTS

2.01 GROUNDING AND BONDING REQUIREMENTS

A. Do not use products for applications other than as permitted by NFPA 70 and product listing.

B. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.

C. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

D. Bonding and Equipment Grounding:

1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
4. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
5. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.
6. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.

2.02 GROUNDING AND BONDING COMPONENTS

A. General Requirements:
   1. Provide products listed, classified, and labeled as suitable for the purpose intended.
   2. Provide products listed and labeled as complying with UL 467 where applicable.

B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 26 05 26:
   1. Use insulated copper conductors unless otherwise indicated.
      a. Exceptions:
         1) Use bare copper conductors where installed underground in direct contact with earth.
         2) Use bare copper conductors where directly encased in concrete (not in raceway).

C. Connectors for Grounding and Bonding:
   1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
   2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
   3. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that work likely to damage grounding and bonding system components has been completed.

B. Verify that field measurements are as indicated.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Make grounding and bonding connections using specified connectors.
   1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
   2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
   3. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
   4. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
   5. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.

D. Identify grounding and bonding system components in accordance with Section 26 05 53.

END OF SECTION

SECTION 26 05 29
HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Support and attachment requirements and components for equipment, conduit, cable, boxes, and other electrical work.

1.02 REFERENCE STANDARDS

A. MFMA-4 - Metal Framing Standards Publication; 2004.

B. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.

C. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate sizes and arrangement of supports and bases with actual equipment and components to be installed.
   2. Coordinate work to provide additional framing and materials required for installation.
   3. Coordinate compatibility of support and attachment components with mounting surfaces at installed locations.
   4. Coordinate arrangement of supports with ductwork, piping, equipment and other potential conflicts.
   5. Notify Architect of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for channel/strut framing systems, nonpenetrating rooftop supports, and post-installed concrete/masonry anchors.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 SUPPORT AND ATTACHMENT COMPONENTS

A. General Requirements:
   1. Comply with the following. Where requirements differ, comply with most stringent.
      a. NFPA 70.
      b. Requirements of authorities having jurisdiction.
   2. Provide required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for complete installation of electrical work.
   3. Provide products listed, classified, and labeled as suitable for purpose intended, where applicable.
   4. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for load to be supported. Include consideration for vibration, equipment operation, and shock loads where applicable.
   5. Do not use products for applications other than as permitted by NFPA 70 and product listing.
   6. Do not use wire, chain, perforated pipe strap, or wood for permanent supports unless specifically indicated or permitted.

B. Conduit and Cable Supports: Straps and clamps suitable for conduit or cable to be supported.

1. Conduit Straps: One-hole or two-hole type; steel or malleable iron.
2. Conduit Clamps: Bolted type unless otherwise indicated.

C. Outlet Box Supports: Hangers and brackets suitable for boxes to be supported.

D. Metal Channel/Strut Framing Systems:
1. Description: Factory-fabricated, continuous-slot, metal channel/strut and associated fittings, accessories, and hardware required for field assembly of supports.
2. Comply with MFMA-4.

E. Hanger Rods: Threaded, zinc-plated steel unless otherwise indicated.

F. Anchors and Fasteners:
1. Unless otherwise indicated and where not otherwise restricted, use anchor and fastener types indicated for specified applications.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that mounting surfaces are ready to receive support and attachment components.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install hangers and supports in accordance with NECA 1.

C. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.

D. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.

E. Unless specifically indicated or approved by Architect, do not provide support from roof deck.

F. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.

G. Equipment Support and Attachment:
1. Use metal, fabricated supports or supports assembled from metal channel/strut to support equipment as required.
2. Use metal channel/strut secured to studs to support equipment surface mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
3. Use metal channel/strut to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
4. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.

H. Secure fasteners in accordance with manufacturer's recommended torque settings.

I. Remove temporary supports.

3.03 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Inspect support and attachment components for damage and defects.

C. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.

D. Correct deficiencies and replace damaged or defective support and attachment components.

END OF SECTION

SECTION 26 05 33.13
CONDUIT FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Galvanized steel rigid metal conduit (RMC).
B. Stainless steel rigid metal conduit (RMC).
C. Galvanized steel intermediate metal conduit (IMC).
D. Stainless steel intermediate metal conduit (IMC).
E. Galvanized steel electrical metallic tubing (EMT).
F. Stainless steel electrical metallic tubing (EMT).
G. Liquidtight flexible nonmetallic conduit (LFNC).

1.02 RELATED REQUIREMENTS

A. Section 07 84 00 - Firestopping.
B. Section 26 05 26 - Grounding and Bonding for Electrical Systems.
C. Section 26 05 29 - Hangers and Supports for Electrical Systems.

1.03 REFERENCE STANDARDS

A. ANSI C80.1 - American National Standard for Electrical Rigid Steel Conduit (ERSC); 2025.
B. ANSI C80.3 - American National Standard for Electrical Metallic Tubing -- Steel (EMT-S); 2020.
C. ANSI C80.6 - American National Standard for Electrical Intermediate Metal Conduit; 2025.
D. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.
E. NECA 101 - Standard for Installing Steel Conduits (Rigid, IMC, EMT); 2020.
F. NECA 111 - Standard for Installing Nonmetallic Raceways (RNC, ENT, LFNC); 2025.
G. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2014.
H. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
I. UL 6 - Electrical Rigid Metal Conduit-Steel; Current Edition, Including All Revisions.
J. UL 6A - Electrical Rigid Metal Conduit-Aluminum, Red Brass, and Stainless Steel; Current Edition, Including All Revisions.
K. UL 514B - Conduit, Tubing, and Cable Fittings; Current Edition, Including All Revisions.
L. UL 797 - Electrical Metallic Tubing-Steel; Current Edition, Including All Revisions.
M. UL 797A - Electrical Metallic Tubing - Aluminum and Stainless Steel; Current Edition, Including All Revisions.
N. UL 1242 - Electrical Intermediate Metal Conduit-Steel; Current Edition, Including All Revisions.
O. UL 1660 - Liquid-Tight Flexible Nonmetallic Conduit; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate minimum sizes of conduits with actual type and quantity of conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
   2. Coordinate arrangement of conduits with structural members, ductwork, piping, equipment, and other potential conflicts.
   3. Verify exact conduit termination locations required for boxes, enclosures, and equipment.
   4. Coordinate work to provide roof penetrations that preserve integrity of roofing system and do not void roof warranty.

5. Notify Architect of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

B. Sequencing:
   1. Do not begin installation of conductors and cables until installation of conduit between termination points is complete.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittals procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for conduits and fittings.

1.06 QUALITY ASSURANCE

1.07 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store conduit and fittings in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 CONDUIT APPLICATIONS

A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70, manufacturer's instructions, and product listing.

B. Concealed Above Accessible Ceilings: Use galvanized steel rigid metal conduit (RMC), stainless steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), stainless steel intermediate metal conduit (IMC), galvanized steel electrical metallic tubing (EMT), or stainless steel electrical metallic tubing (EMT).

C. Exposed, Interior, Not Subject to Physical Damage: Use galvanized steel rigid metal conduit (RMC), stainless steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), stainless steel intermediate metal conduit (IMC), galvanized steel electrical metallic tubing (EMT), or stainless steel electrical metallic tubing (EMT).

D. Exposed, Exterior, Not Subject to Severe Physical Damage: Use galvanized steel rigid metal conduit (RMC), stainless steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), stainless steel intermediate metal conduit (IMC), galvanized steel electrical metallic tubing (EMT), or stainless steel electrical metallic tubing (EMT).

2.02 CONDUIT - GENERAL REQUIREMENTS

A. Comply with NFPA 70.

B. Provide conduit, fittings, supports, and accessories required for complete raceway system.

C. Provide products listed, classified, and labeled as suitable for purpose intended.

D. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

2.03 GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

A. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6.

B. Fittings:
   1. Nonhazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B or UL 6.
   2. Material: Use steel or malleable iron.
   3. Connectors and Couplings: Use threaded type fittings only. Threadless fittings, including set screw and compression/gland types, are not permitted.

2.04 STAINLESS STEEL RIGID METAL CONDUIT (RMC)

A. Description: NFPA 70, Type RMC stainless steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6A.

B. Fittings:
   1. Nonhazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B or UL 6A.
   2. Material: Use stainless steel with corrosion resistance equivalent to conduit.
   3. Connectors and Couplings: Use threaded type fittings only. Threadless fittings, including set screw and compression/gland types, are not permitted.

2.05 GALVANIZED STEEL INTERMEDIATE METAL CONDUIT (IMC)

A. Description: NFPA 70, Type IMC galvanized steel intermediate metal conduit complying with ANSI C80.6 and listed and labeled as complying with UL 1242.

B. Fittings:
   1. Nonhazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B or UL 1242.
   2. Material: Use steel or malleable iron.
   3. Connectors and Couplings: Use threaded type fittings only. Threadless fittings, including set screw and compression/gland types, are not permitted.

2.06 STAINLESS STEEL INTERMEDIATE METAL CONDUIT (IMC)

A. Description: NFPA 70, Type IMC galvanized steel intermediate metal conduit complying with ANSI C80.6 and listed and labeled as complying with UL 1242.

B. Fittings:
   1. Nonhazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B or UL 1242.

2.07 GALVANIZED STEEL ELECTRICAL METALLIC TUBING (EMT)

A. Description: NFPA 70, Type EMT galvanized steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797.

B. Fittings:
   1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
   2. Material: Use steel or malleable iron.
   3. Connectors and Couplings: Use compression/gland or set-screw type.
      a. Do not use indenter type connectors and couplings.

2.08 STAINLESS STEEL ELECTRICAL METALLIC TUBING (EMT)

A. Description: NFPA 70, Type EMT stainless steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797A.

B. Fittings:
   1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
   2. Connectors and Couplings: Use compression/gland or set-screw type.

2.09 LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT (LFNC)

A. Description: NFPA 70, Type LFNC liquidtight flexible nonmetallic conduit listed and labeled as complying with UL 1660.

B. Fittings:
   1. Manufacturer: Same as manufacturer of conduit to be connected.
   2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B; suitable for type of conduit to be connected.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install conduit in accordance with NECA 1.

C. Galvanized Steel Rigid Metal Conduit (RMC): Install in accordance with NECA 101.

D. Intermediate Metal Conduit (IMC): Install in accordance with NECA 101.

E. Liquidtight Flexible Nonmetallic Conduit (LFNC): Install in accordance with NECA 111.

F. Conduit Routing:
   1. Unless dimensioned, conduit routing indicated is diagrammatic.
   2. When conduit destination is indicated without specific routing, determine exact routing required.
   3. Conceal conduits unless specifically indicated to be exposed.
   4. Conduits in the following areas may be exposed, unless otherwise indicated:
   5. Arrange conduit to provide no more than equivalent of four 90-degree bends between pull points.
   6. Arrange conduit to provide no more than 150 feet (46 m) between pull points.

G. Conduit Support:
   1. Secure and support conduits in accordance with NFPA 70 using suitable supports and methods approved by authorities having jurisdiction; see Section 26 05 29.
   2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.

H. Connections and Terminations:
   1. Provide insulating bushings, insulated throats, or listed metal fittings with smooth, rounded edges at conduit terminations to protect conductors.
   2. Secure joints and connections to provide mechanical strength and electrical continuity.

I. Penetrations:
   1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
   2. Make penetrations perpendicular to surfaces unless otherwise indicated.
   3. Provide sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
   4. Install firestopping to preserve fire resistance rating of partitions and other elements; see Section 07 84 00.

J. Provide grounding and bonding; see Section 26 05 26.

3.02 CLEANING

A. Clean interior of conduits to remove moisture and foreign matter.

3.03 PROTECTION

A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of conductors.

END OF SECTION

SECTION 26 05 33.16
BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Outlet and device boxes up to 100 cubic inches (1,650 cu cm), including those used as junction and pull boxes.

B. Cabinets and enclosures, including junction and pull boxes larger than 100 cubic inches (1,650 cu cm).

1.02 RELATED REQUIREMENTS

A. Section 08 31 00 - Access Doors and Panels: Panels for maintaining access to concealed boxes.

B. Section 26 05 29 - Hangers and Supports for Electrical Systems.

C. Section 26 27 26 - Wiring Devices:
   1. Wall plates.

1.03 REFERENCE STANDARDS

A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.

B. NECA 130 - Standard for Installing and Maintaining Wiring Devices; 2016.

C. NEMA EN 10250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2024.

D. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2014.

E. NEMA OS 1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports; 2013 (Reaffirmed 2020).

F. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

G. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.

H. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.

I. UL 508A - Industrial Control Panels; Current Edition, Including All Revisions.

J. UL 514A - Metallic Outlet Boxes; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
   2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
   3. Coordinate minimum sizes of boxes with the actual installed arrangement of conductors, clamps, support fittings, and devices, calculated according to NFPA 70.
   4. Coordinate minimum sizes of pull boxes with the actual installed arrangement of connected conduits, calculated according to NFPA 70.
   5. Coordinate the placement of boxes with millwork, furniture, devices, equipment, etc. installed under other sections or by others.
   6. Coordinate the work with other trades to preserve insulation integrity.
   7. Coordinate the work with other trades to provide walls suitable for installation of flush-mounted boxes where indicated.

8. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for cabinets and enclosures, boxes for hazardous (classified) locations, floor boxes, and underground boxes/enclosures.

1.06 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

PART 2 PRODUCTS

2.01 BOXES

A. General Requirements:
   1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
   2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
   3. Provide products listed, classified, and labeled as suitable for the purpose intended.
   4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
   5. Provide grounding terminals within boxes where equipment grounding conductors terminate.

B. Outlet and Device Boxes Up to 100 cubic inches (1,650 cu cm), Including Those Used as Junction and Pull Boxes:
   1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
   2. Use cast iron boxes or cast aluminum boxes for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
   3. Use suitable concrete type boxes where flush-mounted in concrete.
   4. Use suitable masonry type boxes where flush-mounted in masonry walls.
   5. Use raised covers suitable for the type of wall construction and device configuration where required.
   6. Use shallow boxes where required by the type of wall construction.
   7. Do not use "through-wall" boxes designed for access from both sides of wall.
   8. Sheet-Steel Boxes: Comply with NEMA OS 1, and list and label as complying with UL 514A.
   9. Cast Metal Boxes: Comply with NEMA FB 1, and list and label as complying with UL 514A; furnish with threaded hubs.
   10. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
   11. Boxes for Ganged Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes unless specifically indicated or permitted.
   12. Wall Plates: Comply with Section 26 27 26.

C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches (1,650 cu cm):
   1. Comply with NEMA EN 10250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
   2. NEMA EN 10250 Environment Type, Unless Otherwise Indicated:
   3. Junction and Pull Boxes Larger Than 100 cubic inches (1,650 cu cm):
      a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install boxes in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.

C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.

D. Box Locations:
   1. Locate boxes to be accessible. Provide access panels in accordance with Section 08 31 00 as required where approved by the Architect.

E. Box Supports:
   1. Secure and support boxes in accordance with NFPA 70 and Section 26 05 29 using suitable supports and methods approved by the authority having jurisdiction.
   2. Provide independent support from building structure except for cast metal boxes (other than boxes used for fixture support) supported by threaded conduit connections in accordance with NFPA 70. Do not provide support from piping, ductwork, or other systems.

F. Install boxes plumb and level.

G. Flush-Mounted Boxes:
   1. Install boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that front edge of box or associated raised cover is not set back from finished surface more than 1/4 inch (6 mm) or does not project beyond finished surface.
   2. Install boxes in combustible materials such as wood so that front edge of box or associated raised cover is flush with finished surface.
   3. Repair rough openings around boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that there are no gaps or open spaces greater than 1/8 inch (3 mm) at the edge of the box.

H. Install boxes as required to preserve insulation integrity.

I. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.

J. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 00.

K. Close unused box openings.

L. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.

M. Provide grounding and bonding in accordance with Section 26 05 26.

3.02 CLEANING

A. Clean interior of boxes to remove dirt, debris, plaster and other foreign material.

3.03 PROTECTION

A. Immediately after installation, protect boxes from entry of moisture and foreign material until ready for installation of conductors.

END OF SECTION

SECTION 26 05 53
IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Electrical identification requirements.

B. Identification nameplates and labels.

C. Wire and cable markers.

1.02 RELATED REQUIREMENTS

A. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables: Color coding for power conductors and cables 600 V and less; vinyl color coding electrical tape.

B. Section 26 27 26 - Wiring Devices: Device and wallplate finishes; factory pre-marked wallplates.

C. Section 27 10 00 - Structured Cabling: Identification for communications cabling and devices.

1.03 REFERENCE STANDARDS

A. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

B. UL 969 - Marking and Labeling Systems; Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittals procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product.

1.05 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

PART 2 PRODUCTS

2.01 IDENTIFICATION REQUIREMENTS

A. Identification for Equipment:
   1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
      a. Time Switches:
         1) Identify load(s) served and associated circuits controlled. Include location.

B. Identification for Conductors and Cables:
   1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 05 19.
   2. Use identification nameplate or identification label to identify color code for ungrounded and grounded power conductors inside door or enclosure at each piece of feeder or branch-circuit distribution equipment when premises has feeders or branch circuits served by more than one nominal voltage system.

C. Identification for Devices:
   1. Identification for Communications Devices: Comply with Section 27 10 00.
   2. Wiring Device and Wallplate Finishes: Comply with Section 26 27 26.
   3. Use identification label to identify fire alarm system devices.
   4. Use identification label or engraved wallplate to identify serving branch circuit for all receptacles.

2.02 IDENTIFICATION NAMEPLATES AND LABELS

A. Identification Nameplates:
   1. Materials:
      a. Indoor Clean, Dry Locations: Use plastic nameplates.

2. Plastic Nameplates: Two-layer or three-layer laminated acrylic or electrically non-conductive phenolic with beveled edges; minimum thickness of 1/16 inch (1.6 mm); engraved text.
3. Mounting Holes for Mechanical Fasteners: Two, centered on sides for sizes up to 1 inch (25 mm) high; Four, located at corners for larger sizes.

B. Identification Labels:
1. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
2. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.

C. Format for Receptacle Identification:
1. Minimum Size: 3/8 inch (10 mm) by 1.5 inches (38 mm).
2. Legend: Power source and circuit number or other designation indicated.
3. Text: All capitalized unless otherwise indicated.
4. Minimum Text Height: 3/16 inch (5 mm).
5. Color: Black text on clear background.

D. Format for Fire Alarm Device Identification:
1. Minimum Size: 3/8 inch (10 mm) by 1.5 inches (38 mm).
2. Legend: Designation indicated and device zone or address.
3. Text: All capitalized unless otherwise indicated.
4. Minimum Text Height: 3/16 inch (5 mm).
5. Color: Red text on white background.

2.03 WIRE AND CABLE MARKERS

A. Markers for Conductors and Cables: Use wrap-around self-adhesive vinyl cloth, wrap-around self-adhesive vinyl self-laminating, heat-shrink sleeve, plastic sleeve, plastic clip-on, or vinyl split sleeve type markers suitable for the conductor or cable to be identified.

B. Markers for Conductor and Cable Bundles: Use plastic marker tags secured by nylon cable ties.

C. Legend: Power source and circuit number or other designation indicated.

D. Text: Use factory pre-printed or machine-printed text, all capitalized unless otherwise indicated.

E. Minimum Text Height: 1/8 inch (3 mm).

F. Color: Black text on white background unless otherwise indicated.

2.04 WARNING SIGNS AND LABELS

A. Comply with ANSI Z535.2 or ANSI Z535.4 as applicable.

B. Warning Signs:
1. Materials:
2. Minimum Size: 7 by 10 inches (178 by 254 mm) unless otherwise indicated.

C. Warning Labels:
1. Materials: Use factory pre-printed or machine-printed self-adhesive polyester or self-adhesive vinyl labels; UV, chemical, water, heat, and abrasion resistant; produced using materials recognized to UL 969.
2. Machine-Printed Labels: Use thermal transfer process printing machines and accessories recommended by label manufacturer.
3. Minimum Size: 2 by 4 inches (51 mm by 102 mm) unless otherwise indicated.

PART 3 EXECUTION

3.01 PREPARATION

A. Clean surfaces to receive adhesive products according to manufacturer's instructions.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
   1. Surface-Mounted Equipment: Enclosure front.
   2. Flush-Mounted Equipment: Inside of equipment door.
   3. Interior Components: Legible from the point of access.
   4. Conductors and Cables: Legible from the point of access.
   5. Devices: Outside face of cover.

C. Install identification products centered, level, and parallel with lines of item being identified.

D. Secure nameplates to exterior surfaces of enclosures using stainless steel screws and to interior surfaces using self-adhesive backing or epoxy cement.

E. Install self-adhesive labels and markers to achieve maximum adhesion, with no bubbles or wrinkles and edges properly sealed.

END OF SECTION

SECTION 26 27 26
WIRING DEVICES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Wall dimmers.

B. Receptacles.

C. Wall plates and covers.

D. Poke-through assemblies.

1.02 RELATED REQUIREMENTS

A. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables: Manufactured wiring systems for use with access floor boxes with compatible pre-wired connectors.

B. Section 26 05 26 - Grounding and Bonding for Electrical Systems.

C. Section 26 05 33.16 - Boxes for Electrical Systems.

D. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.

E. Section 26 05 83 - Wiring Connections: Cords and plugs for equipment.

F. Section 26 09 23 - Lighting Control Devices: Devices for automatic control of lighting, including wall station RF paddles.

G. Section 27 10 00 - Structured Cabling: Voice and data jacks.

1.03 REFERENCE STANDARDS

A. FS W-C-596 - Connector, Electrical, Power, General Specification for; 2014h (Validated 2022).

B. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.

C. NECA 130 - Standard for Installing and Maintaining Wiring Devices; 2016.

D. NEMA WD 1 - General Color Requirements for Wiring Devices; 1999 (Reaffirmed 2020).

E. NEMA WD 6 - Wiring Devices - Dimensional Specifications; 2021.

F. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

G. UL 498 - Attachment Plugs and Receptacles; Current Edition, Including All Revisions.

H. UL 514D - Cover Plates for Flush-Mounted Wiring Devices; Current Edition, Including All Revisions.

I. UL 1472 - Solid-State Dimming Controls; Current Edition, Including All Revisions.

J. UL 1917 - Solid-State Fan Speed Controls; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Coordinate the placement of outlet boxes with millwork, furniture, equipment, etc. installed under other sections or by others.
2. Coordinate wiring device ratings and configurations with the electrical requirements of actual equipment to be installed.
3. Coordinate the installation and preparation of uneven surfaces, such as split face block, to provide suitable surface for installation of wiring devices.
4. Coordinate the core drilling of holes for poke-through assemblies with the work covered under other sections.
5. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.

1.06 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Products: Listed, classified, and labeled as suitable for the purpose intended.

1.07 DELIVERY, STORAGE, AND PROTECTION

A. Store in a clean, dry space in original manufacturer's packaging until ready for installation.

PART 2 PRODUCTS

2.01 WIRING DEVICES - GENERAL REQUIREMENTS

A. Provide wiring devices suitable for intended use with ratings adequate for load served.

2.02 WALL DIMMERS - MATCH EXISTING

A. Manufacturers: Refer to plans for make/model of switch.

B. General Requirements: Solid-state with continuous full-range even control following square law dimming curve, integral radio frequency interference filtering, power failure preset memory, air gap switch accessible without removing wall plate, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 1472; types and ratings suitable for load controlled as indicated on the drawings.

2.03 RECEPTACLES

A. Manufacturers:
   1. Hubbell Incorporated: www.hubbell.com/#sle.
   2. Leviton Manufacturing Company, Inc: www.leviton.com/#sle.
   3. Lutron Electronics Company, Inc; Designer Style: www.lutron.com/#sle.
   4. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us/#sle.

B. General Requirements: Self-grounding, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 498, and where applicable, FS W-C-596; types as indicated on the drawings.
   1. Wiring Provisions: Terminal screws for side wiring or screw actuated binding clamp for back wiring with separate ground terminal screw.
   2. NEMA configurations specified are according to NEMA WD 6.

C. Convenience Receptacles:
   1. Automatically Controlled Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R; controlled receptacle marking on device face per NFPA 70; single or duplex as indicated on the drawings.

2.04 WALL PLATES AND COVERS

A. Manufacturers:
   1. Hubbell Incorporated: www.hubbell-wiring.com/#sle.
   2. Intermatic, Inc: www.intermatic.com/#sle.
   3. Leviton Manufacturing Company, Inc: www.leviton.com/#sle.
   4. Lutron Electronics Company, Inc: www.lutron.com/#sle.
   5. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us/#sle.

B. Wall Plates: Comply with UL 514D.
   1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.
   2. Size: Standard.
   3. Screws: Metal with slotted heads finished to match wall plate finish.

2.05 POKE-THROUGH ASSEMBLIES

A. Manufacturers:
   1. Hubbell Incorporated: www.hubbell.com/#sle.
   2. Thomas & Betts Corporation: www.tnb.com/#sle.
   3. Wiremold, a brand of Legrand North America, Inc: www.legrand.us/#sle.

B. Description: Assembly comprising floor service fitting, poke-through component, fire stops and smoke barriers, and junction box for conduit termination; fire rating listed to match fire rating of floor and suitable for floor thickness where installed.

C. Flush Floor Service Fittings:
   1. Dual Service Flush Combination Outlets:
      a. Cover: Hinged door(s).
      b. Configuration:
         1) Power: Two standard convenience duplex receptacle(s).
         2) Communications: Separate compartment for owner's data cabling. 2" conduit service connection.
         3) Voice and Data Jacks: As specified in Section 27 10 00.
   2. Accessories:
      a. Closure Plugs: Size and fire rating as required to seal unused core hole and maintain fire rating of floor.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.

C. Verify that wall openings are neatly cut and will be completely covered by wall plates.

D. Verify that final surface finishes are complete, including painting.

E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.

F. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

A. Provide extension rings to bring outlet boxes flush with finished surface.

B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

A. Perform work in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.

B. Coordinate locations of outlet boxes provided under Section 26 05 33.16 as required for installation of wiring devices provided under this section.
   1. Mounting Heights: Unless otherwise indicated, as follows:
      a. Wall Dimmers: 48 inches (1200 mm) above finished floor.
      b. Receptacles: 18 inches (450 mm) above finished floor or 6 inches (150 mm) above counter.

C. Install wiring devices in accordance with manufacturer's instructions.

D. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.

E. Where required, connect wiring devices using pigtails not less than 6 inches (150 mm) long. Do not connect more than one conductor to wiring device terminals.

F. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.

G. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.

H. Install wiring devices plumb and level with mounting yoke held rigidly in place.

I. Install wall switches with OFF position down.

J. Install wall dimmers to achieve full rating specified and indicated after derating for ganging as instructed by manufacturer.

K. Do not share neutral conductor on branch circuits utilizing wall dimmers.

L. Install vertically mounted receptacles with grounding pole on top and horizontally mounted receptacles with grounding pole on left.

M. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.

N. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.

O. Install poke-through closure plugs in each unused core holes to maintain fire rating of floor.

3.04 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. Inspect each wiring device for damage and defects.

C. Operate each wall switch, wall dimmer, and fan speed controller with circuit energized to verify proper operation.

D. Test each receptacle to verify operation and proper polarity.

E. Correct wiring deficiencies and replace damaged or defective wiring devices.

3.05 ADJUSTING

A. Adjust devices and wall plates to be flush and level.

3.06 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

END OF SECTION

SECTION 27 05 29
HANGERS AND SUPPORTS FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Support and attachment requirements and components for equipment, conduit, cable, boxes, and other communications work.

1.02 REFERENCE STANDARDS

A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2024.

B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.

C. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel; 2023.

D. BICSI ITSIMM - Information Technology Systems Installation Methods Manual (ITSIMM), 8th Edition; 2022.

E. BICSI N1 - Installation Practices for Telecommunications and ICT Cabling and Related Cabling Infrastructure, 1st Edition; 2019.

F. MFMA-4 - Metal Framing Standards Publication; 2004.

G. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.

H. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

I. TIA-569 - Telecommunications Pathways and Spaces; 2019e, with Addendum (2022).

J. UL 2043 - Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces; Current Edition, Including All Revisions.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate sizes and arrangement of supports and bases with actual equipment and components to be installed.
   2. Coordinate work to provide additional framing and materials required for installation.
   3. Coordinate compatibility of support and attachment components with mounting surfaces at installed locations.
   4. Coordinate arrangement of supports with ductwork, piping, equipment and other potential conflicts.

B. Sequencing:

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for cable supports, channel/strut framing systems, nonpenetrating rooftop supports, and post-installed concrete/masonry anchors.

1.05 QUALITY ASSURANCE

PART 2 PRODUCTS

2.01 SUPPORT AND ATTACHMENT COMPONENTS

A. General Requirements:
   1. Comply with the following. Where requirements differ, comply with most stringent.
      a. TIA-569.
      b. NFPA 70.

c. Requirements of authorities having jurisdiction.

2. Provide required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for complete installation of communications work.
3. Provide products listed, classified, and labeled as suitable for purpose intended, where applicable.
4. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for load to be supported. Include consideration for vibration, equipment operation, and shock loads where applicable.
5. Do not use products for applications other than as permitted by NFPA 70 and product listing.
6. Steel Components: Use corrosion-resistant materials suitable for environment where installed.
   a. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
   b. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.

B. Conduit Supports: Straps and clamps suitable for conduit to be supported.
   1. Conduit Straps: One-hole or two-hole type; steel or malleable iron.
   2. Conduit Clamps: Bolted type unless otherwise indicated.

C. Noncontinuous Cable Supports: Suitable for cables to be supported, including but not limited to J-hooks, bridle rings, drive rings, and flexible harnesses/slings.
   1. Cable Supports Installed in Spaces Used for Environmental Air: Plenum rated; listed and labeled as complying with UL 2043, suitable for use in air-handling spaces.
   2. J-Hooks: Noncontinuous cabling support with removable top retainer clip.
      a. Material: Use galvanized steel, factory-painted steel, or stainless steel.
      b. Provide support surfaces with smooth, beveled edges and radius not less than minimum allowable bend radius of cables supported.
      c. Provide multitiered J-hooks where required to support multiple cabling systems.
   3. Bridle Rings: Noncontinuous circular cabling support.
      a. Material: Use galvanized steel, painted steel, or stainless steel.

D. Cable Routing Assemblies:
   1. Applications:
      a. Horizontal Supports: Do not exceed 3 feet (0.9 m) and at each end or joint.
      b. Vertical Supports: Do not exceed 4 feet (1.2 m), unless listed otherwise - maximum one joint between supports.
      c. Comply with NFPA 70 for cable routing assemblies.
      d. Provide NFPA 70 required bonding of metal components in accordance with manufacturer written instructions.
      e. Allowable Cable Types: Category 3, Category 5e, and Category 6A.

E. Outlet Box Supports: Hangers and brackets suitable for boxes to be supported.

F. Metal Channel/Strut Framing Systems:
   1. Description: Factory-fabricated, continuous-slot, metal channel/strut and associated fittings, accessories, and hardware required for field assembly of supports.
   2. Comply with MFMA-4.

G. Hanger Rods: Threaded, zinc-plated steel unless otherwise indicated.

H. Anchors and Fasteners:
   1. Unless otherwise indicated and where not otherwise restricted, use anchor and fastener types indicated for specified applications.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install hangers and supports in accordance with NECA 1, BICSI ITSIMM, and BICSI N1.

C. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.

D. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.

E. Unless specifically indicated or approved by Architect, do not provide support from roof deck.

F. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.

G. Equipment Support and Attachment:
   1. Use metal, fabricated supports or supports assembled from metal channel/strut to support equipment as required.
   2. Use metal channel/strut secured to studs to support equipment surface mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
   3. Use metal channel/strut to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
   4. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.

H. Secure fasteners in accordance with manufacturer's recommended torque settings.

I. Remove temporary supports.

END OF SECTION

SECTION 27 10 00
STRUCTURED CABLING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Copper cable and terminations.

B. Communications outlets.

C. Communications grounding and bonding.

D. Communications identification.

1.02 RELATED REQUIREMENTS

A. Section 07 84 00 - Firestopping.

B. Section 26 05 33.16 - Boxes for Electrical Systems.

C. Section 26 27 26 - Wiring Devices.

1.03 REFERENCE STANDARDS

A. BICSI N1 - Installation Practices for Telecommunications and ICT Cabling and Related Cabling Infrastructure, 1st Edition; 2019.

B. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

C. TIA-568 (SET) - Commercial Building Telecommunications Cabling Standard Set; 2024.

D. TIA-568.2 - Balanced Twisted-Pair Telecommunications Cabling and Components Standards; 2018d, with Addenda (2020).

E. TIA-569 - Telecommunications Pathways and Spaces; 2019e, with Addendum (2022).

F. TIA-606 - Administration Standard for Telecommunications Infrastructure; 2021d.

G. TIA-607 - Telecommunications Bonding and Grounding (Earthing) for Customer Premises; 2024e.

H. UL 444 - Communications Cables; Current Edition, Including All Revisions.

I. UL 514C - Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers; Current Edition, Including All Revisions.

J. UL 1863 - Communications-Circuit Accessories; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate requirements for service entrance and entrance facilities with Communications Service Provider.
   2. Coordinate the work with other trades to avoid placement of other utilities or obstructions within the spaces dedicated for communications equipment.
   3. Coordinate arrangement of communications equipment with the dimensions and clearance requirements of the actual equipment to be installed.
   4. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product.

C. Evidence of qualifications for installer.

D. Field Test Reports.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: At least 3 years experience manufacturing products of the type specified.

B. Installer Qualifications: A company having at least 3 years experience in the installation and testing of the type of system specified, and:
   1. Employing a BICSI Registered Communications Distribution Designer (RCDD).
   2. Supervisors and installers factory certified by manufacturers of products to be installed.

C. Products: Listed, classified, and labeled as suitable for the purpose intended.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Keep stored products clean and dry.

1.08 WARRANTY

A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

B. Correct defective Work within a 2 year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 SYSTEM DESIGN

A. Provide a complete permanent system of cabling and pathways for voice and data communications, including cables, conduits and wireways, pull wires, support structures, enclosures and cabinets, and outlets.
   1. Comply with TIA-568 (SET) (cabling) and TIA-569 (pathways) (commercial standards).
   2. Provide fixed cables and pathways that comply with NFPA 70 and TIA-607 and are UL listed or third party independent testing laboratory certified.
   3. Provide connection devices that are rated for operation under conditions of 32 to 140 degrees F (0 to 60 degrees C) at relative humidity of 0 to 95 percent, noncondensing.
   4. In this project, the term plenum is defined as return air spaces above ceilings, inside ducts, under raised floors, and other air-handling spaces.

B. System Description:
   1. Offices and Work Areas: Provide two (2) data cables to each workstation.

C. Cabling to Outlets: Specified horizontal cabling, wired in star topology to distribution frame located at center hub of star; also referred to as "links".

2.02 COPPER CABLE AND TERMINATIONS

A. Manufacturers:
   1. General Cable Technologies Corporation: www.generalcable.com/#sle.

B. Copper Horizontal Cable:
   1. Description: 100 ohm, balanced twisted pair cable complying with TIA-568.2 and listed and labeled as complying with UL 444.
   2. Cable Type - Voice and Data: TIA-568.2 Category 6A UTP (unshielded twisted pair); 23 AWG.
   3. Cable Capacity: 4-pair.
   4. Cable Applications: Use listed NFPA 70 Type CMP plenum cable unless otherwise indicated.
   5. Cable Jacket Color - Voice and Data Cable: Blue.
   6. Product(s):
      a. General Cable Technologies Corporation; GenSPEED Cables: www.generalcable.com/#sle.

C. Copper Cable Terminations: Insulation displacement connection (IDC) type using appropriate tool; use screw connections only where specifically indicated.

D. Jacks and Connectors: Modular RJ-45, non-keyed, terminated with 110-style insulation displacement connectors (IDC); high impact thermoplastic housing; suitable for and complying with same standard as specified horizontal cable; UL 1863 listed.
   1. Performance: 500 mating cycles.
   2. Voice and Data Jacks: 8-position modular jack, color-coded for both T568A and T568B wiring configurations.

2.03 COMMUNICATIONS OUTLETS

A. Outlet Boxes: Comply with Section 26 05 33.16.
   1. Provide depth as required to accommodate cable manufacturer's recommended minimum conductor bend radius.

B. Wall Plates:
   1. Comply with system design standards and UL 514C.
   2. Accepts modular jacks/inserts.
   3. Capacity:
      a. Data or Combination Voice/Data Outlets: 2 ports.
   4. Wall Plate Material/Finish - Flush-Mounted Outlets: Match wiring device and wall plate finishes specified in Section 26 27 26.

2.04 GROUNDING AND BONDING COMPONENTS

A. Comply with TIA-607.

2.05 IDENTIFICATION PRODUCTS

A. Comply with TIA-606.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Comply with latest editions and addenda of TIA-568 (SET) (cabling), TIA-569 (pathways), TIA-607 (grounding and bonding), BICSI N1, NFPA 70, and SYSTEM DESIGN as specified in PART 2.

B. Comply with Communication Service Provider requirements.

C. Grounding and Bonding: Perform in accordance with TIA-607 and NFPA 70.

D. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 00.

3.02 INSTALLATION OF PATHWAYS

A. Install pathways with the following minimum clearances:
   1. 48 inches (1220 mm) from motors, generators, frequency converters, transformers, x-ray equipment, and uninterruptible power systems.
   2. 12 inches (300 mm) from power conduits and cables and panelboards.
   3. 5 inches (125 mm) from fluorescent and high frequency lighting fixtures.
   4. 6 inches (150 mm) from flues, hot water pipes, and steam pipes.

B. Outlet Boxes:
   1. Coordinate locations of outlet boxes provided under Section 26 05 33.16 as required for installation of telecommunications outlets provided under this section.
      a. Mounting Heights: Unless otherwise indicated, as follows:
         1) Telephone and Data Outlets: 18 inches (450 mm) above finished floor.
      b. Orient outlet boxes for vertical installation of wiring devices unless otherwise indicated.

3.03 INSTALLATION OF EQUIPMENT AND CABLING

A. Cabling:
   1. Do not bend cable at radius less than manufacturer's recommended bend radius; for unshielded twisted pair use bend radius of not less than 4 times cable diameter.

2. Do not over-cinch or crush cables.
3. Do not exceed manufacturer's recommended cable pull tension.
4. When installing in conduit, use only lubricants approved by cable manufacturer and do not chafe or damage outer jacket.

B. Service Loops (Slack or Excess Length): Provide the following minimum extra length of cable, looped neatly:
1. At Outlets - Copper: 12 inches (305 mm).

C. Copper Cabling:
1. Category 5e and Above: Maintain cable geometry; do not untwist more than 1/2 inch (12 mm) from point of termination.
2. For 4-pair cables in conduit, do not exceed 25 pounds (110 N) pull tension.
3. Use T568B wiring configuration.

D. Identification:
1. Use wire and cable markers to identify cables at each end.
2. Use manufacturer-furnished label inserts, identification labels, or engraved wallplate to identify each jack at communications outlets with unique identifier.

3.04 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. Comply with inspection and testing requirements of specified installation standards.

C. Visual Inspection:
1. Inspect cable jackets for certification markings.
2. Inspect cable terminations for color coded labels of proper type.
3. Inspect outlet plates and patch panels for complete labels.

D. Testing - Copper Cabling and Associated Equipment:
1. Category 5e and Above Links: Perform tests for wire map, length, attenuation, NEXT, and propagation delay.

END OF SECTION

SECTION 27 11 00
COMMUNICATIONS EQUIPMENT ROOM FITTINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Communications termination blocks and patch panels.

B. Communications cable management.

1.02 ABBREVIATIONS AND ACRONYMS

A. PDU: Power distribution unit.

B. RCDD: Registered communications distribution designer.

C. UPS: Uninterruptible power supply.

1.03 REFERENCE STANDARDS

A. BICSI N1 - Installation Practices for Telecommunications and ICT Cabling and Related Cabling Infrastructure, 1st Edition; 2019.

B. BICSI TDMM - Telecommunications Distribution Methods Manual, 15th Edition; 2024.

C. EIA/ECA-310 - Cabinets, Racks, Panels, and Associated Equipment; 2005e.

D. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

E. TIA-568.2 - Balanced Twisted-Pair Telecommunications Cabling and Components Standards; 2018d, with Addenda (2020).

F. TIA-606 - Administration Standard for Telecommunications Infrastructure; 2021d.

G. TIA-607 - Telecommunications Bonding and Grounding (Earthing) for Customer Premises; 2024e.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate arrangement of equipment with dimensions and clearance requirements.
   2. Notify Architect of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product. Include ratings, configurations, standard wiring diagrams, dimensions, finishes, service condition requirements, and installed features.

C. Field Test Reports.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with minimum 3 years of documented experience.

B. Installer Qualifications: Company having minimum 3 years of experience in installation and testing of type of system specified.
   1. Employing BICSI RCDD.
   2. Supervisors and installers factory certified by manufacturers of products to be installed.

C. Product Evaluation and Listing Organization Qualifications: Organization engaged in evaluation of products and services, including those recognized by OSHA as Nationally Recognized Testing Laboratory (NRTL), and acceptable to authorities having jurisdiction.

1.07 DELIVERY, STORAGE, AND HANDLING

A. See Section 01 74 19 - Construction Waste Management and Disposal for packaging waste requirements.

B. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

C. Store products in manufacturer's unopened packaging, keep dry and protect from damage until ready for installation.

1.08 FIELD CONDITIONS

A. Maintain field conditions within manufacturer's required service conditions during and after installation.

1.09 WARRANTY

A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.

B. Manufacturer Warranty: Provide manufacturer warranty for defects in material and workmanship for duration below. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 COMMUNICATIONS TERMINATION BLOCKS AND PATCH PANELS

A. Copper Cross-Connection Equipment:
   1. Patch Panels for Copper Cabling: Sized to fit EIA/ECA-310 standard 19-inch (482.6 mm) wide equipment racks; 0.09-inch (2.2 mm) thick aluminum; cabling terminated on Type 110 insulation displacement connectors; printed circuit board interface.
      a. Jacks: Non-keyed RJ-45, suitable for and complying with same standard as cable to be terminated; maximum 48 ports per standard width panel.
      b. Comply with TIA-568.2.
      c. Include provisions for both T568A and T568B wiring configurations.
      d. Capacity: Provide ports sufficient for cables to be terminated plus 25 percent spare.
      e. Labels: Factory installed laminated plastic nameplates above each port, numbered consecutively; comply with TIA-606.
      f. Provide incoming cable strain relief and routing guides on back of panel.
   2. Products: Match Existing Siemon Equipment

2.02 COMMUNICATIONS CABLE MANAGEMENT

A. Manufacturers:
   1. Siemon Company: www.siemon.com/#sle.

B. Comply with BICSI TDMM for cable organization, minimizing strain relief, and cable bending limitations.

C. Comply with TIA-607 and NFPA 70 for bonding of metal parts with dedicated wiring or by using listed connections.

2.03 SOURCE QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Comply with BICSI N1.

3.02 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Comply with inspection and testing requirements of specified installation standards.

3.03 CLEANING

A. See Section 01 70 00 - Execution and Closeout Requirements for additional requirements.

B. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish; including repair of scratched or marred surfaces.

3.04 PROTECTION

A. Protect installed products from subsequent construction operations.

END OF SECTION

SECTION 28 46 00
FIRE DETECTION AND ALARM

PART 1 GENERAL

1.01 PROJECT SUMMARY

A. The work includes the furnishing and installation of new fire alarm initiation and notification devices, as well as the relocation and extension of existing devices as indicated on the Drawings.

B. The existing Fire Alarm Control Panel (FACP) shall remain. The Contractor shall provide all necessary system programming modifications to incorporate the new and relocated devices. All new work shall be integrated into the existing system to function in accordance with the facility's existing Sequence of Operations.

1.02 SECTION INCLUDES

A. Fire alarm system and associated components, including control units, related equipment, initiating devices, and notification appliances.

1.03 RELATED REQUIREMENTS

A. Section 26 05 33.16 - Boxes for Electrical Systems.

1.04 REFERENCE STANDARDS

A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines; current edition.

B. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

C. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.

D. NECA 90 - Standard for Commissioning Building Electrical Systems; 2015.

E. NECA 305 - Standard for Fire Alarm System Job Practices; 2018.

F. NFPA 3 - Standard for Commissioning of Fire Protection and Life Safety Systems; 2024.

G. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

H. NFPA 72 - National Fire Alarm and Signaling Code; Most Recent Edition Cited by Referring Code or Reference Standard.

I. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; 2024.

J. UL 268 - Standard for Smoke Detectors for Fire Alarm Systems; Current Edition, Including All Revisions.

K. UL 1971 - Standard for Signaling Devices for the Hearing Impaired; Current Edition, Including All Revisions.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Evidence of designer qualifications.

C. Comply with NFPA 72 chapter "Documentation," including noting names of installers, owners, and system classification information.

D. Design Documents: Submit all information required for plan review and permitting by AHJ, including floor plans, riser diagrams, and description of operation.
   1. Copy (if any) of list of data required by AHJ.
   2. NFPA 72 "Record of Completion", filled out to extent known at time.
   3. Clear and concise description of operation, with input/output matrix similar to that shown in NFPA 72 Appendix A, and complete listing of software required.

4. Manufacturer's detailed product data sheet for each component, including wiring diagrams, and circuit length limitations. Catalog pages and product descriptions include ratings, dimensions, finishes, service conditions, and included features.
5. Certification by manufacturer of FACU that system design complies with Contract Documents.
6. Certification by Contractor that system design complies with Contract Documents.

E. Shop Drawings: Submit installation documentation required for plan review and permitting by AHJ, including floor plans showing locations of fire alarm system components, enlarged drawn to identified scale plan view, and riser diagrams.
1. System zone boundaries and interfaces to fire safety systems.
2. Show locations of components, circuits, and raceways; mark components with identifiers used in control unit programming.
3. Include elevations and details of proposed equipment arrangements.
4. Include system interconnection schematic riser diagram showing proposed and approved cable size and type; coordinated with floor plans and describing circuit class, survivability, and application specific information required by NFPA 72.
5. Include typical wiring diagrams for devices, notification appliances, remote indicators, annunciators, remote test stations, and EoL and power supervisory devices.
6. Include requirements and control diagrams for interfacing with other systems.
7. Circuit layouts; number, size, and type of raceways and conductors; conduit fill calculations; standby and spare capacity calculations; notification appliance circuit loop resistance and voltage drop calculations, including spare capacity.
8. List of devices and notification appliances on each SLC, with spare capacity indicated.
9. Manufacturer's detailed data sheet for each component, including wiring diagrams, installation instructions, and circuit length limitations.
10. Description of power supplies; if secondary power is by battery include calculations demonstrating adequate battery power.
11. Detailed drawing of graphic annunciators, displays, and interfaces.
12. Certification by either FACU manufacturer or manufacturer of related equipment.
13. Certification by FACU manufacturer that system design complies with Contract Documents.
14. Certification by Contractor that system design complies with Contract Documents.

F. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

G. Evidence of installer qualifications.

H. Inspection and Test Reports:
1. Submit inspection and test plan prior to closeout demonstration.
2. Submit documentation of satisfactory inspections and tests.
3. Submit NFPA 72 "Inspection and Test," filled out.

I. Operating and Maintenance Data: See Section 01 7800 for additional requirements; revise and resubmit until acceptable; have one set available during closeout demonstration:
1. Complete set of specified design documents, as approved by AHJ.
2. Additional printed set of project record documents and closeout documents, bound or filed in same manuals.
3. Contact information for firm that will be providing contract maintenance and trouble call-back service.
4. List of recommended spare parts, tools, and instruments for testing.
5. Replacement parts list with current prices, and source of supply.
6. Detailed troubleshooting guide and large scale input/output matrix.
7. Preventive maintenance, inspection, and testing schedule complying with NFPA 72; provide printed copy and computer format acceptable to Owner.

8. Detailed but easy to read explanation of procedures require recording of system trouble events by qualified personnel, such as when routine testing is being conducted for fire drills and when entering into contracts for building renovations.

J. Project Record Documents: See Section 01 7800 for additional requirements, have one set available during closeout demonstration:
   1. Complete set of floor plans showing actual installed locations of components, conduit, and zones.
   2. "As installed" wiring and schematic diagrams, with final terminal identifications.
   3. "As programmed" operating sequences, including control events by device, and updated input/output chart.

K. Closeout Documents:
   1. Certification by manufacturer that system has been installed in compliance with manufacturer's installation requirements, is complete, and is in satisfactory operating condition.
   2. NFPA 72 "Record of Completion," filled out completely and signed by installer and authorized representative of AHJ.

1.06 QUALITY ASSURANCE

A. Designer Qualifications: NICET Level III (three) or Level IV (four) certified fire alarm technician or registered fire protection engineer, employed by FACU manufacturer, Contractor, or installer, with experience designing fire alarm systems in jurisdictional area of AHJ.

B. Installer Qualifications: Firm with minimum three years documented experience installing fire alarm systems of specified type and providing contract maintenance service as regular part of their business.
   1. Authorized representative of FACU manufacturer; submit manufacturer's certification that installer is authorized; include name and title of manufacturer's representative making certification.
   2. Installer Personnel: At least two years of experience installing fire alarm systems.
   3. Supervisor: Level III (three) or Level IV (four) certified fire alarm technician; furnish name and address.

C. Manufacturer Qualifications: Company specialized in manufacturing products specified in this section with at least three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. See Section 01 74 19 - Construction Waste Management and Disposal for packaging waste requirements.

B. Receive, inspect, handle, and store products in accordance with manufacturer's instructions and NECA 305.

C. Handle carefully to avoid damage to internal components, enclosure, and finish.

D. Store products in manufacturer's unopened packaging, keep dry and protect from damage until ready for installation.

1.08 WARRANTY

A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.

B. Fire Alarm System Detectors: Provide minimum 1-year year manufacturer warranty covering repair or replacement due to defective materials or workmanship.

C. Fire Alarm System Notification Appliances: Provide minimum 1-year year manufacturer warranty covering repair or replacement due to defective materials or workmanship.

PART 2 PRODUCTS

2.01 FIRE ALARM SYSTEM

A. General Requirements:

1. Provide modifications and extensions to existing fire alarm system complying with NFPA 70, NFPA 72, NFPA 90A, and consisting of required equipment, conduit, cabinets, outlet boxes, wiring, connectors, hardware, supports, accessories, components, software, and system programming as necessary for complete operating system that provides functional intent indicated.
2. Comply with the following; where requirements conflict, order of precedence of requirements is as listed:
    a. 36 CFR 1191 and ADA Standards.
    b. Requirements of AHJ.
    c. Applicable local codes.
    d. Contract Documents.
    e. NFPA 72; "should" is mandatory; where conflicts between requirements require deviation, identify deviations clearly on design documents.
3. Fire Alarm System Products:
    a. Listed, classified, and labeled as suitable for purpose intended.
    b. Installation Environments: Provide products suitable for their respective indoor applications.
4. Provide fire alarm circuits in accordance with NFPA 70.
    a. Comply with methods of interconnecting FACUs in accordance with NFPA 72 and NFPA 70.
    b. Wiring and Wiring Methods:
        1) General Requirements:
            (a) Comply with requirements for wiring and wiring methods in accordance with NFPA 70.
            (b) Conductors and Cables Installed Exposed in Spaces Used for Environmental Air (only where specifically permitted): Plenum-rated, listed and labeled as suitable for use in return air plenums.
            (c) Special Occupancies: Comply with NFPA 70.
            (d) Comply with NFPA 70 for wire and cable plenum, riser, general-purpose, limited-use, undercarpet, and underground applications.
        2) Fire Alarm Circuits:
            (a) Comply with NFPA 70 for conditions and types required for multiconductor cable systems.
            (b) Power-Limited Fire Alarm (PLFA) Circuits:
                (1) Provide identification for PLFA circuits in accordance with NFPA 70.
5. Provide pathway class designations and pathway survivability, as defined in NFPA 72.
    a. Provide monitoring of conductors and other signaling channels for integrity and circuit performance.
    b. Pathway Class Designations:
        1) Unless otherwise indicated or required, pathways to meet the following requirements:
            (a) SLCs: Class B (star, tee-tap, multi-tap, with no return).
            (b) IDCs: Class B (daisy-chain with EoL resistor device installed at end of circuit).
            (c) NACs: Class B (daisy-chain with EoL resistor device installed at end of circuit).
    c. Pathway Survivability:
        1) Unless otherwise indicated or required, pathways to meet requirements for Pathway Survivability Level 0 (nonrated cable, no required provisions for pathway survivability).

2.02 FIRE ALARM CONTROL UNITS AND RELATED EQUIPMENT - EXISTING TO REMAIN

2.03 FIRE ALARM SYSTEM INITIATING DEVICES

A. Manufacturers: Match Existing

B. General Requirements:
   1. Provide devices and associated accessories suitable for intended application and location to be installed. Unless otherwise indicated, use addressable devices and addressable interface modules only in clean, dry, indoor, nonhazardous locations.
   2. Surface-Mounted Devices: Provide manufacturer's accessory surface mount backboxes or suitable outlet/device box.

C. Spot-Type Detectors:
   1. Utilize plug-in mounting to separate base with tamper-resistant feature; provide bases as indicated or as required.
   2. Addressable Detectors:
      a. Provide LED indication of normal operation and regular communication with FACU and alarm condition.
   3. Smoke Detectors:
      a. Listed and labeled as complying with UL 268.
      b. Provide sensor type (e.g., photoelectric, ionization) as indicated.
      c. Provide automatic drift compensation.

2.04 FIRE ALARM SYSTEM NOTIFICATION APPLIANCES

A. Manufacturers:

B. General Requirements:
   1. Provide signaling notification appliances listed for fire-protective service and intended operating mode, public or private; suitable for connection to FACU notification appliance circuits.
   2. Provide notification appliances and associated accessories suitable for intended application and location to be installed. Use notification appliances only according to listed mounting (e.g. ceiling, wall).
   3. Surface-Mounted Notification Appliances: Provide manufacturer's accessory surface mount backboxes or suitable outlet/device box.
   4. Notification Appliance Color: Match Existing.

C. Visible Notification Appliances:
   1. Public Mode Operation: Listed and labeled as complying with UL 1971.
   2. Strobes: Clear or nominal white lens with flash rate of 1 Hz unless otherwise indicated or required; xenon or LED light source with maximum pulse duration of 0.02 seconds; candela rating as indicated.

2.05 WIRE AND CABLE

A. General Requirements:
   1. Provide cables as indicated or as required for connections between system components.

2.06 ACCESSORIES

A. Provide components as indicated or as required for connection of fire alarm system to devices and other systems indicated.

B. Provide EoL resistors as required for wiring supervision.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that mounting surfaces are ready to accept components and equipment, with suitable support frames and anchors installed where required.

B. Verify ratings, configurations, and characteristics of system components.

C. Verify rough-ins for field connections.

D. Verify that work likely to damage fire alarm system has been completed.

E. Verify that interior of building has been protected from weather.

F. Perform preinstallation tests and inspections per manufacturer's instructions and in accordance with NECA 305.

G. Verify that system bonding is in accordance with Section 26 05 26.

H. Do not energize system until deficiencies have been corrected.

I. Verify that branch circuit wiring installation is completed, tested, and ready for connection to fire alarm system. Overcurrent protection ratings are consistent with circuit voltage and manufacturer's recommendations and nameplate data for equipment.

3.02 PREPARATION

A. Prior to installation, confirm environment of installation area is clean, and with ambient temperature, humidity, and ventilation requirements are per manufacturer’s written instructions.
   1. Clean and vacuum in accordance with manufacturer's written instructions. Confirm equipment ventilation holes are absent of obstructions and free for air flow.
   2. Clean pathways thoroughly to remove foreign materials before installing conductors and cables.
   3. Clean dirt, debris, plaster, and other foreign materials from equipment enclosures, cabinets, and outlet boxes.
   4. Clean surfaces to receive adhesive products according to manufacturer's instructions.

B. Follow tool requirements for installation, including torquing adjustments, as listed in manufacturer documentation.

C. Remove detector dust covers prior to system energization.

3.03 INSTALLATION

A. Install field-devices, components, FACU and related equipment, and accessories in accordance with the following:

B. Field Locations:
   1. Obtain Owner's approval of locations of devices and notification appliances before installation.
   2. Arrange equipment to provide minimum operational clearances and required maintenance access in accordance with manufacturer's instructions and NFPA 70.
   3. Conceal wiring, conduit, outlet boxes, and supports where installed in finished areas; maintain code-required access.

C. Raceways and Supports:
   1. Coordinate locations of outlet boxes as required for installation. Only install boxes and equipment at locations based on application standards indicated in NFPA 72.
   2. Secure and support raceways at intervals complying with NFPA 70. Provide supports where vertical rise exceeds permissible limits.
   3. Install firestopping to preserve fire resistance rating of partitions and other elements.

D. Wiring and Connections:
   1. Maintain separation of Class 1, Class 2, Class 3 remote-control, signaling, fire alarm circuits, and power-limited circuits in accordance with cable insulation class and NFPA 70.
   2. Maintain circuit pathway and class designations in accordance with NFPA 72 for configuration, separation, and survivability.
   3. Comply with permitted and not permitted installations for wires, cables, cable routing assemblies, communications circuits, and fire alarm circuits in accordance with NFPA 70.
   4. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by AHJ. Provide independent support from building structure and suspended ceiling systems. Do not provide support from raceways, piping, ductwork, or other systems.
   5. Provide grounding and bonding in accordance with Section 26 05 26.
   6. Comply with manufacturer's minimum cable sizes or ratings.

7. Do not exceed manufacturer's recommended maximum power, signal, or network cable lengths between components.
8. Provide network wiring in accordance with NFPA 70.
9. Neatly train and bundle conductors inside boxes, wireways, and cabinets.
10. See manufacturer's instructions for batteries.

E. Fire Alarm System Components:
1. Install field-installed devices, components, relays, notification appliances, accessories, and when applicable EoL resistors.
   a. Install wiring to supervisory devices and associated EoL resistors as required for supervision of hardwired connections
2. Install Interconnect Wiring: Connect system cabinets, install processor and cards, cabling, connectors, terminations, and bonding.

F. System Identification:
1. Identify devices, notification appliances, components, cables, and equipment in accordance with approved submittals. See Section 26 05 53.
2. Confirm fire alarm system programming meets requirements of SOO and sub-system SOOs.
3. Mark location of disconnecting means for NPFLA circuits.
4. Coordinate to provide red branch power circuit protective devices or identify them accordingly as required by NFPA 72 and NFPA 70.
5. Mark date of batteries installed on inside cover of panels and formal maintenance logs.

G. Troubleshooting and Installer Checks:
1. Field test connectivity periodically during installation process to avoid unexpected troubleshooting.
2. Check system operation for notification, FACU functions, circuit supervision, alarm initiating devices, supervisory initiating devices, dress panels/doors/covers, and programming before performing field tests.

H. Fire Alarm System Tests:
1. Perform required tests of NFPA 72. Record measured values during operational checks.
2. Confirm functional testing of fire alarm system is as indicated in Contract Documents.

3.04 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Provide services of manufacturer's authorized representation to observe installation and assist in inspection, testing, and adjusting. Include manufacturer's detailed testing procedures and field reports and with submittals.

C. Provide equipment, two-way radios for testing personnel use, tools, and supplies required to accomplish inspection and testing.

D. Notify Owner and Architect at least two weeks prior to scheduled inspections and tests.

E. Inspect and test in accordance with manufacturer's instructions.

F. Inspect wiring and components for damage and defects.

G. Batteries and Power Supplies: Perform inspections and tests listed in manufacturer installation instructions.

H. Perform additional requirements related to testing and inspection during system startup.

I. Test for interface with other systems.

J. Test shunt trips to verify operation.

K. Correct defective work, adjust for operation, and retest until entire system complies with Contract Documents.

L. Submit detailed reports indicated inspection and testing results, corrective actions taken, and as-found and final adjusted settings.

3.05 SYSTEM STARTUP

A. Obtain Owner approval prior to performing system startup.

3.06 ADJUSTING

A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.

B. Adjust initiating device and notification appliance settings to achieve desired operation as indicated in submittals.

C. Measure power supply primary and secondary voltages, log values for records, and make appropriate adjustments.

D. Adjust alignment of equipment covers and doors. Provide keys and spare keys to Owner.

E. Reprint and reinstall damaged or misinstalled labels; maintain neat and square to installed location good workmanship - see NECA 1; maintain consistent placements for identification on products of similar type.

F. Adjust devices or notification appliances and associated bases to be flush and level.

G. Program system parameters according to requirements of Owner.

3.07 CLEANING

A. See Section 01 70 00 - Execution and Closeout Requirements for additional requirements.

B. See Section 01 74 19 - Construction Waste Management and Disposal for field-generated construction waste requirements.

C. Check tightness of electrical connections. Replace damaged components and provide closure plates for vacant positions. Provide circuit directory updates for related power branch circuits.

D. Clean and repair existing materials and equipment that remain or are indicated for reuse.

E. Clean dirt, debris, plaster, and other foreign materials from outlet boxes and fire alarm system equipment and components.

F. Clean fire alarm system equipment and components according to manufacturer's instructions and NECA 305.

G. Clean surfaces and interiors of boxes and device cover plates in accordance with manufacturer's instructions to remove dirt, fingerprints, debris, plaster, and other foreign materials.

H. Repair scratched or marred exposed surfaces to match original factory finish.

I. Comply with federal (EPA), state, and local regulations for battery handling and disposal. Do not spill battery fluids down plumbing drains. Only use containers safe for transportation marked 'nonspillable.'

3.08 COMMISSIONING

A. See Section 01 91 13 - General Commissioning Requirements for additional requirements.

B. Comply with NFPA 3 for commissioning of fire protection and life safety systems.

C. Comply with NECA 90 for commissioning building electrical systems.

D. Support Commissioning Agent in assembling test data and generating reports.

3.09 INSPECTION AND TESTING FOR COMPLETION

A. Notify Owner 7 days prior to beginning completion inspections and tests.

B. Notify AHJ and comply with their requirements for scheduling inspections and tests and for observation by their personnel.

C. Provide services of installer's supervisor or person with equivalent qualifications to supervise inspection and testing, correction, and adjustments.

D. Prepare for testing by ensuring that work is complete and correct; perform preliminary tests as required.

E. Provide tools, software, and supplies required to accomplish inspection, testing, and document results.

F. Perform inspection and testing in accordance with NFPA 72 and requirements of AHJ; document each inspection and test.

G. Correct defective work, adjust for operation, and retest until entire system complies with Contract Documents.

3.10 CLOSEOUT ACTIVITIES

A. See Section 01 78 00 - Closeout Submittals for additional submittals.

B. See Section 01 79 00 - Demonstration and Training for additional requirements.

C. Closeout Demonstration: Demonstrate operation of all functions to Owner.
   1. Be prepared to conduct any of required tests.
   2. Have minimum one copy of operation and maintenance data, preliminary copy of project record drawings, input/output matrix, and operator instruction chart(s) available during demonstration.
   3. Have authorized technical representative of FACU manufacturer present during demonstration.
   4. Demonstration may be combined with inspection and testing required by AHJ; notify AHJ with enough time to schedule demonstration.
   5. Repeat demonstration until successful.

END OF SECTION

FIRE PROTECTION SYSTEMS NARRATIVE

Project Name: Shepard building – 4th floor renovations

Project Address: 80 Washington Street – 4th floor (east side only)

Date: 01/09/2026

Design Professional: To be determined once the bid has concluded.

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1. PROJECT OVERVIEW & SCOPE

- **Building Description:** Existing 6-story building. Total height: approximately 75 Ft.
- **Remodel Area:** Approximately 15,200 SF on the 4th Floor.
- **Occupancy Group:** Group B – Office per IBC 2018 / NFPA 101.
- **Construction Type:** Existing noncombustible steel-frame construction (Type IIB)
- **Scope of Work:** This is a design-build project to modify existing fire alarm and fire suppression systems to accommodate a new architectural layout. All work shall maintain the integrity of the existing 6-story building systems.

2. DESIGN RATIONALE

- **Governing Codes:** This design complies with the following:
    - RILSC (parts 1 through 10 of RICR - Title 450)
        - Parts 7 – RI Fire Code: NFPA 1 (2018) + 450-RICR-00-00-7 RI amendments
        - Parts 8 – RI Life Safety Code: NFPA 101 (2018) + 450-RICR-00-00-8 RI amendments
        - Part 9 – RI Rehabilitation Code: SRC-1 + 450-RICR-00-00-9 + 450-RICR-00-00-20 RI amendments
        - Part 10 – RI Fire Alarm Code: NFPA 72 (2019) + 450-RICR-00-00-10 RI amendments
        - NFPA 13 – (2016)
- **Fire Suppression (NFPA 13):**
    - Existing wet-pipe system shall be partially modified on the 4th floor. Sprinkler heads shall be relocated or added to ensure 100% coverage of the new layout.
    - **Design Criteria:** Light Hazard, 0.10 gpm/sq. ft. over 1,500 sq. ft.
    - **2026 Compliance:** New "supplemental sprinklers" shall be installed under any new obstructions (ducts/soffits) exceeding 4 feet in width per updated NFPA 13 requirements.
- **Fire Alarm System (NFPA 72):**

- New addressable initiation devices (smoke/heat) and notification appliances (strobes/horns) shall be integrated into the existing building Fire Alarm Control Panel (FACP) as required to accommodate the new layout.
- **Notification:** Visual appliances (strobes) shall be placed to meet 2026 ADA and NFPA 72 intensity requirements for the revised room configurations.

3. SEQUENCE OF OPERATIONS (INPUT/OUTPUT)

In the event of a fire event on the remodeled half-floor:

1. **Waterflow:** Activation of a sprinkler flow switch shall trigger General Building Alarm and Notification to Central Station.
2. **Smoke Detection:** Activation of any new smoke detector shall initiate floor-specific notification, recall elevators to the primary level, and shut down local HVAC units.
3. **Manual Pull Stations:** No pull stations shall be moved/added.
4. **Notification:** The sequence of operations shall include notifying Providence FD by central station. Providence fire uses a Gamewell master box.

4. CONSTRUCTION SAFETY & IMPAIRMENTS (NFPA 241)

- **Fire Prevention Program:** A written Fire Safety Plan shall be maintained on-site during construction.
- **System Impairments:** Any temporary shutdown of the floor's fire protection shall follow the building's Impairment Coordinator protocols.
- **Protection:** Existing systems shall remain active on the non-remodel half-floor. Temporary fire extinguishers ABC type shall be provided every 75 feet of travel distance in the construction area.

5. TESTING & ACCEPTANCE CRITERIA

- **Pre-Testing:** The Design-Build contractor shall conduct a 100% functional test of all new/relocated devices.
- **Joint Testing:** A witness test shall be scheduled with the BCO/Fire Marshal to verify:
  - Proper signal transmission to the main FACP.
  - Correct audibility and visibility of notification appliances in the new layout.
  - Hydrostatic testing (200 psi for 2 hours) for any new sprinkler piping.
- **Closeout:** Final "As-Built" drawings and a signed [Contractor's Material and Test Certificate] shall be submitted upon completion.

MECHANICAL SYSTEMS DESIGN-BUILD NARRATIVE

Project Name: Shepard building – 4th floor renovations

Project Address: 80 Washington Street – 4th floor (east side only)

Date: 01/02/2026

Design Professional: To be determined once the bid has concluded.

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1. BASIS OF DESIGN

- **Codes & Standards:** This project shall be designed in accordance with the Rhode Island Mechanical Code (SBC-4), Rhode Island Energy Conservation Code (SBC-8), and ASHRAE 62.1 for ventilation.
- **System Description:** The existing HVAC Distribution System shall be modified to accommodate the new architectural layout.
- **Design Intent:** The modification ensures that every new room/zone created by the remodel receives adequate air supply, return air, and outdoor ventilation air per code-required occupancy counts.

2. MECHANICAL MODIFICATIONS & ZONE LOGIC

- **Air Distribution:** Existing ductwork shall be rerouted and extended to serve new diffusers and grilles. The Layout shall be designed to minimize static pressure loss and prevent excessive noise/velocity.
- **Terminal Units (VAV/FPB):** It's anticipated that no addition or removal of HVAC units is required.
- **Hydronic Systems:** Any modifications to hydronic piping for reheat coils or perimeter heating shall follow the original building's pressure rating and insulation standards.

3. VENTILATION & INDOOR AIR QUALITY

- **Outdoor Air (OA):** Calculations shall be performed to ensure that the modified air distribution maintains the minimum OA CFM required by SBC-4 Section 403.
- **Exhaust:** It's anticipated that there will be no modification required to the exhaust in the project area.

4. CONTROLS & BMS INTEGRATION

- **Sequence of Operations:** The GC shall update the control sequences to reflect new zone boundaries.
- **BMS Interface:** New and modified sensors (thermostats, CO2 sensors) shall be integrated into the existing BMS building.
- **Programming:** The system shall be programmed for Occupied/Unoccupied schedules to maintain compliance with the RI Energy Code.

5. COORDINATION & INSTALLATION STANDARDS

- **Field Verification:** The GC shall verify in field all plenum heights and existing utility locations. New ductwork shall be coordinated with the fire sprinkler layout and lighting plan to avoid conflicts.
- **Structural Supports:** All new ductwork and equipment shall be supported per SMACNA standards and seismic requirements for a building of this height and occupancy.

6. COMMISSIONING & TAB (TESTING, ADJUSTING, BALANCING)

- **TAB Scope:** A certified NEBB or AABC Balancing Contractor shall perform a total system balance for the modified floor area.
- **Deliverables:** At project closeout, a certified TAB report shall be submitted to the BCO, verifying that:
    1. Supply, Return, and OA volumes shall meet the design setpoints.
    2. Hydronic flow rates (if modified) shall be calibrated to equipment manufacturer specs.
    3. Control points shall respond correctly to thermostat inputs.