Re-Bid Addendum No. 1

Date: February 22, 2024

Project : **DNR- 230014.03** **FY23-24 Buck Creek State Park – New Nature Center**

To All Bidders: This Addendum updates the Drawings and Project Manual designated "**RE-BID SET**" dated: **February 6, 2024**. Content within this Addendum shall become part of the Contract Documents.

See the end of this document for listing of revised Specifications or Drawings issued as part of this Addendum. Revised Drawings and Specifications shall include designation within the typical REVISION BLOCK within the typical drawing title block / specification header notating Addendum # and associated issuance date.

This Addendum contains **04** total pages, including this cover sheet and exclusive of any attachments noted herein.

A) General:

1) The **Pre-ReBid Meeting occurred on the project site on February 15,2024 at 10am**. Please find attached the Pre Re-Bid Meeting Minutes and Pre-Bid Attendance sign-in sheet for record and reference. NOTE: Contractors, at their discretion, may arrange site visits and access to interior of the existing facility through the Buck Creek State Park Manager, William Wigg at (937) 322-5284.
2) The Bid Opening date remains unchanged for **February 29, 2024 at 2:00 EST**.
3) Partial Permit Approval has been secured from Commerce. Work may proceed once NTP is issued to the General Contractor.

B) **Substitutions:**

1) There are no Substitution requests.

C) Questions received during Pre-Bid Meeting and within RFI period are officially answered below:

Re-Bid ADD1.1: CLARIFICATION to Drawing A-0 – DEMOLITION PLAN: Regarding the existing ceiling-installed ANSUL kitchen hood and associated rooftop ventilator: The General Contractor shall salvage and remove various existing items and present to ODNR as part of the Demolition Process. Refer to Drawing A-0 for list of items to be salvaged. The existing ANSUL hood and rooftop ventilator shall be salvaged and presented to ODNR. ODNR shall remove equipment as needed to not interfere with construction services. There is NO interior evidence of underground connection from the grilling area / existing cooktop to the existing underground grease receptacle tank as noted with Coded Note #6. Per Drawing A-0, the Contractor shall include removal of an existing underground grease receptacle tank within bid.

Re-Bid Addendum No. 1

Re-Bid ADD1.2: CLARIFICATION to Drawing A-1.1 – SITE PLAN: Regarding three (3) 48" x 23" park benches as noted in Coded Note #15: Basis of design: National Outdoor Furniture, Model # KR CBS 48-O. Acceptable equals by: Arlau and Edgework Creative. CLARIFICATION to Drawing 1/A-3 – EXTERIOR ELEVATIONS: A) Coded Note #14: Park Benches per Drawing A-1.1. GC to provide and install manufactured park bench. Clarification. B) Coded Note #13: GC to provide and install four (4) 8' long kyaks. Basis of design: Lifetime Ridgeline 98 Sit-in Kayak. Acceptable Equals by: Sun Dolphin and LL Bean. Colors to be confirmed and selected by Architect and ODNR.

Re-Bid ADD1.3: CLARIFICATION to Drawing A-1.2 and A-13.0: The project includes a 16'-0 wide x 9'-0" high overhead coiling aluminum slat door at the west end of the building as indicated on the floor plans, elevations and door schedule. Refer to Specification Section 08 33 23 – OVERHEAD COILING DOORS issued as part of this Addendum.

Re-Bid ADD1.4: CLARIFICATION to Section 08 81 13 – DECORATIVE GLAZING: The custom "birds-in-flight" graphic on the storefront glazing (per Drawing A-3.1) is NOT an applied film. Graphic is a custom ceramic frit pattern applied to Face #2 of the 1" insulated glazing. Provide graphics on glazing panels as indicated.

Re-Bid ADD1.5: 1) Please specify the extent of concrete slab demo and replacement on the interior of the building. 2) Please specify the extent of concrete sidewalk demo and replacement on the southeast part of the building. 3) Assuming code note 1 at the front entry on A-0.1 is code note 13, new concrete.

Refer to Drawing A-0 for extent of required selective demolition and replacement of existing interior and exterior concrete slabs on grade. Per typical wall sections and details on the A-7 series drawings, the full extent of the typical interior concrete slabs shall be demolished and replaced as indicated. REVISE Drawing A-0.1 coded note #1 at front entry to coded note #13.

Re-Bid ADD1.6: 1) Please specify on how to frame the overhangs, I.E. Section 1/A7.1 shows a 4' overhang, 1 and other sections on S-4 shows an small extension from the walls or beams.

CLARIFICATION to Drawing 1/A7.1 and 1/S-4:

A) The glu-lam primary beams shall extend 2'-4" beyond the support beam centerline per 1/S-4. Modify the end profile on the typical glu-lam beams to extend to the back side of the fascia per 1/A7.1. (NOTE: Slope ends of typical glu-lam beams to be parallel with the angled downspout per 1/A7.1). Delete the 4'-0" dimension on 1/A7.1 – the 2'-4" dimension governs at the typical low-end roof eave condition.

B) Per Section 1/A7.2 and 1/A7.3, the eave above the entry vestibule (per 7/S-4) shall extend 5'-0" from steel beam centerline to face of fascia and the ends of the typical glu-lam beams shall be angled to slope 1'-0" to back side of fascia.

C) The eave at the high end of the roof slope (as indicated on Drawing A-7.4 and 5/S-4) shall extend 5'-0" from steel beam centerline to face of fascia and the ends of the typical glu-lam beams shall be angled to slope 1'-0" to back side of fascia.

D) Per Section on Drawing A-7.4, the typical eaves supported by the glu-lam columns and beams shall extend 2'-4" beyond the support beam centerline per 2/S-4. Modify the end profile on the typical glu-lam beams to extend to the back side of the fascia per 1/A7.1.

Re-Bid Addendum No. 1

Re-Bid ADD1.7: Please verify hardware schedule for doors 101, 110, 111. As they are shown as xx on door hardware set index. please verify height of door 100, A-8.1 shows it at 7' – 9 ½", A-13.0 shows 7', and A13.1 shows 8'-6".

Refer to Section 08 71 00 – Door Hardware, issued as part of Addendum #1, for updated hardware and hardware set index. The typical entry doors 100, 101 and 110, are aluminum storefront entry doors installed as part of the aluminum-framed storefront and entry system and shall be 8'-5" tall per Door Elevation "B" on Drawing A-13.0. NOTE: All 8'-5" tall doors shall be aluminum entry doors to be provided by the Aluminum-framed storefront system manufacturer. Revise note for Door "B" on Drawing A-13.0 accordingly.

Re-Bid ADD1.8: Page A-3 note 11 – I am not seeing any wood fencing on this drawings. Is this note accurate?

- Page A-3 note 13 – I assume ODNR will be provide the (4) Kayaks and GC will hang these?
- Page A-0.1 Note 7 – The notes say to install new slats, but the layout on the plans appears there is additional fencing to be added. I believe you only want slats added however. Please confirm.
- Please confirm the owner is paying for the building permit.
- Please confirm the owner is paying for any third party testing.
- Do we know what kind of insulation is in the existing buildings attic? Is this blown or batt insulation?
- Please confirm if it is the GC's responsibilities to keep trash/debris out of the water?

A) CLARIFICATION to Drawing A-3, Coded Note #11: Coded Note #13 pertains to the HVAC equipment screen wall as shown in Elevation 5/A-3. The screen wall shall accommodate ODNR signage provided by ODNR, installed by the GC. The screen wall is constructed of ¾ inch thick boards to match typical vertical siding material on the building. In lieu of metal cap (per 5/A-3) install wood fence cap composed of same material as vertical screen wall material.

B) Kayak installation is addressed elsewhere within this Addendum.

C) The privacy slats shall be installed in all chain-link fencing to include the existing fuel tank enclosure and new screen enclosure around the new HVAC equipment as indicated on Drawing A-1.1.

D) ODNR shall pay for associated Building Permit Fees.

E) ODNR shall pay for third-party testing services as required for Code-mandated Special Inspections.

F) We are not aware of what type of insulation exists in the attic of the existing structure.

G) The GC is responsible for cleaning the site on a daily basis to avoid construction trash and debris from entering the water or leaving the secured construction area.

D) **Specifications issued as part of this Addendum**

Re-Bid ADD1.9: Section 01 11 00 – TABLE OF CONTENTS

1. REVISE to ADD Section 08 33 23 – Overhead Coiling Doors

Re-Bid ADD1.10: Section 06 20 13 – EXTERIOR FINISH CARPENTRY

1. REVISE Section 06 20 13 – EXTERIOR FINISH CARPENTRY as follows:
    a. Add Northern Ohio Lumber and Timber as source provider for Arbor Wood products per 2.1.A.1.
    b. REVISE vertical wood dimension from 5/4 inch thick x 5 ½" wide siding to ¾ inch thick x 5 ½" wide siding.

Re-Bid Addendum No. 1

Re-Bid ADD1.11: Section 08 33 23 – OVERHEAD COILING DOORS

1. ADD Section 08 33 23 – Overhead Coiling Doors in its entirety.

Re-Bid ADD1.12: Section 08 71 00 – DOOR HARDWARE

1. DELETE and ADD Section 08 71 00 – Door Hardware in its entirety. A Hardware Set Index is included at the end of Section 08 71 00 that pertains to the Door Schedule on Drawing A-13.0.

Re-Bid ADD1.13: Section 09 65 00 – RESILIENT FLOORING

1. REVISE Section 09 65 00 – Resilient Flooring Basis of Design manufacturer to Tarkett Series: iQ Optima, 24" x 24" x 2mm as indicated. The Basis-of-Design product from Armstrong has been discontinued.

End of Addendum #1

D) ATTACHMENTS:

1) Pre Re-Bid Meeting Minutes and Attendance Sign-in Sheet

2) REVISED SPECIFICATIONS
   Section 00 11 00 – TABLE OF CONTENTS
   Section 08 33 23 – OVERHEAD COILING DOORS
   Section 08 71 00 – DOOR HARDWARE
   Section 09 65 00 – RESILIENT FLOORING

Ohio Department of Natural Resources
Pre-ReBid Meeting Minutes

Project: **FY 23-24 Buck Creek State Park - New Nature Center**

Re-bid from January 12, 2024 Bid Opening

Facility: Buck Creek Nature Center

Date: February 15, 2024
Location: Project Site: 1901 Buck Creek Lane, Springfield, Ohio 45502
Bid Package: **GC Package**
ODNR Project #: 230014.03
FMS Project #: 22009-BC

1. INTRODUCTION

a. All attendees signed the attendance sheet.
b. Any questions about the plans and specifications should be directed to AE Project Manager, Joseph Pax, AIA, Phone Number 614-570-6643, jpax@fmsarchitects.com
c. Attendees (beyond those included in the attached Sign-in / Attendance Sheet):
    1. Kyle Ruha, ODNR
    2. Tracey Marzich, OFCC
    3. William Wigg, Buck Creek Park Manager
    4. Toni Martin, Buck Creek Asst. Park Manager

2. PROJECT OVERVIEW

a. The project involves selective, yet comprehensive demolition, utility connections including gravity sanitary, electric and water, paving & new building located generally in same location as the existing building. Building has concrete foundations, steel frame, and 2" x 6" roof decking over Glu-lam roof framing. The New Nature Center will function as the Lake Loramie Marina Office and includes a Camp Store and Nature Exhibit area focused on inhabitants within and over Lake Loramie.

b. Work is to be ADAAG compliant with walking paths and access to existing parking area.

c. The project maintains the existing concrete columns exposed at the exterior of the building and includes new steel post and beam structure for the new roof framing. The existing dock area (including boat fueling dock) will remain operational (with seasonal use) during construction.

d. The project includes miscellaneous site improvements including removal of partially buried boat exhibit in front of the building and metal slat-chain-link fencing screening of HVAC equipment and fuel tank. Scope of work also includes selective demolition and replacement of concrete pavement against the existing waterway wall, especially at east end of building toward the existing boat ramp.

3. OVERVIEW OF ORIGINAL AND RE-BID PROJECT CONDITIONS

a. The addenda from the Original Bid Documents have been incorporated into the Re-Bid Documents. The Re-Bid documents do NOT include revision clouds denoting changes from the Original Bid Documents. The General Contractors shall review the Re-Bid

documents and are responsible for bidding to reflect content of Re-Bid Drawings and Specifications accordingly.

b. Key Re-Bid revisions include the following:

1. Simplification of the Alternates to One (1) Alternate only. Content of Alternate is in Section 01 23 00 – Alternates and Drawing A-12. The Alternate for fencing around the existing fuel tank (Original Bid) has been removed from the scope of work.

2. The typical wood Roof Deck has been revised from 3" x 6" to 2"x 6" nominal T&G wood roof decking.

3. The typical exterior vertical White Ash thermally-modified T&G siding has been revised from 5/4 inch thick x 5 ½ inch wide boards to 3/4 inch thick x 5 ½ inch wide boards.

4. The typical exterior wall sections /details have been revised to reflect typical selective demolition of the existing interior and breezeway concrete slabs on grade. Scope of work includes new concrete slab on grade within exterior wall footprint as indicated on Drawings.

5. The Engineer's Estimated Cost of Construction has been revised per Item 5.d, below.

4. DELIVERY METHOD
    a. Design / Bid / Build

5. NOTICE TO BIDDERS
    a. Bid Opening: **Thursday, February 29, 2024 at 2:00 pm EST**.
    b. Bids will be posted by 5:00 pm the day of opening on Bid Express. Bidders are not required to attend the official Bid Opening.
    c. Drawings and Specifications are available for download from Bid Express.
    d. Review contracts and estimated costs:
        1) Base Bid - **$2,020,000.00 (Lump Sum). The Original Base Bid Engineer's Estimated Cost = $1,770,00.00 (Lump Sum) which is an increase of $250,000.00**
        2) Allowance: none
        3) Alternate: ADD Alternate (FF&E) = $15,000.00
        4) Unit Costs: none

6. SUBMITTING A BID
    a. The Contractor is responsible for delivering the bid by the time specified in Bid Express, https://bidexpress.com on the electronic Bid Form in Bid Express.
    b. Note: The Bidder will need to allow several days to receive electronic signature from Bid Express if they have not used Bid Express prior.

7. BID SCHEDULE
    a. Review format of bid schedule and how to properly complete
    b. Allowance Bid Items - NONE
    c. Alternate Bid Items, Section 01 23 00, & Drawing A-12 for listing of Alternates
    d. Unit Price Items - NONE
    e. Addenda - Each Bidder shall bear the responsibility to ensure himself/herself that the bid is responsive to all Addenda issued. The contractor shall acknowledge any addendum in the

appropriate location on Bid Express. Failure to receive or acknowledge any Addenda shall not release the Bidder from all obligations contained in such Addenda.

f. The contractor shall not modify content of the bid schedule as this may be cause for rejection of bid.

8. CONSTRUCTION SCHEDULE
   a. Anticipated NTP Date is April 26, 2024 (about 8 weeks after Bid Opening).
   b. Contract Duration 500 Calendar Days (to substantial completion)
   c. Milestone Dates:
      1. Mobilization: Early April 2024?
      2. Submittals early to maintain schedule – especially long lead-time submittals.
   d. **Anticipated Date of Substantial Completion of Work = NTP + 500 days (1 year, 4 months and 13 days) = September 5, 2025**.
   e. Final Completion: (S.C. + 30 days)

Feb 6 2024	Tue	First Advertisement (23 days pre Bid Opening)
Feb 13 2024	Tue	2nd Advertisement (16 days pre Bid Opening)
Feb 15 2024	Thu	Prebid Meeting (14 days to bid Opening) ON SITE
Feb 20 2024	Tue	Final Advertisement (9 days pre Bid Opening)
Feb 23 2024	Fri	Deadline for RFI 2pm (6 days to bid Opening)
Feb 26 2024	Mon	Final Addendum 2pm DEADLINE (3 days to bid Opening)
Feb 29 2024	**Thu**	**Bids due 2pm BIDS OPEN**
Mar 1, 2024	Fri	FMS Interview for apparent successful bidder / Recommendation
Apr 26 2024		NTP for Construction (about 8 weeks after Bid Open)

9. BIDDING AND CONTRACTING REQUIREMENTS
   a. Instructions to Bidders - Refer to Documents 00 21 13 & 00 22 00 of Project Manual
      1) Proposal Form, Bid Guaranty, Insurance, Bonding, etc. - Questions should be directed to Gary Kubicki, OFCC at (614) 809-1877
      2) Requests for Information (RFI's) must be submitted 7 Days before bid opening.
      3) All questions asked during the Pre-bid meeting shall be submitted formally in a RFI to ensure inclusion in future Addenda.
      4) Substitutions - All bids will be evaluated based on the standard referenced in the documents. Substitutions Requests must be submitted 10 days before bid opening.
         i. Proposed substitutions must include side-by-side comparison with specs of basis of design to be considered by AE.
         ii. The name and complete description of the proposed Substitution, including Drawings, performance and test data, and other information necessary for a complete evaluation.
         iii. Contractor to submit a statement setting forth any changes that the Proposed Substitution will require in the Contract Documents or the Project.
         iv. If the A/E approves the Proposed Substitution, the A/E shall issue an Addendum acknowledging acceptance of proposed Substitution.
         v. A Substitution Form shall be issued as part of Addendum #1 (to include Pre-Bid Attendees list and replies to RFIs as received). Section 01 25 00 – Substitution Procedures shall include required Substitution Form accordingly.

5) Bid Package Checklist - The following items are the minimum that are to be included in the proposal package.
    i. Form of Bid
    ii. Corporation Signing Authority form uploaded
    iii. Request for Taxpayer ID Number uploaded
    iv. Bid Security Form (Bid Bond or Cashier's Check) – Original to DNR within three days of bid
    v. Cert. of Compliance showing Surety is licensed to do business in Ohio
    vi. Power of Attorney for Surety Form uploaded
    vii. Drug Free Workplace Compliance Certificates
    viii. Bid Schedule
    ix. Proposed EDGE Certified Business/ EDGE Program Commitment
    x. Bidder Qualifications
    xi. Bidder Affirmation and Disclosure
    xii. Bidder Certification Box Checked

10. REQUIRED CONDITIONS PRECEDENT
    a. EDGE – 5% requirement per Agreement Form in the Specs.
    b. ARPA Funded project (American Rescue Plan Act). Contractors shall be SAM Registered (The System for Award Management of the U.S. Government).
    c. DFSWP
    d. EEO
    e. Insurance Certificate
    f. Insurance Policies
    g. Original of Bond
    h. W-9
    i. Builder's Risk Insurance Certificate and policy
    j. Workers Compensation Certificate
    k. Standard Affirmation and Disclosure (Executive Order 2022-02D)
    l. Certificate of Good Standing (Foreign Corporation Only)
    m. Power of Atty. Designating State of Ohio as Bidders Agent for accepting service of summons (Non-Resident of State Individuals Only)
    n. Contractor License (if Required)
    o. Signed Contracts
    p. WAGES AND HOURS
        1) This is a state of Ohio Prevailing Wage Project and any questions should be directed to Prevailing Wage Coordinator Questions should be directed to Kimberly Jacobs or Gary Kubicki, OFCC at (614) 809-1877. The current Clark County Prevailing Wage Rates are included in the Project Manual – Section 00 73 43.
    q. EDGE AFFIDAVIT - SECTION 00 45 39
        1) Refer to section to assist contractor in submitting required certificate with bid.
        2) This project has a 5% EDGE Participation goal minimum.
        3) If bidder does not commit to the published EDGE goal the Bidder will need to seek a waiver and demonstrate that good faith efforts were exhausted to reach that goal. **A waiver is extremely difficult to obtain.** It is best to select Option A on Bid Express to meet or exceed the goal.
        4) Common EDGE misconceptions to be aware of:

i. If you lay off your personnel and have them go work for the EDGE company, THIS DOESN'T COUNT FOR EDGE
ii. Loaning your backhoe (or any equipment) and having the EDGE company operate, THIS DOESN'T COUNT FOR EDGE. The EDGE company must use their own equipment.
iii. Do not order materials from an EDGE supplier that is going to turn around and then order from NON EDGE supplier, this is not how the process is supposed to work.
iv. If GC's are having trouble finding EDGE contractors please contact David Moore or Tracey Marzich at OFCC as a resource.
v. 5% EDGE is the law.
vi. Make sure your EDGE company is certified BEFORE you list them, OFCC can assist with questions related to the certification process.

11. SAFETY
    a. Contractor shall design and implement its own safety program and submit to Consultant for review.
    b. Hard Hats, Safety Glasses, & Proper Attire
    c. Housekeeping / Site Clean-up
    d. Dig Permit, Welding and Cutting Permit
    e. Fire Prevention
    f. Fuel Line Protection and awareness. ODNR Staff safety when operating the fuel punp on the adjacent dock – provide safety (overhead and otherwise) to protect worker access to the dock.

12. SCOPE OF WORK
    a. Contract Documents
        1) Discuss the items of work in detail and review drawings and specifications as necessary.

13. WORK OR SERVICES BY OTHERS
    a. Utilities to be supplied by:
    (DP&L) Electric Utility
    Clark County Sewer
    Springfield Water
    Data - conduit only
        1) ALL Utilities are in place near building, utility connections are per documents
            1. Confirming Tap Fees / Permit Fees and Special Inspections
            2. DNR conscious of screening utility items to enhance natural setting
        2) Utilities paid for by ODNR- **PROVIDED RESPONSIBLE USE IN SERVICE OF PROJECT**
        3) Temp lighting, job trailer etc

14. PERMITS
    a. Review permits and responsibility. Commerce Permit Partial Approval in hand/ Bid Set matches Permit Addendum set, do not anticipate major changes.
    b. Commerce Inspector overview
        1. Commerce Inspectors are OK with minor inquiries by phone and can sometimes accept photos to save an inspection trip.
        2. Bidder should anticipate requesting Electrical and Plumbing rough-in complete prior to Framing inspection.

3. Commerce Inspectors prefer associated subcontractors be on-site for inspections, but they are not required by law to be on-site. Please call for inspection (2) two days in advance to inspection.
4. Virtual inspections are acceptable via MS Teams for LIVE virtual inspections on many portions of the work, but Final Inspection must occur in person.

15. PROJECT RESTRICTIONS/SITE USAGE (Refer to Division 1 of General Requirements) 01 10 00 Summary of Work
    a. Shared Site (public will be in the area)
    b. Contractor shall prepare and submit a Site Utilization Plan (FENCE)
    c. Access to Site or Building / Haul Roads
    d. Site Security / Fencing
    e. Job Storage
    f. Staging/Laydown Areas
    g. Parking
    h. Work Hours
    i. Temporary Facilities
    j. Field Office for Construction Administration (Within building)?
    k. Protection of Existing Utilities
    l. Noise and Vibrations
    m. Demolition Waste

16. COMMON BIDDER PITFALLS (that will delay contracting process or possibly cause rejection)
    a. Not submitting original bond within 3 days of bid date.
    b. EDGE Option A, B or C is not selected on the EDGE Commitment page in the Bid Form.
    c. Bidder fails to enter a $ amount, “no change”, or $0 for All Alternates in the Bid Form
    d. Company name on Bid Form or Bond does not match the S.O.S. Business Filings.
    e. Expired Certificates (EEO, Workers Comp., Drug Free)
    f. Bidder is not responsive to the time sensitive nature of the Bidder’s Qualifications Request or Notice of Intent to Award submittal requirements.

17. VISIT PROJECT SITE
    a. Bidders are welcome to walk the site and areas of work in advance of submitting bids. – Today is best opportunity to observe existing conditions, but site remains open for view.
        1. Bidders, at their discretion, ,may contact Buck Creek Park Manager, Will Wigg, to arrange a site visit. Contact information for Will Wigg will be issued as part of Addendum #1.

-END OF MEETING AGENDA-

SECTION 00 01 10 - TABLE OF CONTENTS

Ohio Department of Natural Resources
Buck Creek State Park
New Nature Center – Clark County, Ohio
Project No.: DNR-230014.03
FMS Project No. 22009

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

DIVISION 8 - DOORS AND WINDOWS

DIVISION 9 - FINISHES

DIVISION 10 – SPECIALTIES

DIVISION 11 - EQUIPMENT

NOT USED

DIVISION 21 – FIRE SUPPRESSION

NOT USED

DIVISION 22 – PLUMBING

SECTION 06 20 13 - EXTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Dimensional vertical exterior wood siding, thermally-modified with preservative treatment. Specie: White Ash as basis of design. 5/4 inch thick x 5 ½ inch wide x length indicated on drawings. Provide with vertical sides of boards tongue and groove profile to allow concealed fastening to horizontal rainscreen furring strips.

B. Related Requirements:

1. Section 06 10 00 "Rough Carpentry" for furring, blocking, and other carpentry work not exposed to view and for framing exposed to view.
2. Section 09 91 00 " Painting" for priming and backpriming of exterior finish carpentry.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials, dimensions, profiles, textures, and colors and include construction and application details.
1. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced before shipment to Project site to levels specified.

B. Samples for Initial Selection: For each type of product involving selection of colors, profiles, or textures.

1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant-treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber, plywood, and other panels flat with spacers between each bundle to provide air circulation. Protect materials from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

1.6 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecast weather conditions permit work to be performed and at least one coat of specified finish can be applied without exposure to rain, snow, or dampness.

1. For exterior ornamental wood columns, comply with manufacturer's written instructions and warranty requirements.

B. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.

1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 EXTERIOR VERTICAL WOOD SIDING

A. Manufacturers:
1. Arbor Wood Company (Basis of Design) T: 855-414-2727 (Northern Ohio Lumber and Timber)
2. Thermory (T: 585-591-6590)
3. Cambia by NFP (603-642-3665

B. Dimensional vertical exterior wood siding:
1. Specie: White Ash as basis of design.
2. Size: ~~5/4~~ ¾ inch thick x 5 ½ inch wide x length indicated on drawings.
3. Treatment: Thermally-modified with proprietary treatment. Ash wood naturally weathers to a light gray / silver finish.
4. Face Finish: Smooth on all exposed sides.
5. Edge Treatment: Provide tongue and groove profile at sides of boards. Typical vertical edge of boards shall be manufacturer’s standard profile.

2.2 HORIZONTAL RAINSCREEN FURRING STRIPS

A. Exterior rated, pressure-treated wood horizontal furring strips to accommodate vertical wood siding installation.
1. Size: 1 inch x 4 inch nominal secured through continuous foil-faced rigid board insulation and plywood wall sheathing to metal wall studs.

2. Install horizontal furring strips with gaps at 24” OC maximum to allow air and water movement within the air space.

2.3 MISCELLANEOUS EXTERIOR STANDING AND RUNNING TRIM

A. Typical exterior trim at exterior / interior corners and door / window openings shall be 5/4 inch thick x 5 ½ inch with overlay corners to conceal rainscreen air space gap.

B. Install typical standing and running trim to align with exterior face of typical vertical wall boards.

2.4 MISCELLANEOUS MATERIALS

A. Fasteners for Exterior Finish Carpentry: Provide nails or screws, in sufficient length to penetrate through horizontal furring, insulation board and exterior plywood sheathing to cold-formed metal wall framing.

1. For face-fastening siding, provide **hot-dip galvanized-steel siding nails.**.
2. For prefinished items, provide matching prefinished aluminum fasteners where face fastening is required.
3. For pressure-preservative-treated wood, provide **hot-dip galvanized-steel** fasteners.
4. For applications not otherwise indicated, provide **hot-dip galvanized-steel** fasteners.

B. Wood Glue: Waterproof resorcinol glue recommended by manufacturer for exterior carpentry use.

C. Flashing: Comply with requirements in Section 07 62 00 "Sheet Metal Flashing and Trim" for flashing materials installed in exterior finish carpentry.

1. Horizontal Joint Flashing for Panel Siding: Preformed, **galvanized-steel** Z-shaped flashing.

D. Sealants: Latex, complying with ASTM C 834, **Type OP, Grade NF** and applicable requirements in Section 07 92 00 "Joint Sealants" and recommended by sealant and substrate manufacturers for intended application.

2.5 FABRICATION

A. Back out or kerf backs of standing and running trim wider than 5 inches (125 mm), except members with ends exposed in finished work.

B. Ease edges of lumber less than 1 inch (25 mm) in nominal thickness to 1/16-inch (1.5-mm) radius and edges of lumber 1 inch (25 mm) or more in nominal thickness to 1/8-inch (3-mm) radius.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates of projections and substances detrimental to application.

B. Prime lumber and moldings to be painted, including both faces and edges, unless factory primed. Cut to required lengths and prime ends. Comply with requirements in Section 099113 "Exterior Painting."

3.3 INSTALLATION, GENERAL

A. Do not use materials that are unsound, warped, improperly treated or finished, inadequately seasoned, or too small to fabricate with proper jointing arrangements.

1. Do not use manufactured units with defective surfaces, sizes, or patterns.

B. Install exterior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.

1. Scribe and cut exterior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
2. Install to tolerance of 1/8 inch in 96 inches (3 mm in 2438 mm) for level and plumb. Install adjoining exterior finish carpentry with 1/32-inch (0.8-mm) maximum offset for flush installation and 1/16-inch (1.5-mm) maximum offset for reveal installation.
3. Coordinate exterior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate exterior finish carpentry.

3.4 STANDING AND RUNNING TRIM INSTALLATION

A. Install flat-grain lumber with bark side exposed to weather.

B. Install trim with minimum number of joints as is practical, using full-length pieces from maximum lengths of lumber available. Do not use pieces less than 24 inches (610 mm) long, except where necessary.

1. Use scarf joints for end-to-end joints.
2. Stagger end joints in adjacent and related members.

C. Fit exterior joints to exclude water. Cope at returns and miter at corners to produce tight-fitting joints, with full-surface contact throughout length of joint. Plane backs of casings to provide uniform thickness across joints, where necessary for alignment.

D. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.

3.5 SIDING INSTALLATION

A. Install siding to comply with manufacturer's written instructions **and warranty requirements**.

B. Flashing: Install metal flashing as indicated on Drawings and as recommended by siding manufacturer.

C. Finish: Apply finish within two weeks of installation.

3.6 CLEANING

A. Clean exterior finish carpentry on exposed and semi-exposed surfaces. Touch up factory-applied finishes to restore damaged or soiled areas.

3.7 PROTECTION

A. Protect installed products from damage from weather and other causes during construction.

B. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.

1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 06 20 13

SECTION 08 33 23 - OVERHEAD COILING DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Service doors.

1.3 ACTION SUBMITTALS

A. Product Data: For each type and size of overhead coiling door and accessory.

1. Include construction details, material descriptions, dimensions of individual components, profiles for slats, and finishes.

B. Shop Drawings: For each installation and for special components not dimensioned or detailed in manufacturer's product data.

1. Include plans, elevations, sections, and mounting details.
2. Include details of equipment assemblies, and indicate dimensions, required clearances, method of field assembly, components, and location and size of each field connection.
3. Include points of attachment and their corresponding static and dynamic loads imposed on structure.
4. For exterior components, include details of provisions for assembly expansion and contraction and for excluding and draining moisture to the exterior.
5. Show locations of controls, locking devices, and other accessories.

C. Samples for Initial Selection: Manufacturer's finish charts showing full range of colors and textures available for units with factory-applied finishes.

1. Include similar Samples of accessories involving color selection.

D. Samples for Verification: For each type of exposed finish on the following components, in manufacturer's standard sizes:

1. Curtain slats.
2. Bottom bar.
3. Guides.
4. Brackets.
5. Hood.
6. Locking device(s).
7. Include similar Samples of accessories involving color selection.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For overhead coiling doors to include in maintenance manuals.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer for both installation and maintenance of units required for this Project.

1. Maintenance Proximity: Not more than two hours' normal travel time from Installer's place of business to Project site.

PART 2 - PRODUCTS

2.1 MANUFACTURERS, GENERAL

A. Source Limitations: Obtain overhead coiling doors from single source from single manufacturer.

1. Obtain operators and controls from overhead coiling door manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Structural Performance, Exterior Doors: Capable of withstanding the design wind loads.

1. Design Wind Load: As indicated on Drawings.
2. Testing: According to ASTM E 330.
3. Deflection Limits: Design overhead coiling doors to withstand design wind load without evidencing permanent deformation or disengagement of door components.
4. Operability under Wind Load: Design overhead coiling doors to remain operable under uniform pressure (velocity pressure) of 20 lbf/sq. ft. (960 Pa) wind load, acting inward and outward.

2.3 DOOR ASSEMBLY

A. Service Door: Overhead coiling door formed with curtain of interlocking metal slats.

1. Basis of Design: Overhead Door Company

2. Acceptable equals: Cookson Door Products, Raynor, Ritehite, Cornell

B. Operation Cycles: Door components and operators capable of operating for not less than 50,000. One operation cycle is complete when a door is opened from the closed position to the fully open position and returned to the closed position.

1. Include tamperproof cycle counter.

C. Air Infiltration: Maximum rate of 1.0 cfm/sq. ft. (5.1 L/s per sq. m) at 15 and 25 mph (24.1 and 40.2 km/h) when tested according to ASTM E 283.

D. STC Rating: Not Applicable

E. Curtain R-Value: 4.5 deg F x h x sq. ft./Btu (0.792 K x sq. m/W.

F. Door Curtain Material: Aluminum.

G. Door Curtain Slats: Flat profile slats of 1-7/8-inch (48-mm) center-to-center height.
1. Gasket Seal. Manufacturer's standard continuous gaskets between slats.

H. Bottom Bar: Two angles, each not less than 1-1/2 by 1-1/2 by 1/8 inch (38 by 38 by 3 mm) thick fabricated from hot-dip galvanized steel and finished to match door.

I. Curtain Jamb Guides: Galvanized steel with exposed finish matching curtain slats.

J. Hood: Match curtain material and finish.

1. Shape: Round .
2. Mounting: Face of wall.

K. Locking Devices: Equip door with locking device assembly.

1. Locking Device Assembly: Cremone type, both jamb sides locking bars, operable from outside only, with cylinder .

L. Manual Door Operator: Push-up operation.

M. Curtain Accessories: Equip door with push/pull handles.

N. Door Finish:

1. Aluminum Finish: Clear anodized

2.4 MATERIALS, GENERAL

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.5 DOOR CURTAIN MATERIALS AND CONSTRUCTION

A. Door Curtains: Fabricate overhead coiling-door curtain of interlocking metal slats, designed to withstand wind loading indicated, in a continuous length for width of door without splices. Unless otherwise indicated, provide slats of thickness and mechanical properties recommended by door manufacturer for performance, size, and type of door indicated, and as follows:
1. Aluminum Door Curtain Slats: ASTM B 209 (ASTM B 209M) sheet or ASTM B 221 (ASTM B 221M) extrusions, alloy and temper standard with manufacturer for type of use and finish indicated; thickness of 0.050 inch (1.27 mm); and as required.

2. Metal Interior Curtain-Slat Facing: Match metal of exterior curtain-slat face, with minimum aluminum thickness of 0.032 inch (0.80 mm).

B. Curtain Jamb Guides: Manufacturer's standard angles or channels and angles of same material and finish as curtain slats unless otherwise indicated, with sufficient depth and strength to retain curtain, to allow curtain to operate smoothly, and to withstand loading. Slot bolt holes for guide adjustment. Provide removable stops on guides to prevent overtravel of curtain.

2.6 HOODS

A. General: Form sheet metal hood to entirely enclose coiled curtain and operating mechanism at opening head. Contour to fit end brackets to which hood is attached. Roll and reinforce top and bottom edges for stiffness. Form closed ends for surface-mounted hoods and fascia for any portion of between-jamb mounting that projects beyond wall face. Equip hood with intermediate support brackets as required to prevent sagging.
1. Aluminum: 0.040-inch- (1.02-mm-) thick aluminum sheet complying with ASTM B 209 (ASTM B 209M), of alloy and temper recommended by manufacturer and finisher for type of use and finish indicated.

2.7 LOCKING DEVICES

A. Slide Bolt: Fabricate with side-locking bolts to engage through slots in tracks for locking by padlock, located on both left and right jamb sides, operable from coil side.

B. Locking Device Assembly: Fabricate with cylinder lock, spring-loaded dead bolt, operating handle, cam plate, and adjustable locking bars to engage through slots in tracks.

1. Lock Cylinders: Cylinders standard with manufacturer and keyed to building keying system.
2. Keys: Two for each cylinder.

C. .

2.8 CURTAIN ACCESSORIES

A. Push/Pull Handles: Equip each push-up-operated or emergency-operated door with lifting handles on each side of door, finished to match door.

2.9 COUNTERBALANCING MECHANISM

A. General: Counterbalance doors by means of manufacturer's standard mechanism with an adjustable-tension, steel helical torsion spring mounted around a steel shaft and contained in a spring barrel connected to top of curtain with barrel rings. Use grease-sealed bearings or self-lubricating graphite bearings for rotating members.

B. Counterbalance Barrel: Fabricate spring barrel of manufacturer's standard hot-formed, structural-quality, seamless carbon-steel pipe, of sufficient diameter and wall thickness to support rolled-up curtain without distortion of slats and to limit barrel deflection to not more than 0.03 in./ft. (2.5 mm/m) of span under full load.

C. Counterbalance Spring: One or more oil-tempered, heat-treated steel helical torsion springs. Size springs to counterbalance weight of curtain, with uniform adjustment accessible from outside barrel. Secure ends of springs to barrel and shaft with cast-steel barrel plugs.

D. Torsion Rod for Counterbalance Shaft: Fabricate of manufacturer's standard cold-rolled steel, sized to hold fixed spring ends and carry torsional load.

E. Brackets: Manufacturer's standard mounting brackets of either cast iron or cold-rolled steel plate.

2.10 MANUAL DOOR OPERATORS

A. General: Equip door with manual door operator by door manufacturer.

B. Push-up Door Operation: Lift handles and pull rope for raising and lowering doors, with counterbalance mechanism designed so that required lift or pull for door operation does not exceed 25 lbf (111 N).

2.11 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM/NOMMA's "Metal Finishes Manual for Architectural and Metal Products (AMP 500-06)" for recommendations for applying and designating finishes.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.12 ALUMINUM FINISHES

A. Clear Anodic Finish: AAMA 611, [AA-M12C22A41, Class I, 0.018 mm] or thicker.

B. Color Anodic Finish: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates areas and conditions, with Installer present, for compliance with requirements for substrate construction and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install overhead coiling doors and operating equipment complete with necessary hardware, anchors, inserts, hangers, and equipment supports; according to manufacturer's written instructions and as specified.

B. Install overhead coiling doors, hoods, controls, and operators at the mounting locations indicated for each door.

C. Accessibility: Install overhead coiling doors, switches, and controls along accessible routes in compliance with regulatory requirements for accessibility.

3.3 STARTUP SERVICE

A. Engage a factory-authorized service representative to perform startup service.

1. Perform installation and startup checks according to manufacturer's written instructions.
2. Test and adjust controls and safety devices. Replace damaged and malfunctioning controls and equipment.

3.4 ADJUSTING

A. Adjust hardware and moving parts to function smoothly so that doors operate easily, free of warp, twist, or distortion.

1. Adjust exterior doors and components to be weather-resistant.

B. Lubricate bearings and sliding parts as recommended by manufacturer.

3.5 MAINTENANCE SERVICE

A. Initial Maintenance Service: Beginning at Substantial Completion, maintenance service shall include 12 months' full maintenance by skilled employees of coiling-door Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for door operation. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.

1. Perform maintenance, including emergency callback service, during normal working hours.
2. Include 24-hour-per-day, seven-day-per-week, emergency callback service.

3.6 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain overhead coiling doors.

END OF SECTION 08 33 23

SECTION 087100 - DOOR HARDWARE (Section re-issued in its entirety)

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes:

1. Mechanical and electrified door hardware
2. Electronic access control system components

B. Section excludes:

1. Windows
2. Cabinets (casework), including locks in cabinets
3. Signage
4. Toilet accessories
5. Overhead doors

C. Related Sections:

1. Division 01 "General Requirements" sections for Allowances, Alternates, Owner Furnished Contractor Installed, Project Management and Coordination.
2. Division 06 Section "Rough Carpentry"
3. Division 06 Section "Finish Carpentry"
4. Division 07 Section "Joint Sealants" for sealant requirements applicable to threshold installation specified in this section.
5. Division 08 Sections:
   a. "Metal Doors and Frames"
   b. "Flush Wood Doors"
   c. "Stile and Rail Wood Doors"
   d. "Interior Aluminum Doors and Frames"
   e. "Aluminum-Framed Entrances and Storefronts"
   f. "Stainless Steel Doors and Frames"
   g. "Special Function Doors"
   h. "Entrances"
6. Division 26 "Electrical" sections for connections to electrical power system and for low-voltage wiring.
7. Division 28 "Electronic Safety and Security" sections for coordination with other components of electronic access control system and fire alarm system.

1.02 REFERENCES

A. UL LLC

1. UL 10B - Fire Test of Door Assemblies
2. UL 10C - Positive Pressure Test of Fire Door Assemblies
3. UL 1784 - Air Leakage Tests of Door Assemblies
4. UL 305 - Panic Hardware

B. DHI - Door and Hardware Institute

1. Sequence and Format for the Hardware Schedule
2. Recommended Locations for Builders Hardware
3. Keying Systems and Nomenclature
4. Installation Guide for Doors and Hardware

C. NFPA – National Fire Protection Association

1. NFPA 70 – National Electric Code
2. NFPA 80 – 2016 Edition – Standard for Fire Doors and Other Opening Protectives
3. NFPA 101 – Life Safety Code
4. NFPA 105 – Smoke and Draft Control Door Assemblies
5. NFPA 252 – Fire Tests of Door Assemblies

D. ANSI - American National Standards Institute

1. ANSI A117.1 – 2017 Edition – Accessible and Usable Buildings and Facilities
2. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties
3. ANSI/BHMA A156.28 - Recommended Practices for Keying Systems
4. ANSI/WDMA I.S. 1A - Interior Architectural Wood Flush Doors
5. ANSI/SDI A250.8 - Standard Steel Doors and Frames

1.03 SUBMITTALS

A. General:

1. Submit in accordance with Conditions of Contract and Division 01 Submittal Procedures.
2. Prior to forwarding submittal:
   a. Review drawings and Sections from related trades to verify compatibility with specified hardware.
   b. Highlight, encircle, or otherwise specifically identify on submittals: deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.

B. Action Submittals:

1. Product Data: Submit technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
2. Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:
   a. Wiring Diagrams: For power, signal, and control wiring and including:
      1) Details of interface of electrified door hardware and building safety and security systems.
      2) Schematic diagram of systems that interface with electrified door hardware.
      3) Point-to-point wiring.
      4) Risers.

3. Samples for Verification: If requested by Architect, submit production sample of requested door hardware unit in finish indicated and tagged with full description for coordination with schedule.

a. Samples will be returned to supplier. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.

4. Door Hardware Schedule:
   a. Submit concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work critical in Project construction schedule.
   b. Submit under direct supervision of a Door Hardware Institute (DHI) certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule published by DHI.
   c. Indicate complete designations of each item required for each opening, include:
      1) Door Index: door number, heading number, and Architect's hardware set number.
      2) Quantity, type, style, function, size, and finish of each hardware item.
      3) Name and manufacturer of each item.
      4) Fastenings and other pertinent information.
      5) Location of each hardware set cross-referenced to indications on Drawings.
      6) Explanation of all abbreviations, symbols, and codes contained in schedule.
      7) Mounting locations for hardware.
      8) Door and frame sizes and materials.
      9) Degree of door swing and handing.
      10) Operational Description of openings with electrified hardware covering egress, ingress (access), and fire/smoke alarm connections.

5. Key Schedule:
   a. After Keying Conference, provide keying schedule that includes levels of keying, explanations of key system's function, key symbols used, and door numbers controlled.
   b. Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
   c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
   d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
   e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion. Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
   f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.

C. Informational Submittals:

1. Provide Qualification Data for Supplier, Installer and Architectural Hardware Consultant.
2. Provide Product Data:
   a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.
   b. Include warranties for specified door hardware.

D. Closeout Submittals:

1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:
   a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
   b. Catalog pages for each product.
   c. Final approved hardware schedule edited to reflect conditions as installed.
   d. Final keying schedule
   e. Copy of warranties including appropriate reference numbers for manufacturers to identify project.
   f. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.

E. Inspection and Testing:

1. Submit written reports to the Owner and Authority Having Jurisdiction (AHJ) of the results of functional testing and inspection for:
   a. Fire door assemblies, in compliance with NFPA 80.
   b. Required egress door assemblies, in compliance with NFPA 101.

1.04 QUALITY ASSURANCE

A. Qualifications and Responsibilities:

1. Supplier: Recognized architectural hardware supplier with a minimum of 5 years documented experience supplying both mechanical and electromechanical door hardware similar in quantity, type, and quality to that indicated for this Project. Supplier to be recognized as a factory direct distributor by the manufacturer of the primary materials with a warehousing facility in the Project's vicinity. Supplier to have on staff, a certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.
2. Installer: Qualified tradesperson skilled in the application of commercial grade hardware with experience installing door hardware similar in quantity, type, and quality as indicated for this Project.
3. Architectural Hardware Consultant: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:
   a. For door hardware: DHI certified AHC or DHC.
   b. Can provide installation and technical data to Architect and other related subcontractors.
   c. Can inspect and verify components are in working order upon completion of installation.
   d. Capable of producing wiring diagram and coordinating installation of electrified hardware with Architect and electrical engineers.

4. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.

B. Certifications:

1. Fire-Rated Door Openings:
   a. Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction.

b. Provide only items of door hardware that are listed products tested by UL LLC, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.

2. Smoke and Draft Control Door Assemblies:
   a. Provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105
   b. Comply with the maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.

3. Electrified Door Hardware
   a. Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.

4. Accessibility Requirements:
   a. Comply with governing accessibility regulations cited in "REFERENCES" article 087100, 1.02.D3 herein for door hardware on doors in an accessible route. This project must comply with all Federal Americans with Disability Act regulations and all Local Accessibility Regulations.

C. Pre-Installation Meetings

1. Keying Conference
   a. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
      1) Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
      2) Preliminary key system schematic diagram.
      3) Requirements for key control system.
      4) Requirements for access control.
      5) Address for delivery of keys.

2. Pre-installation Conference
   a. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
   b. Inspect and discuss preparatory work performed by other trades.
   c. Inspect and discuss electrical roughing-in for electrified door hardware.
   d. Review sequence of operation for each type of electrified door hardware.
   e. Review required testing, inspecting, and certifying procedures.
   f. Review questions or concerns related to proper installation and adjustment of door hardware.

3. Electrified Hardware Coordination Conference:
   a. Prior to ordering electrified hardware, schedule and hold meeting to coordinate door hardware with security, electrical, doors and frames, and other related suppliers.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site. Promptly replace products damaged during shipping.

B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package. Deliver each article of hardware in manufacturer's original packaging.

C. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.

D. Provide secure lock-up for door hardware delivered to Project. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.

E. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.

F. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

1.06 COORDINATION

A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete.

B. Installation Templates: Distribute for doors, frames, and other work specified to be factory or shop prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.

D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

1.07 WARRANTY

A. Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within published warranty period.

1. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.
2. Warranty Period: Beginning from date of Substantial Completion, for durations indicated in manufacturer's published listings.
   a. Mechanical Warranty
      1) Locks
         a) 3 years
      2) Exit Devices
         a) 3 years
      3) Closers
         a) 30 years
      4) Automatic Operators
         a) 2 years
   b. Electrical Warranty
      1) Exit Devices

a) 1 year

1.08 MAINTENANCE

A. Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

B. Turn over unused materials to Owner for maintenance purposes.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. The Owner requires use of certain products for their unique characteristics and project suitability to ensure continuity of existing and future performance and maintenance standards. After investigating available product offerings, the Awarding Authority has elected to prepare proprietary specifications. These products are specified with the notation: "No Substitute."

1. Where "No Substitute" is noted, submittals and substitution requests for other products will not be considered.

B. Approval of alternate manufacturers and/or products other than those listed as "Scheduled Manufacturer" or "Acceptable Manufacturers" in the individual article for the product category are only to be considered by official substitution request in accordance with section 01 25 00.

C. Approval of products from manufacturers indicated in "Acceptable Manufacturers" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.

D. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

2.02 MATERIALS

A. Fabrication

1. Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. provide screws according to manufacturer’s recognized installation standards for application intended.
2. Finish exposed screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
3. Provide concealed fasteners wherever possible for hardware units exposed when door is closed. Coordinate with “Metal Doors and Frames”, “Flush Wood Doors”, “Stile and Rail Wood Doors” to ensure proper reinforcements. Advise the Architect where visible fasteners, such as thru bolts, are required.

B. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.

1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

2.03 HINGES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Ives 5BB series

2. Acceptable Manufacturers and Products:
   a. Hager BB1191/1279 series
   b. Best FBB series

B. Requirements:

1. Provide hinges conforming to ANSI/BHMA A156.1.
2. Provide five knuckle, ball bearing hinges.
3. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:
   a. Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches (114 mm) high
   b. Interior: Standard weight, steel, 4-1/2 inches (114 mm) high

4. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide:
   a. Exterior: Heavy weight, bronze/stainless steel, 5 inches (127 mm) high
   b. Interior: Heavy weight, steel, 5 inches (127 mm) high

5. 2 inches or thicker doors:
   a. Exterior: Heavy weight, bronze or stainless steel, 5 inches (127 mm) high
   b. Interior: Heavy weight, steel, 5 inches (127 mm) high

6. Adjust hinge width for door, frame, and wall conditions to allow proper degree of opening.
7. Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
8. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
   a. Steel Hinges: Steel pins
   b. Non-Ferrous Hinges: Stainless steel pins
   c. Out-Swinging Exterior Doors: Non-removable pins
   d. Out-Swinging Interior Lockable Doors: Non-removable pins
   e. Interior Non-lockable Doors: Non-rising pins

9. Provide hinges with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to electrified locking component. Provide mortar guard for each electrified hinge specified.

2.04 CONTINUOUS HINGES

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Select
   b. Best

B. Requirements:

1. Provide aluminum geared continuous hinges conforming to ANSI/BHMA A156.26, Grade 1.
2. Provide aluminum geared continuous hinges, where specified in the hardware sets, fabricated from 6063-T6 aluminum.
3. Provide split nylon bearings at each hinge knuckle for quiet, smooth, self-lubricating operation.
4. Provide hinges capable of supporting door weights up to 450 pounds, and successfully tested for 1,500,000 cycles.
5. On fire-rated doors, provide aluminum geared continuous hinges classified for use on rated doors by testing agency acceptable to authority having jurisdiction.
6. Provide aluminum geared continuous hinges with electrified option scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware.
7. Provide hinges 1 inch (25 mm) shorter in length than nominal height of door, unless otherwise noted or door details require shorter length and with symmetrical hole pattern.

2.05 ELECTRIC POWER TRANSFER

A. Manufacturers:

1. Scheduled Manufacturer and Product:
   a. Von Duprin EPT-10

2. Acceptable Manufacturers and Products:
   a. Securitron CEPT-10
   b. Precision EPT-12C

B. Requirements:

1. Provide power transfer with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware.
2. Locate electric power transfer per manufacturer's template and UL requirements, unless interference with operation of door or other hardware items.

2.06 FLUSH BOLTS

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Burns
   b. Trimco

B. Requirements:

1. Provide automatic, constant latching, and manual flush bolts with forged bronze or stainless-steel face plates, extruded brass levers, and with wrought brass guides and strikes. Provide 12 inch (305 mm) steel or brass rods at doors up to 90 inches (2286 mm) in height. For doors over 90 inches (2286 mm) in height increase top rods by 6 inches (152 mm) for each additional 6 inches (152 mm) of door height. Provide dust-proof strikes at each bottom flush bolt.

2.07 COORDINATORS

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Burns
   b. Trimco

B. Requirements:

1. Where pairs of doors are equipped with automatic flush bolts, an astragal, or other hardware that requires synchronized closing of the doors, provide bar-type coordinating device, surface applied to underside of stop at frame head.
2. Provide filler bar of correct length for unit to span entire width of opening, and appropriate brackets for parallel arm door closers, surface vertical rod exit device strikes, or other stop mounted hardware. Factory-prepared coordinators for vertical rod devices as specified.

2.08 MORTISE LOCKS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Schlage L9000 series

2. Acceptable Manufacturers and Products:
   a. Accurate 9000/9100 series
   b. Best 45H series

B. Requirements:

1. Provide mortise locks conforming to ANSI/BHMA A156.13 Series 1000, Grade 1, and UL Listed for 3-hour fire doors.
2. Indicators: Where specified, provide indicator window measuring a minimum 2-3/5-inch x 3/5 inch with 180-degree visibility. Provide messages color-coded using ANSI Z535 Safety Red with full text and/or symbols, as scheduled, for easy visibility. When applicable allows for lock status indication on both sides of the door.
3. Provide locks manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance.
4. Provide lock case that is multi-function and field reversible for handing without opening case. Cylinders: Refer to "KEYING" article, herein.

5. Provide locks with standard 2-3/4 inches (70 mm) backset with full 3/4 inch (19 mm) throw stainless steel mechanical anti-friction latchbolt. Provide deadbolt with full 1-inch (25 mm) throw, constructed of stainless steel.
6. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim. Provide electrified options as scheduled in the hardware sets. Where scheduled, provide switches and sensors integrated into the locks and latches.
7. Provide motor based electrified locksets that comply with the following requirements:
   a. Universal input voltage – single chassis accepts 12 or 24VDC to allow for changes in the field without changing lock chassis.
   b. Fail Safe/Fail Secure – changing mode between electrically locked (fail safe) and electrically unlocked (fail secure) is field selectable without opening the lock case.
   c. Low maximum current draw – maximum 0.4 amps to allow for multiple locks on a single power supply.
   d. Low holding current – maximum 0.01 amps to produce minimal heat, eliminate “hot levers” in electrically locked applications, and to provide reliable operation in wood doors that provide minimal ventilation and air flow.
   e. Connections – provide quick-connect Molex system standard.

8. Lever Trim: Solid brass, bronze, or stainless steel, cast or forged in design specified, with wrought roses and external lever spring cages. Provide thru-bolted levers with 2-piece spindles.
   a. Lever Design: 06A

2.09 EXIT DEVICES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Von Duprin 99/33A series

2. Acceptable Manufacturers and Products:
   a. Detex Advantex series
   b. Precision APEX 2000 series

B. Requirements:

1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1 and UL listed for Panic Exit or Fire Exit Hardware.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide grooved touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
4. Touchpad must extend a minimum of one half of door width. No plastic inserts are allowed in touchpads.
5. Provide exit devices with deadlatching feature for security and for future addition of alarm kits and/or other electrified requirements.
6. Provide exit devices with weather resistant components that can withstand harsh conditions of various climates and corrosive cleaners used in outdoor pool environments.
7. Provide flush end caps for exit devices.
8. Provide exit devices with manufacturer's approved strikes.
9. Provide exit devices cut to door width and height. Install exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.

10. Mount mechanism case flush on face of doors or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
11. Provide cylinder or hex-key dogging as specified at non fire-rated openings.
12. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion, provide type that can be removed by use of a keyed cylinder, which is self-locking when re-installed.
13. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
14. Provide electrified options as scheduled.
15. Top latch mounting: double- or single-tab mount for steel doors, face mount for aluminum doors eliminating requirement of tabs, and double tab mount for wood doors.
16. Provide exit devices with optional trim designs to match other lever and pull designs used on the project.

2.10 OFFLINE CONTROLLER

A. Manufacturer and Product:

1. Scheduled Manufacturer and Product:
   a. Schlage CTE Engage Controller

2. Acceptable Manufacturers and Products:
   a. No Substitute

B. Requirements:

1. Provide an offline single opening controller UL 294 listed and compatible with the Schlage Engage Application. Include a multi-technology reader kit.
2. Provide interfaces for a multi-technology credential reader, powered and dry output relays for strike, alarm, and auxiliary function, and with wireless communication capability.
3. Provide offline controller with the following power options:
   a. Power Over Ethernet (POE)
      1) .5A at 12 VDC for up to 500 feet.
      2) 1.5A at 24 VDC for up to 500 feet.
   b. 12 VDC in 2A at 12 VDC for up to 500 feet.
   c. 24 VDC in 2A at 24 VDC for up to 500 feet.

4. Provide offline controller with the following communication standards:
   a. Bluetooth low energy version 4.2.
   b. 2.4 GHz Wi-Fi (IEEE 802.11b/g/n).
   c. WPA2, WPA, WEP, 802.1x (PEAP).
   d. Transport Layer Security (TLS) version 12.
   e. Advanced Encryption Standard (AES) 256-bit.

5. Provide offline controller with the following signal inputs:
   a. One Schlage MT11-485 or MT15-485 reader.
   b. Request to Enter (REN).
   c. Request to Exit (REX).
   d. Remote Release – hardwired.
   e. Door Position Switch (DPS).
   f. Reader tamper (TAMP).

6. Provide offline controller with the following signal outputs:

a. Card Reader 0.3A at 12 VDC for up to 500 feet.
b. Locking mechanism: 2A at 30 VDC max.
c. Auxiliary: 2A at 30 VDC max.
d. Alarm: 2A at 30 VDC max.

7. Provide offline controller with the following with operating temperatures between -31 F (-35 C) to 151 F (66 C).
8. Provide offline controller with the following on board database:
   a. up to 5,000 users
   b. up to 2,000 audits (FIFO)
   c. up to 16 Time Zones
   d. up to 32 Holiday Schedules
   e. up to 16 Schedules (lock & unlock)

9. Provide offline controller with the following connectivity options:
   a. Apple or Droid smart phone – Bluetooth updates to CTE.
   b. Wi-Fi access point – automatic daily updates (one time per day) if connected to Wi-Fi.

C. Provide offline controller with "No-Tour" with MT20W enrollment reader and Schlage 1K smart credentials (13.56 MHz).

2.11 POWER SUPPLIES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Schlage/Von Duprin PS900 Series

2. Acceptable Manufacturers and Products:
   a. Precision ELR series
   b. Sargent 3500 series

B. Requirements:

1. Provide power supplies approved by manufacturer of supplied electrified hardware.
2. Provide appropriate quantity of power supplies necessary for proper operation of electrified locking components as recommended by manufacturer of electrified locking components with consideration for each electrified component using power supply, location of power supply, and approved wiring diagrams. Locate power supplies as directed by Architect.
3. Provide regulated and filtered 24 VDC power supply, and UL class 2 listed.
4. Provide power supplies with the following features:
   a. 12/24 VDC Output, field selectable.
   b. Class 2 Rated power limited output.
   c. Universal 120-240 VAC input.
   d. Low voltage DC, regulated and filtered.
   e. Polarized connector for distribution boards.
   f. Fused primary input.
   g. AC input and DC output monitoring circuit w/LED indicators.
   h. Cover mounted AC Input indication.
   i. Tested and certified to meet UL294.
   j. NEMA 1 enclosure.
   k. Hinged cover w/lock down screws.

l. High voltage protective cover.

2.12 CYLINDERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Schlage Everest

2. Acceptable Manufacturers and Products:
   a. No Substitute

B. Requirements:

1. Provide cylinders/cores compliant with ANSI/BHMA A156.5; latest revision; cylinder face finished to match lockset; manufacturer's series as indicated. Refer to "KEYING" article, herein.
2. Provide cylinders in the below-listed configuration(s), distributed throughout the Project as indicated.
   a. Patented Open: cylinder with interchangeable core with open keyway.

3. Patent Protection: Cylinders/cores requiring use of restricted, patented keys, patent protected.
4. Nickel silver bottom pins.

2.13 KEYING

A. Scheduled System:

1. New factory registered system:
   a. Provide a factory registered keying system, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

B. Requirements:

1. Construction Keying:
   a. Replaceable Construction Cores.
      1) Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.
         a) 3 construction control keys
         b) 12 construction change (day) keys.
      2) Owner or Owner's Representative will replace temporary construction cores with permanent cores.

2. Permanent Keying:
   a. Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.
      1) Master Keying system as directed by the Owner.
   b. Forward bitting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements will be cause for replacement of cylinders/cores involved at no additional cost to Owner.
   c. Provide keys with the following features:

1) Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
2) Patent Protection: Keys and blanks protected by one or more utility patent(s).

d. Identification:
1) Mark permanent cylinders/cores and keys with applicable blind code for identification. Do not provide blind code marks with actual key cuts.
2) Identification stamping provisions must be approved by the Architect and Owner.
3) Stamp cylinders/cores and keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO NOT DUPLICATE" along with the "PATENTED" or patent number to enforce the patent protection.
4) Failure to comply with stamping requirements will be cause for replacement of keys involved at no additional cost to Owner.
5) Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.

e. Quantity: Furnish in the following quantities.
1) Permanent Control Keys: 3.
2) Master Keys: 6.
3) Change (Day) Keys: 3 per cylinder/core that is keyed differently
4) Key Blanks: Quantity as determined in the keying meeting.

2.14 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
a. LCN 4040XP series

2. Acceptable Manufacturers and Products:
a. Corbin-Russwin DC8000 series
b. Sargent 281 series

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
3. Cylinder Body: 1-1/2-inch (38 mm) diameter piston with 5/8-inch (16 mm) diameter double heat-treated pinion journal. QR code with a direct link to maintenance instructions.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards. Provide snap-on cover clip, with plastic covers, that secures cover to spring tube.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck. Provide graphically labelled instructions on the closer body adjacent to each adjustment valve. Provide positive stop on reg valve that prevents reg screw from being backed out.
7. Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
8. Pressure Relief Valve (PRV) Technology: Not permitted.

9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.15 ELECTRO-MECHANICAL AUTOMATIC OPERATORS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. LCN Senior Swing

2. Acceptable Manufacturers and Products:
   a. Besam Swingmaster MP
   b. Stanley Access Technoligies M-Force

B. Requirements:

1. Provide low energy automatic operator units that are electro-mechanical design complying with ANSI/BHMA A156.19.
   a. Opening: Powered by DC motor working through reduction gears.
   b. Closing: Spring force.
   c. Manual, hydraulic, or chain drive closers: Not permitted.
   d. Operation: Motor is off when door is in closing mode. Door can be manually operated with power on or off without damage to operator. Provide variable adjustments, including opening and closing speed adjustment.
   e. Cover: Aluminum.

2. Provide units with manual off/auto/hold-open switch, push and go function to activate power operator, vestibule interface delay, electric lock delay, hold-open delay adjustable from 1 to 32 seconds, and logic terminal to interface with accessories, mats, and sensors.
3. Provide drop plates, brackets, and adapters for arms as required to suit details.
4. Provide motion sensors and/or actuator switches, and receivers for operation as specified. Provide weather-resistant actuators at exterior applications.
5. Provide key switches, with LED's, recommended and approved by manufacturer of automatic operator as required for function as described in operation description of hardware sets. Cylinders: Refer to "KEYING" article, herein.
6. Provide complete assemblies of controls, switches, power supplies, relays, and parts/material recommended and approved by manufacturer of automatic operator for each individual leaf. Actuators control both doors simultaneously at pairs. Sequence operation of exterior and vestibule doors with automatic operators to allow ingress or egress through both sets of openings as directed by Architect. Locate actuators, key switches, and other controls as directed by Architect.

2.16 PROTECTION PLATES

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Burns
   b. Trimco

B. Requirements:

1. Provide protection plates with a minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
2. Sizes plates 2 inches (51 mm) less width of door on single doors, pairs of doors with a mullion, and doors with edge guards. Size plates 1 inch (25 mm) less width of door on pairs without a mullion or edge guards.
3. At fire rated doors, provide protection plates over 16 inches high with UL label.

2.17 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

A. Manufacturers:

1. Scheduled Manufacturers:
   a. Glynn-Johnson

2. Acceptable Manufacturers:
   a. Rixson
   b. Sargent

B. Requirements:

1. Provide overhead stop at any door where conditions do not allow for a wall stop or floor stop presents tripping hazard.

2.18 DOOR STOPS AND HOLDERS

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Burns
   b. Trimco

B. Provide door stops at each door leaf:

1. Provide wall stops wherever possible. Provide concave type where lockset has a push button of thumbturn.
2. Where a wall stop cannot be used, provide universal floor stops.
3. Where wall or floor stop cannot be used, provide overhead stop.
4. Provide roller bumper where doors open into each other and overhead stop cannot be used.

2.19 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Zero International

2. Acceptable Manufacturers:
   a. Reese
   b. Legacy

B. Requirements:

1. Provide thresholds, weather-stripping, and gasketing systems as specified and per architectural details. Match finish of other items.
2. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
3. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.
4. Size thresholds 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door width unless otherwise specified in the hardware sets or detailed in the drawings.

2.20 SILENCERS

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Burns
   b. Trimco

B. Requirements:

1. Provide "push-in" type silencers for hollow metal or wood frames.
2. Provide one silencer per 30 inches (762 mm) of height on each single frame, and two for each pair frame.
3. Omit where gasketing is specified.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance. Verify doors, frames, and walls have been properly reinforced for hardware installation.

B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

C. Submit a list of deficiencies in writing and proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
2. Custom Steel Doors and Frames: HMMA 831.
3. Interior Architectural Wood Flush Doors: ANSI/WDMA I.S. 1A
4. Installation Guide for Doors and Hardware: DHI TDH-007-20

B. Install door hardware in accordance with NFPA 80, NFPA 101 and provide post-install inspection, testing as specified in section 1.03.E unless otherwise required to comply with governing regulations.

C. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.

D. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.

E. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

F. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

G. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.

H. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated.

I. Lock Cylinders:

1. Install construction cores to secure building and areas during construction period.
2. Replace construction cores with permanent cores as indicated in keying section.
3. Furnish permanent cores to Owner for installation.

J. Wiring: Coordinate with Division 26, ELECTRICAL and Division 28 ELECTRONIC SAFETY AND SECURITY sections for:

1. Conduit, junction boxes and wire pulls.
2. Connections to and from power supplies to electrified hardware.
3. Connections to fire/smoke alarm system and smoke evacuation system.
4. Connection of wire to door position switches and wire runs to central room or area, as directed by Architect.
5. Connections to panel interface modules, controllers, and gateways.
6. Testing and labeling wires with Architect's opening number.

K. Continuous Hinges: Re-locate the door and frame fire rating labels where they will remain visible so that the hinge does not cover the label once installed.

L. Door Closers & Auto Operators: Mount closers/operators on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers/operators so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.

M. Overhead Stops/Holders: Mount overhead stops/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.

N. Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room, or alternate location as directed by Architect.

O. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."

P. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.

Q. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

R. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

S. Door Bottoms and Sweeps: Apply to bottom of door, forming seal with threshold when door is closed.

3.03 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

1. Spring Hinges: Adjust to achieve positive latching when door can close freely from an open position of 30 degrees.
2. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
3. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

B. Occupancy Adjustment: Approximately three to six months after date of Substantial Completion, examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors and door hardware.

3.04 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items per manufacturer's instructions to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.05 DOOR HARDWARE SCHEDULE

A. The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier's responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.

B. Discrepancies, conflicting hardware, and missing items are to be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application.

C. Hardware items are referenced in the following hardware schedule. Refer to the above specifications for special features, options, cylinders/keying, and other requirements.

D. Hardware Sets:

Hardware Group No. 01

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	OFFICE/ENTRY LOCK	L9050T 06A L583-363	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	OH STOP	100S	630	GLY
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 02

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	DBL CYL STORE LOCK	L9066T 06A XL11-897	626	SCH
2	EA	FSIC CORE	23-030	626	SCH
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA	PA MOUNTING PLATE	4040XP-18PA	689	LCN
1	EA	BLADE STOP SPACER	4040XP-61	689	LCN

Hardware Group No. 03

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	L9080T 06A	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 04

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	L9080T 06A	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 05

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	STOREROOM LOCK	L9080T 06A	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	RAIN DRIP	142AA	AA	ZER
1	EA	GASKETING	429AA	AA	ZER
1	EA	DOOR SWEEP	8198AA	AA	ZER
1	EA	THRESHOLD	65A	A	ZER

DOORS REQUIRE SPECIAL 3/8 INCH UNDERCUT FOR ADA TYPE THRESHOLD.

Hardware Group No. 06

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
6	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CONST LATCHING BOLT	FB51P/FB61P (AS REQ'D)	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	L9080T 06A	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
2	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ *ACTIVE LEAF ONLY	689	LCN
1	EA	OVERLAPPING ASTRAGAL	BY DOOR/FRAME MANUFACTURER		B/O
2	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 07

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	112XY	628	IVE
1	EA	CONST LATCHING BOLT	FB51P/FB61P (AS REQ'D)	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	L9080T 06A	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	COORDINATOR	COR X FL (MB AS REQ'D)	628	IVE
2	EA	OH STOP	100S	630	GLY
2	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	EA	RAIN DRIP	142AA	AA	ZER
1	EA	GASKETING	429AA	AA	ZER
1	EA	OVERLAPPING ASTRAGAL	BY DOOR/FRAME MANUFACTURER		B/O
2	EA	DOOR SWEEP	8198AA	AA	ZER
1	EA	THRESHOLD	65A	A	ZER

DOORS REQUIRE SPECIAL 3/8 INCH UNDERCUT FOR ADA TYPE THRESHOLD.

Hardware Group No. 08

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112XY EPT	628	IVE
1	EA	POWER TRANSFER	EPT10	689	VON
1	EA	EU MORTISE LOCK	L9492TEU 06A L583-363 DM CON 12/24 VDC	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	EXTERIOR INDICATOR - OCCUPIED/VACANT	L283-414 626	626	SCH
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	SET	GASKETING	429AA-S	AA	ZER
1	EA	DOOR SWEEP	8198AA	AA	ZER
1	EA	THRESHOLD	65A	A	ZER
1	EA	CONTROLLER	CTE-MT15-485-B	B	SCE
1	EA	POWER SUPPLY	PS902 120/240 VAC	LGR	SCE

DOORS REQUIRE SPECIAL 3/8 INCH UNDERCUT FOR ADA TYPE THRESHOLD.

OPERATION: DOOR NORMALLY CLOSED AND LOCKED. DURING DAYLIGHT HOURS, DOOR CAN BE UNLOCKED BY CONTROLLER TO ALLOW FOR USE OF RESTROOM. KEY OVERRIDE AVAILABLE FOR EMERGENCY INGRESS. FREE EGRESS AT ALL TIMES

Hardware Group No. 09

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	PANIC HARDWARE	CD-99-L-NL-06	626	VON
1	EA	MORTISE CYLINDER	20-059 - CAM & BLOCKING RING AS REQUIRED.	626	SCH
1	EA	RIM HOUSING	20-079	626	SCH
2	EA	FSIC CORE	23-030	626	SCH
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA	PA MOUNTING PLATE	4040XP-18PA	689	LCN
1	EA	BLADE STOP SPACER	4040XP-61	689	LCN
2	EA	DOOR SWEEP	8198AA	AA	ZER
1	EA	THRESHOLD	65A	A	ZER

DOORS REQUIRE SPECIAL 3/8 INCH UNDERCUT FOR ADA TYPE THRESHOLD.

PERIMETER WEATHER SEALS PROVIDED BY ALUMINUM SECTION.

Hardware Group No. 10

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112XY EPT	628	IVE
1	EA	POWER TRANSFER	EPT10	689	VON
1	EA	ELEC PANIC HARDWARE	SD-QEL-99-L-NL-06 24 VDC	626	VON
1	EA	MORTISE CYLINDER	20-059 - CAM & BLOCKING RING AS REQUIRED.	626	SCH
1	EA	RIM HOUSING	20-079	626	SCH
2	EA	FSIC CORE	23-030	626	SCH
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA	PA MOUNTING PLATE	4040XP-18PA	689	LCN
1	EA	BLADE STOP SPACER	4040XP-61	689	LCN
2	EA	DOOR SWEEP	8198AA	AA	ZER
1	EA	THRESHOLD	65A	A	ZER
1	EA	CONTROLLER	CTE-MT15-485-B	B	SCE
1	EA	POWER SUPPLY	PS902 900-2RS 120/240 VAC	LGR	SCE

DOORS REQUIRE SPECIAL 3/8 INCH UNDERCUT FOR ADA TYPE THRESHOLD.

PERIMETER WEATHER SEALS PROVIDED BY ALUMINUM SECTION.

OPERATION: DOOR NORMALLY CLOSED AND LOCKED. PANIC DEVICE LATCHES ALSO CAPABLE OF BEING ELECTRONICALLY DOGGED DOWN (I.E. PUSH/PULL MODE) AS DESIGNATED BY CONTROLLER. FREE EGRESS AT ALL TIMES.

Hardware Group No. 11

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	CONT. HINGE	112XY EPT	628	IVE
1	EA	POWER TRANSFER	EPT10	689	VON
1	EA	PANIC HARDWARE	CD-9947-L-DT-06	626	VON
1	EA	ELEC PANIC HARDWARE	CD-LX-9947-L-NL-06	626	VON
2	EA	MORTISE CYLINDER	20-059 - CAM & BLOCKING RING AS REQUIRED.	626	SCH
1	EA	RIM HOUSING	20-079	626	SCH
3	EA	FSIC CORE	23-030	626	SCH
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA	SURF. AUTO OPERATOR	9540	ANCLR	LCN
1	EA	PA MOUNTING PLATE	4040XP-18PA	689	LCN
1	EA	BLADE STOP SPACER	4040XP-61	689	LCN
1	EA	ACTUATOR, TOUCH	8310-818	630	LCN
1	EA	ACTUATOR, TOUCH	8310-852	630	LCN
2	EA	DOOR SWEEP	8198AA	AA	ZER
1	EA	THRESHOLD	65A	A	ZER

DOORS REQUIRE SPECIAL 3/8 INCH UNDERCUT FOR ADA TYPE THRESHOLD.

PERIMETER WEATHER AND MEETING STYLE SEALS PROVIDED BY ALUMINUM SECTION.

NOTE: DOOR SHALL INCLUDE POWER ACTUATED OPENER ON ONE DOOR WITH REMOTE PEDESTAL-MOUNTED ACTUATOR BUTTON ON THE EXTERIOR – JAMB-MOUNTED ACTUATOR AT THE INTERIOR SIDE OF DOOR. SEE DRAWINGS FOR LOCATIONS OF DOOR OPENER PEDESTAL AND DOOR JAMB-LOCATED DOOR OPENER BUTTON. COORDINATE POWER REQUIREMENTS WITH ELECTRICAL DRAWINGS AND SPECIFICATIONS.

OPERATION: PANIC HARDWARE IS MECHANICALLY DOGGED DURING OPEN HOURS FOR MANUAL PUSH/PULL OPERATION OR FOR OPENING BY ADA OPERATOR. LX SWITCH IN PANIC DEVICE MONITORS POSITION OF LATCH BOLT. WHEN LATCH BOLT IS RETRACTED, OPERATOR IS ON AND ACTUATORS ARE ACTIVE. FREE EGRESS AT ALL TIMES.

Hardware Group No. 12

Provide each SGL door(s) with the following:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR

ALL REQUIRED HARDWARE BY GATE MANUFACTURER

Hardware Group No. 13

Provide each RU door(s) with the following:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR

ALL REQUIRED HARDWARE BY OVERHEAD DOOR MANUFACTURER

E. Hardware Set Index:

Door#	HwSet#
100	11
101	09
102A	06
102B	04
103	01
104	03
105	08
106	08
107	05
108	07
110	10
111	02
112	13
113	12

END OF SECTION 08 71 00

SECTION 09 65 00 - RESILIENT FLOORING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

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

1.02 SUMMARY:

A. Extent of resilient flooring, base and accessories is shown on drawings & schedules. The work of this contract includes providing these items, and final waxing of resilient flooring.

1.03 QUALITY ASSURANCE:

A. General: Materials must be free of asbestos.

B. Manufacturer: Provide each type of resilient flooring & accessories as produced by single manufacturer, including recommended primers, adhesives, sealants,& leveling compounds.

C. Fire Test Performance: Provide resilient flooring which complies with the following fire test performance criteria as determined by an independent testing laboratory acceptable to authorities having jurisdiction.

1. Critical Radiant Flux (CRF): Not less than the following rating per ASTM E 648.
   a. Class 1, not less than 0.45 watts per sq. cm. or greater if required per code.
2. Flame Spread: Not more than 75 per ASTM E 84.
3. Smoke Developed: Not more than 450 per ASTM E 84.
4. Smoke Density: Not more than 450 per ASTM E 662.

D. Installer's Qualifications: Engage Installer who has had more than l0 years of successful experience installing similar applications.

1.04 SUBMITTALS:

A. Product Data: Submit mfgr's technical data for each type of resilient flooring & accessory.

B. Samples for Initial Selection Purposes: Submit manufacturer's standard color charts in form of actual sections of resilient flooring, including accessories, showing full range of colors and patterns available, for each type of resilient flooring required.

C. Samples for Verification Purposes: Submit the following samples of each type, color, and pattern of resilient flooring required, showing full-range of color and pattern variations.

1. Full size tile samples.
2. 2-1/2 long samples of resilient flooring accessories.
3. Other materials as requested.

D. Certification for Fire Test Performance: Submit certification from an independent testing laboratory acceptable to authorities having jurisdiction that resilient flooring complies with fire test performance requirements.

E. Certification for asbestos-free materials from manufacturers of products.

F. Certification of moisture content in substrate.

G. Provide plans showing extent of any color boarders, accent patterns, icons, or other resilient features.

H. Maintenance Instructions: Submit 2 copies of manufacturer's recommended maintenance practices for each type of resilient flooring and accessory required.

1.05 PROJECT CONDITIONS:

A. Maintain minimum temperature of 65 deg. F (18 deg. C) in spaces to receive resilient flooring for at least 48 hours prior to installation, during installation, and for not less than 48 hours after installation. Store resilient flooring materials in spaces where they will be installed for at least 48 hours before beginning installation. Subsequently, maintain minimum temperature of 55 deg. F (13 deg. C) in areas where work is completed.

B. Install resilient flooring and accessories after other finishing operations, including painting, have been completed. Do not install resilient flooring over concrete slabs until the latter have been cured and are sufficiently dry to achieve bond with adhesive as determined by resilient flooring manufacturer's recommended bond and results of moisture test which are in concurrence.

C. Do not install products until they are at the same temperature as the space where they are to be installed.

D. Close spaces to traffic during flooring installation and for time period after installation recommended in writing by manufacturer.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS:

A. Manufacturer: Subject to requirements, provide products of one of the following:

1. Manufacturer of Vinyl Tile:
   Armstrong
   Tarkett
   Johnsonite
   Roppe
   Or approved equal

2.02 RESILIENT PRODUCTS COLORS AND PATTERNS:

A. Basis of Design- Luxury Vinyl Tile, pattern and orientation as shown in Drawings:
   ~~Armstrong Flooring 24" x 24" x 1/8" "Migrations" Vinyl Tile~~
   Tarkett Commercial Flooring, 24" x 24" x 2 mm Luxury Vinyl Tile,

1. Series: iQ Optima
2. Color: To be selected from standard colors within manufacturer's selected series for 24" x 24" tile.

2.03 TILE FLOORING:

A. Luxury Vinyl Tile: ASTM F 1700, Class 1 Fire Performance. ~~Class III, Type B Embossed surface:~~

2.04 RESILIENT ACCESSORIES:

A. Resilient Edge Strips: 1/8" thick, homogeneous vinyl or rubber composition, tapered or bull-nose edge, color to match flooring, or as selected by Architect from standard colors available; not less than 1" wide.

B. Adhesives (Cements): Waterproof, stabilized type as recommended by flooring manufacturer to suit material and substrate conditions.

C. Leveling & Patching Compounds: Latex types as recommended by flooring manufacturer. Leveling and patching compounds shall not be installed in thickness greater than ½".

E. Resilient/Carpet Transition: 1/8" high aluminum, by Schluter, National Guard or Zero.

PART 3 - EXECUTION

3.01 INSPECTION:

A. Require Installer to inspect sub-floor surfaces to determine that they are satisfactory. A satisfactory sub-floor surface is defined as one that is smooth and free from cracks, holes, ridges, coatings preventing adhesive bond, and other defects impairing performance or appearance. Verify that concrete slabs comply with ASTM F710.

B. Perform bond and moisture tests on concrete sub-floors to determine if surfaces are sufficiently cured and dry as well as to ascertain presence of curing compounds.

C. Do not allow resilient flooring work to proceed until sub-floor surfaces are satisfactory.

3.02 PREPARATION:

A. Prepare sub-floor surfaces as follows:
   1. Use leveling and patching compounds as recommended by resilient flooring manufacturer for filling small cracks, holes and depressions in sub-floors.
   2. Remove coatings from sub-floor surfaces that would prevent adhesive bond, including curing compounds incompatible with resilient flooring adhesives, paint, oils, waxes and sealers.

B. Broom clean, then vacuum surfaces to be covered, and inspect sub-floor.

3.03 INSTALLATION:

A. Install resilient flooring using method indicated in strict compliance with manufacturer's printed instructions. Extend resilient flooring into toe spaces, door reveals, and into closets and similar openings. Extend base over toe space of cabinets and shelving.

B. Scribe, cut, and fit resilient flooring to permanent fixtures, built-in furniture and cabinets, pipes, outlets and permanent columns, walls and partitions.

C. Maintain reference markers, holes, or openings that are in place or plainly marked for future cutting by repeating on finish flooring as marked on sub-floor. Use chalk or other non-permanent marking device.

D. Install resilient flooring on covers for telephone and electrical ducts, and similar items occurring within finished floor areas. Maintain overall continuity of color and pattern with pieces of flooring installed on these covers. Tightly cement edges to perimeter of floor around covers and to covers.

E. Tightly cement resilient flooring to sub-base without open cracks, voids, raising, puckering at joints, telegraphing of adhesive spreader marks, or other surface imperfections. Hand roll resilient flooring at perimeter of each covered area to assure adhesion.

F. Metal transition strip (use between carpet and VCT).

3.04 INSTALLATION OF TILE FLOORS:

A. Lay tile from center marks established with principal walls, discounting minor offsets, so that tile at opposite edges of room area of equal width. Adjust as necessary to avoid use of cut widths less than 1/2 tile at room perimeters. Lay tile square to room axis, unless otherwise shown.

B. Match tiles for color and pattern by using tile from cartons in same sequence as manufactured and packaged if so numbered. Cut tile neatly around all fixtures. Broken, cracked, chipped, or deformed tiles are not acceptable.

C. Adhere tile flooring to substrates using full spread of adhesive applied in compliance with flooring manufacturer's directions.

3.07 INSTALLATION OF ACCESSORIES:

A. Place resilient edge_strips tightly butted to flooring and secure with adhesive. Install edging strips at edges of flooring which would otherwise be exposed.

B. Apply butt type metal edge strips where shown on drawings, and before installation of resilient flooring. Secure units to substrate with countersunk stainless steel anchors, complying with manufacturer's recommendations.

C. Apply resilient accessories to stairs as indicated and in strict accordance with manufacturer's installation instructions.

3.06 CLEANING WAXING AND PROTECTION:

A. Perform following operations immediately upon completion of resilient flooring:
   1. Sweep or vacuum floor thoroughly.
   2. Do not wash floor until time period recommended by resilient flooring manufacturer has elapsed to allow resilient flooring to become well-sealed in adhesive.
   3. Damp-mop floor being careful to remove black marks and excessive soil.
   4. Remove any excess adhesive or other surface blemishes, using appropriate cleaner recommended by resilient flooring manufacturers.

B. Protect flooring against damage during construction period to comply with resilient flooring manufacturer's directions.
   1. Protect resilient flooring against damage from rolling loads for initial period following installation by covering with plywood or hardboard. Use dollies to move stationary equipment or furnishings across floors.
   2. Cover resilient flooring with undyed, untreated building paper until inspection for final completion.

C. Clean and wax resilient flooring not more than 30 days prior to date scheduled for inspections intended to establish date of final completion in each area of project. Clean and wax resilient flooring by method recommended by resilient flooring manufacturer.

3.07 EXTRA STOCK:

A. Deliver stock of maintenance materials to Owner. Furnish maintenance materials from same manufactured lot as materials installed and enclosed in protective packaging with appropriate identifying label. Provide maintenance materials as follows, 5% of each color.

3.08 RESILIENT FLOORING COLOR SELECTIONS:

A. See Drawings for color selections and layout pattern for floor tiles in Kitchen area.

END OF SECTION 09 65 00