

**CITY OF LEBANON  
LEBANON AIRPORT**

**TERMINAL BUILDING AND SAND STORAGE AREA IMPROVEMENTS**

**FAA AIP No. 3-33-0010-###-2021**

**ADDENDUM No. 1**

**Date: April 6, 2021**

The following is provided to clarify, add or delete information in the Contract Documents, Specifications and Plans for the above project.

**This information is required for bidding and construction, and the Bidder's acknowledgement of receipt of this Addendum is required on the BID PROPOSAL.**

As a point of clarification, it should be understood that the Contract Documents govern all aspects of the project. Informal discussions held during the Pre-Bid Conference or over the telephone are informational only. All official changes to the Contract Documents are made only by addenda. The following changes and additional information are hereby made a part of the Contract Documents.

**SPECIFICATIONS**

1. Appendix

**INSERT** the Construction Safety and Phasing Plan Document.

2. Technical Specifications:

A. **Reference Specification Section 08 1613 – Fiberglass Doors.**

**DELETE** in its entirety. **SUBSTITUTE** the attached revised specification section 08 1613 – Fiberglass Doors.

B. **Reference Specification Section 08 7100 – Door Hardware:**

**DELETE** in its entirety. **SUBSTITUTE** the attached revised specification section 08 7100 – Door Hardware.

C. **Reference Specification Section 09 6813 – Tile Carpeting:**

**DELETE** in its entirety. **SUBSTITUTE** the attached revised specification section 09 6813 – Tile Carpeting.

**LEBANON AIRPORT  
TERMINAL BUILDING AND SAND STORAGE AREA IMPROVEMENTS  
ADDENDUM No. 1**

**CONTRACT DRAWINGS**

**1. Reference Sheet No. A1.4 Floor Plans:**

A. **DELETE** in its entirety. **SUBSTITUTE** the attached revised sheet No. A1.4 Floor Plans.

**2. Reference Sheet No. A1.5 – Reflected Ceiling Plan:**

A. **ADD** note to 1/A1.5 1st Floor Reflected Ceiling Plan that reads “SAND, STAIN AND VARNISH ALL EXPOSED WOOD ROOF FRAMING ON ANGLED PORTION OF THE ROOF ALONG THE EXISTING SKYLIGHTS.”

**3. Reference Sheet No. A1.6 Building Elevations:**

A. **DELETE** in its entirety. **SUBSTITUTE** the attached revised sheet No. A1.6 Building Elevations.

**LEBANON MUNICIPAL AIRPORT**

**LEBANON, NEW HAMPSHIRE**

**TERMINAL BUILDING AND  
SAND STORAGE AREA IMPROVEMENTS**

**AIP No. 3-33-0010-###-2021**

**CONSTRUCTION SAFETY  
and PHASING PLAN**

**Prepared By: DuBois & King, LLC**

**Bedford, NH 03110**

**April 2021**

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**Project Description:** The proposed project includes upgrades to the terminal building and sand storage area. The base bid includes replacement of lighting and lighting controls, replacement of electrical panelboards, refinishing of existing exposed wood beams and columns, replacement of carpet in the terminal building; construction of a new cast-in-place concrete storage bay and divider wall and repair of an exterior wall at the maintenance building, and all other work associated as shown on the plans and specifications.

Replacement of the exterior windows, aluminum storefront, man doors and skylights at the terminal building will be Additive Alternate No. 1. Replacement of the exterior building siding and building signage, and painting of the exterior concrete at the terminal building will be Additive Alternate No. 2.

**Referenced Publication:** The following Sections are intended to address the requirements set forth in the FAA Advisory Circular 150/5370-2G "Operational Safety on Airports During Construction". The outline provided below corresponds with the subject outline as specified in Chapter 2, Section 1, Paragraph 204 of the referenced Advisory Circular.

## 1. Coordination:

### a. Airport User Coordination:

- The Airport has held a pre-design meeting with the Engineer to introduce and discuss the subject of airport operational safety during construction. Safety items discussed include:
  - Work area limits.
  - If required, pavement closures and durations.
  - If required, temporary threshold relocations.
  - Airport operational and security requirements during construction.
  - Airfield communication and Notice to Airmen (NOTAM) requirements.
  - Marking and lighting requirements to delineate work areas.
  - Locations for staging areas, stock pile areas and haul routes.
  - Impact on Navigational Aids as applicable.

The Airport has provided notification to the airport users of the pending project. Whereas this project will have negligible impact on airport operations, whereas the work will be located outside of Aircraft Operation Areas (AOA), whereas travel through AOA will not be required and whereas the work will not impact any protected surface or area, a public meeting was deemed not necessary.

The Contract documents specify the requirement for the Contractor to submit an interior construction phasing plan to maintain a physical barrier between passenger traffic and active work areas, for review and approval by the Engineer prior to the start of construction.

### b. Pre-Bid and Pre-Construction Meeting:

- The Airport held a pre-bid meeting on March 30, 2021 and will schedule a pre-construction meeting to review safety, airfield operational requirements and security requirements with potential bidders and, subsequently, the Contractor awarded the contract for the project.
- - **Contractor Progress Meetings:** Regularly scheduled progress meeting will be held throughout the construction period of which operational safety will be a standing agenda item.

- **Scope or Schedule Changes:** Changes in the scope or duration of the project will include a review of the Construction Safety Phasing Plan (CSPP). This review may necessitate revision to the CSPP that will require review and approval of the revised CSPP by the airport operator and FAA.

**c. FAA ATO Coordination:**

- It is not anticipated that this Project will impact any NAVAIDS.

**2. Phasing:**

- The project will be constructed in a single phase. The construction duration is estimated at sixty calendar days.
- **Construction Safety Drawing:** Refer to Drawing No. G1.3 for safety requirements.

**3. Areas and Operations Affected by the Construction Activity:**

**Identification of Affected Areas.**

- This Project will have a negligible impact to Aircraft Operation Areas by reducing the AOA by approximately 8 feet from the face of the terminal building to allow space for construction workers to reface the outside of the terminal building adjacent to the west apron . This project will have no impact to NAVAIDS or Airport protected surfaces and areas. No emergency access points will be impacted.

**Mitigation of Effects.**

- The contractor will be responsible for erecting temporary fencing and overhead protection to maintain passenger ingress/egress and maintain separation from the Secured Area.

**4. Protection of Navigation Aids (NAVAIDS):**

- It is not anticipated that this project will have any effect on any of the navigational aids at the Airport.
- Prior to Construction, ATO will be contacted to confirm that no NAVAIDS, power and communication feeds to any NAVAIDS are within the project work limits.
- ATO contact information will be included in the project directory.

**5. Contractor Access:**

**Coordination**

- The contractor shall provide a safety officer familiar with airport safety to monitor construction activities to ensure the contractor adheres to all requirements established by the FAA, the Airport, and the plans and specifications.

**Location of Stockpiled Construction Materials:**

- Stockpiled construction materials shall be located as shown on Drawing No. G1.3. The stockpile areas are located outside of the Runway 18-36 and Runway 7-25 RSA and OFZ.

### **Vehicle and Pedestrian Operations.**

- Contractor access to the Work Area for the terminal building shall be the existing airport terminal entrance. Contractor access to the Work Area for the sand storage area renovations shall be the existing airport gate, directly off of Airpark, as shown on Drawing No. G1.3. No other access point will be allowed.
- Construction fence and signage will be installed to restrict contractor's vehicles and personnel from unauthorized entry to the AOA and improper movement of pedestrians and/or vehicles on the Airport.
- The Contractor will be responsible for providing measures at the entry gates to prevent unauthorized access by vehicles or pedestrians.
- Contractor employees shall park in the Construction staging location indicated on Drawing G1.3.
- Parked construction vehicles, as well as construction vehicles being serviced, shall be located in the staging area as shown on Drawing No. G1.3
- Haul routes shall be as located as shown on Drawing No. G1.3. Construction vehicles shall be painted, marked and lighted in accordance with FAA Advisory Circular 150/5210-5, "Painting, Marking, and Lighting of Vehicles Used on an Airport".
- Each Contractor's, Subcontractor's and Vendor's motorized vehicle operating on the Airport and/or within the Airport Operation Area shall be equipped with an amber flashing light and a three foot (3') square flag consisting of international orange and white squares not less than one foot (1') displayed in full view above the vehicle.
- All Contractor's, Subcontractor's and Vendor's vehicles shall have the company identification plainly visible on both sides of the vehicle in order to identify the vehicle and a unique and visible identification number or letter.
- Travel within AOA is not anticipated to be required on this project. If travel within the AOA is required, any vehicle, other than one that has prior approval from the Airport Operator, must be escorted as described in FAA Advisory Circular 150/5370-2F, "Operational Safety on Airports during Construction".
- HAZMAT vehicles are not anticipated to be required on this project, but if one is required for a fuel spill or other environmental concern, the vehicle shall meet Local and State requirements.
- The Contractor shall be provided with operator training by the Airport Operator on the procedures and safety precautions to be followed while operating vehicles on the Airfield. The procedures shall include, but not be limited to, review of restricted areas, use of haul routes, control of gates, and speed limits.

### **Two-way Radio Communications:**

- It is anticipated that two-way radio communication between the Contractor and ATCT (CTAC when tower is closed) will be limited as the work on this project is located outside of the AOA.
- The Contractor shall have on-site during work hours, at least two (2) radios and personnel who shall monitor the ATCT ground frequency (121.6 MHz.) during ATCT working hours (0600 to 2200 local time) and the CTAC frequency (125.95 MHz.) during hours the ATCT is closed. The radios shall be capable of reliable two-way communication from any location on the Airport. Should it be necessary for the Contractor to contact ATCT or CTAC, only designated (trained) personnel will be allowed to communicate with ATCT or communicate over the CTAC frequency.
- On this project, radio communications will be limited, however will be required for:
  - ATCT or CTAC Declaring emergencies, providing emergency instructions to

- Contractor if required.
  - ATCT notification to Contractor of Construction activities that may cause a hazard to aircraft
  - Contractor notification to ATCT of construction debris, (FOD) which has inadvertently escaped the work area onto the AOA, requesting permission to retrieve the FOD
  - Other identified hazards
- If vehicles are required to operate within the AOA, they shall be either equipped with a vehicle mounted radio or a portable radio that meets the requirements of paragraph 2 above. In the event of a disabled radio communications, vehicle operator shall have working cell phone with the ATCT phone number (603-298-5901) and be proficient with ATCT light signals to obtain direction from ATCT.

#### **Airport Security:**

- The Contractor shall be responsible for meeting all applicable FAA, NHDOT-Aeronautics and Airport regulations concerning the maintenance of security as described in FAA AC 150/5370- 2G, "Operational Safety on Airports during Construction". This includes, but is not limited to, the control of access to the AOA through the project work areas and at site entrance locations. The Contractor is responsible for any temporary fencing, gates or security personnel needed to meet these requirements.
- The Contractor shall be responsible for controlling access to the work area(s) and ensuring that Airport security is maintained at the access locations at all times. Fines upward of ten thousand dollars (\$10,000) may be assessed for security violations and incursions into active Aircraft Operations Areas. The Contractor shall pay all fines assessed against the Airport due to violations caused by the Contractor and his/her personnel, Subcontractors, suppliers and vendors.
- The Contractor, Subcontractor, suppliers, vendors, or any other personnel may be subject to expulsion from the Airport property due to any security violation, safety violation, Runway incursion, or other violation of safety and security protocols.
- If required, key Contractor/Subcontractor personnel shall apply for and obtain security badges prior to working on the Airport.
- The security badging process requires criminal background checks of the applicant. When working on site, non-badge personnel (workers) shall always be insight and under the authority of a badge worker. The badge worker shall be responsible for the non-badged worker's actions.

#### **Security Contacts:**

- If the Contractor encounters or sees suspicious behavior that they feel could propose a security threat, they shall notify the appropriate authority.
  - **Local TSA 603-298-6476**
  - **Local 911**
  - **Airport Management 603-298-8878/6476**

## **6. Wildlife Management:**

#### **Existing Wildlife Mitigation**

- The existing Airport perimeter fence currently is the Airports first line of defense in preventing wildlife from inadvertently migrating onto the Airfield. The Contractor shall maintain this parameter fencing at all times during construction.



**Procedures to Limit Wildlife Attractants:**

- The Contractor shall be responsible for maintaining the construction site in the designated work areas to limit the attraction of wildlife to the satisfaction of the Airport Operator. The Airport will mitigate wildlife hazards during construction as follows:
  - **Trash**
    - Food scraps or other trash that may attract wildlife shall be collected from construction personnel activity, stored in sealed containers, and removed from the site on a regular basis.

Dumpsters, trash cans or other containers shall be secured against animal intrusion with the use of lids or covers secured with straps, chains, or equivalent mechanical means as required to secure the dumpster or container.
  - **Fencing and Gates:**
    - Temporary Fencing: The Contractor will maintain a continuous fenceline throughout construction.
    - The Contractor will remove the fence upon completion of the permanent fence.
    - The Contractor shall maintain all fencing and gates that are being utilized by or impacted by the Contractors activities.
    - The Contractor shall be responsible for meeting all applicable FAA, NHDOT – AERONAUTICS and Airport regulations concerning the maintenance of security as described in FAA AC 150/5370-2G, "Operational Safety on Airports during Construction".
  - **Disruption of Existing Wildlife Habitat:**
    - Disruption to existing wildlife in the vicinity of the project may be unavoidable. Any observed wildlife that could pose a danger to air traffic shall be reported immediately to the Airport Operator at 413-652-2260. Dangerous wildlife includes, but is not limited to, deer, fox, beavers, turtles, and flocks of birds.
    - The contractor shall contact the Airport Operator at 603-298-8878 or 603-298-6488 for any potential wildlife encounters that could endanger aircraft operations.

**7. Foreign Object Debris (FOD) Management.**

**Definition:**

- Foreign Object Debris (FOD) consists of waste and loose materials that are capable of causing damage to aircraft, aircraft landing gears, propellers, jet engines and other damage to aircraft. Examples of FOD include, but are not limited to, clumps of dirt and/or grass, rocks, plastic wrappings, nuts, bolts, paper, tools and construction materials.

**Responsibility:**

- It shall be the Contractors, their employees, subcontractors, suppliers and vendors responsibility not to leave or place FOD on or near active aircraft movement areas, or in areas where wind may carry FOD into the AOA. Materials tracked onto these areas by construction vehicles shall be continuously removed during the construction project as specified by FAA Advisory Circular 150/5370-2F, "Operational Safety on Airports during Construction".

**Continuously Monitor:**

- The Contractor shall continuously monitor the active AOA impacted by construction activities for FOD and (after obtaining clearance from the Air Traffic Control Tower) immediately remove any FOD observed.

**Preventive Measures:**

- The Contractor shall take all necessary precautions to prevent FOD, including, but not limited to the following:
  - Covering dumpsters
  - Securing stored materials
  - Cleaning tires prior to traveling on pavements
  - Erecting fencing and other barrier measures

**Sweeper Onsite:**

- In the event that any dirt or FOD becomes tracked onto active pavement sections impacted by construction activities, the Contractor shall perform sweeping to the satisfaction of the Airport Operator, within 4 hours.

**FOD Inspection:**

- Prior to leaving the work site, the Contractor and the Airport Operator shall perform a Runway/Taxiway inspection of all active pavement surfaces impacted by the construction activities that day and remove any and all FOD encountered. Reference Section 10 for more information regarding inspection requirements.

**Suspension of Work:**

- The Airport Owner reserves the right to suspend work of the Contractor, fully or in part, at any time that in the opinion of the Airport Operator, that Construction activities are creating FOD which poses a hazard to aircraft and is not being satisfactory mitigated by the Contractor. Suspension of work for this reason shall be considered just cause for additional compensation or additional contract time.

**Reference AC 150/5210-24:**

- For information regarding inspection requirements, refer to FAA Advisory Circular 150/5210-24, "Foreign Object Debris (FOD) Management".

## **8. Hazardous Materials (Hazmat) Management.**

### **Direct Hazardous Materials Generation:**

- It is not anticipated that any hazardous materials will be generated from the demolition work required for this project.

### **Indirect Hazardous Material Generation:**

- Contractors operating construction vehicles and equipment on the airport shall be prepared to expeditiously contain and clean up spills resulting from fuel or hydraulic fluid leaks. This includes having properly trained personnel and the appropriate equipment on-site to perform such cleanup.

### **Disposal of Hazardous Materials:**

- All hazardous materials, either as identified on the Plans to be removed and disposed of by the Contractor or indirectly generated by the contractor, shall be legally handled, transported and disposed of by the Contractor off Airport property, according to federal, state and local requirements.

### **HAZMAT Management:**

- The contractor shall be responsible for administrative HAZMAT management procedures regarding fuel deliveries, spill recovery procedures, Material Safety Data Sheets (MSDS) and any other Local, State, and Federal requirements.

For more information regarding hazardous materials management, refer to FAA Advisory Circular 150/5320-15, "Management of Airport Industrial Waste".

## **9. Notification of Construction Activities:**

### **List of Responsible Representatives:**

- The Contract List of Airport and Consultant personnel and emergency contacts is located in Appendix A. The Contractor list of emergency contacts is contained in the SPCD.

### **Notices to Airman (NOTAMs):**

- The Airport Operator will be responsible to coordinate the issuance, maintenance, and cancellation of NOTAMs about airport conditions resulting from construction activities.

### **Contractor's Responsibility:**

- It shall be the Contractor's responsibility to coordinate all work with the Airport Operator and the Engineer and to verify that NOTAMs have been issued prior to commencing work in any work area(s).

### **Emergency Notification Procedures:**

- For emergency first response, the Contractor shall use 911. As a secondary obligation, the Contractor shall notify the Engineer and Owner of any reported emergencies within four (4) hours of the initial call.

**Coordination with ARFF Personnel:**

- The Airport does not provide onsite Airport Rescue and Fire Fighting (ARFF) services. The Contractor shall coordinate with the Airport Operator to ensure that first responders, mutual aid providers and other emergency services are informed of the following:
  - The deactivation and subsequent reactivation of water lines and hydrants.
  - The rerouting, blocking and restoration of emergency access routes.
  - The use of hazardous materials on the airfield.

**Notification to the FAA:**

- The Airport Operator will notify the FAA of proposed construction activities by submitting FAA form 7460-1, “Notice of Proposed Construction or Alteration”. FAA ATO/Technical Operation will be notified by the Airport Operator of the location and work requirements of the Project.

**10. Inspection Requirements:**

**Daily Inspections:**

- The Contractor shall perform daily inspections to ensure conformance with this CSPP. If necessary, inspections shall be conducted more frequently. All deficiencies shall be noted on the Safety and Phasing Plan Checklist, and copies of the checklist shall be shared by and between the Airport Operator and Contractor, with copies provided to the Engineer.

The Contractor shall be responsible to immediately perform the action(s) required on the checklist. Failure to correct deficiencies in a timely manner will result in the shutdown of all project-related construction activities. See FAA Advisory Circular 150/5200-18, “Airport Safety Self- Inspection”, for additional information.

A sample of the Safety and Phasing Plan Checklist is included in AC 150/5370-2F, Appendix 3

**Final Inspections:**

- At the completion of the Project, a final inspection of the work will be performed by representatives of FAA Airports Division and NHDOT- Aeronautics. The FAA will determine if a FAA Airport Certification Safety Inspection (ASCI) final inspection will be required.

**11. Underground Utilities:**

**Utilities Shown on the Plans:**

- The approximate locations of known utilities and underground cables are shown on the Plans. Prior to commencement of any excavation, the Contractor shall coordinate all work on, and in the vicinity of, the underground utilities and cables with the following agencies as appropriate.
  - Lebanon NH Public Works
  - Dig Safe

**Determination of Actual Location:**

- The Contractor is responsible for determining the actual location of all underground utilities in the project areas and adjusting his/her work methods to avoid damaging them.

**Dig Safe Law:**

- The Contractor shall comply with the current version of the Dig Safe Law, effective December 17, 1998 or as revised. The Contractor is required to pre-mark the construction site and give notice of planned digging near utility, cable and fuel lines.

**FAA ATO/Technical Operation Utilities:**

- No FAA ATO/Technical Operation underground utilities are known to exist within the project area.

**12. Penalties:****Suspension of Work and Termination of Contract:**

- The Contractor shall comply with all Airport security and safety requirements as directed by the Airport Operator and follow the safety precautions outlined in the Construction Safety and Phasing Plan, Safety/Phasing Plan checklist, and FAA Advisory Circular 150/5370-2G "Operational Safety on Airports during Construction". If the specified security and safety measure are not followed, the Airport Operator reserves the right to suspend all work until the Contractor can demonstrate that appropriate actions will be undertaken to correct all deficiencies. Repeated infraction to the specified security and safety requirements can be just cause for termination of Contract.

**Fines:**

- Fines upward of ten thousand dollars (\$10,000) may be assessed for security violations and incursions into active Aircraft Operations Areas. The Contractor shall pay all fines assessed against the Airport due to violations caused by the Contractor and his/her personnel, Subcontractors, suppliers and vendors.

**13. Special Conditions:****Work by Others:**

- The Airport reserves the rights to have work performed by others within the specified Project Work Area(s) simultaneously with work performed under this Contract. The Contractor shall cooperate with other Contractors and Vendors and make reasonable adjustments in his/her work schedule as requested by the Airport.

**Aircraft in Distress:**

- If an aircraft is in distress and/or declares an emergency, the Contractor shall stop work immediately, lower all booms, move equipment and men (if time permits) to secure the work area(s) and render assistance if requested.

#### **14. Runway and Taxiway Visual Aids.**

**General:**

- The project will have no impact on existing Runway and Taxiway visual aids and NAVAIDS.

#### **15. Marking and Signs for Access Routes:**

**Work Area(s) Access:**

- Contractor access to the work area(s) shall be as shown on Drawing No. G1.3. No other access point will be allowed.

**Markings and Signage:**

- Temporary pavement markings and signage installed by the Contractor for construction personnel will conform to FAA Advisory Circular 150/5340-18, "Standard for Airport Sign Systems" and, to the maximum extent practicable, with the Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD) and/or State highway specifications.

#### **16. Hazard Marking, Lighting and Signing.**

**General:**

- The project will not require any supplemental hazard marking and lighting to isolate the work area from aircraft operating areas.

#### **17. Protection of Runway and Taxiway Safety Areas.**

**General:**

- No work on this project is proposed within any active runway or taxiway safety areas, Obstacle Free Zone (OFZ), Object Free Area (OFA) and threshold citing surface. No equipment, stored materials, and stock piled material will be allowed to penetrate active approach surfaces.

#### **18. Other Limitations on Construction:**

The Contractor will be subject to the following additional limitations:

- No tall equipment (cranes, concrete pumps, and so on) unless a 7460-determination letter is issued for such equipment.
- No open flames or torches will be permitted.
- No blasting will be permitted.
- The building must be opened and operational at the close of night work by 4:00 AM each day, with additional testing to occur between 4:00AM and 4:30 AM each day.

## **Appendix A**

### **Emergency Contact List**

## Contact List and Emergency Notification

<b>Contractor:</b>	<b>No contractor info available. Project awaiting bidders.</b>
<b>Superintendent -</b>	
<b>Safety Inspection Officer -</b>	
<b>Electrical Subcontractor -</b>	
<b>Contractor Badged Personnel -</b>	
<b>Engineer:</b>	<b>DuBois &amp; King 15 Constitution Drive Suite 1L Bedford, NH 03110 (603) 637-1043 Fax (866) 783-7101</b>
<b>Project Manager -</b>	<b>Ross L Tsantoulis rtsantoulis@dubois-king.com</b>
<b>Resident Engineer -</b>	<b>Part-Time Inspection provided by DuBois &amp; King and BCA</b>
<b>Airport:</b>	<b>Lebanon Airport 5 Airpark Road West Lebanon, NH 03784</b>
<b>Airport Manager -</b>	<b>Carl Gross A.A.E. Airport Manager Lebanon Airport 5 Airpark Road West Lebanon, NH 03784 (O) 603-298-8878 (M) 603-678-1193 cgross@lebanonnh.gov</b>
<b>Air Traffic Control Tower</b>	<b>Towered Airport CTAF Frequency 125.95 UNICOM: 122.95 Ground Frequency 121.6</b>
<b>FAA:</b>	
<b>Project Manager -</b>	<b>John Kirkendall, P.E. Civil Engineer FAA New England Region – Airports Division 1200 District Avenue, Burlington, MA 01803 781.238.7629</b>
<b>Technical Operations -</b>	<b>FAA ATO Eastern Service Center</b>



	<p><b>Operations Support Group (AJA-E3)</b>  <b>1701 Columbia Avenue</b>  <b>College Park, GA 30337</b>  <b>(404) 305-5601</b>  <b>Fax (404) 305-5572</b></p>
	<p><b>New England Region Regional Operations Center (24-hour accident and incident response): (781) 238-7001</b></p>
<b>NHDOT/Bureau of Aeronautics</b>	<p><b>Carol L. Niewola, PE, CM</b>  <b>Senior Aviation Planner</b></p> <p><b>NHDOT/Bureau of Aeronautics</b>  <b>7 Hazen Drive, P.O. Box 483</b>  <b>Concord, NH 03302-0483</b></p> <p><b>Office: 603-271-1675</b>  <b>Cell: 603-419-0683</b>  <b>F 603-271-1689</b>  <b>carol.l.niewola@dot.nh.gov</b></p>
<b>Emergency:</b>	<b>911</b>
<b>Fire:</b>	<b>911</b>
<b>Police:</b>	<b>911</b>
<b>Electrical : Liberty Utilities</b>	<p><b>Melvin Emerson</b>  <b>Liberty Utilities (New Hampshire)</b>  <b>Distribution Design Engineer</b>  <b>P: 603-306-8215</b>  <b>C: 603-443-0925</b>  <b>Melvin.Emerson@libertyutilities.com</b></p>
<b>Digsafe:</b>	<b>1-888-DIG-SAFE or 1-888-344-7233</b>

## **Appendix B**

### **Airport Operator Strategic Event Form**

FORM TO BE PROVIDED BY FAA AT A LATER DATE.

## **Appendix C**

### **Safety and Phasing Plan Checklist**

## AIRPORT IMPROVEMENT PROGRAM SAFETY/PHASING PLAN CHECKLIST

Airport Name / Associated City Lebanon Municipal Airport		State NH	AIP No. TBD	Date 4/6/21	
Coordination	Reference	Addressed			Remarks
<b>1 &amp; 2 General Considerations (Coordination &amp; Phasing)</b>					
1. Requirements for predesign, prebid, and preconstruction conferences to introduce the subject of airport operations safety during construction are specified.	205	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
2. Operational safety is a standing agenda item for construction progress meetings.	205	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
3. Scheduling of the construction phases is properly addressed.	206	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
<b>3. Areas and Operations Affected by Construction Activity</b>					
4. Drawings showing affected areas are included.	207.a	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
5. Closed or partially closed runways, taxiways, and aprons are depicted on drawings.	207.a(1)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
6. Access routes used by ARFF vehicles affected by the project are addressed.	207.a(2)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
7. Access routes used by airport and airline support vehicles affected by the project are addressed.	207.a(3)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
8. Underground utilities, including water supplies for fire fighting and drainage.	207.a(4)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
9. Approach/departure surfaces affected by heights of temporary objects are addressed.	207.a(5)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
10. Construction areas, storage areas, and access routes near runways, taxiways, aprons, or helipads are properly depicted on drawings.	207.a	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
11. Temporary changes to taxi operations are addressed.	207.b(1)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
12. Detours for ARFF and other airport vehicles are identified.	207.b(2)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
13. Maintenance of essential utilities and underground infrastructure is addressed.	207.b(3)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
14. Temporary changes to air traffic control procedures are addressed.	207.b(4)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
<b>4. NAVAIDS</b>					
15. Critical areas for NAVAIDS are depicted on drawings.	208	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
16. Effects of construction activity on the performance of NAVAIDS, including unanticipated power outages are addressed.	208	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
17. Protection of NAVAID facilities is addressed.	208	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
18. The required distance and direction from each NAVAID to any construction activity is depicted on drawings.	208	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	

19. Procedures for coordination with FAA ATO/Technical Operations, including identification of points of contract, are included.	208, 213.a, 213.e(3)(a), 218.a	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
<b>5. Contractor Access</b>					
20. The CSPP addresses areas to which contractor will have access and how the areas will be accessed.	209	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
21. The application of 49 CFR Part 1542 Airport Security, where appropriate, is addressed.	209	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
22. The location of stockpiled construction materials is depicted on drawings.	209.a	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
23. The requirement for stockpiles in the ROFA to be approved by FAA is included.	209.a	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
24. Requirements for proper stockpiling of materials are included.	209.a	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
25. Construction site parking is addressed.	209.b(1)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
26. Construction equipment parking is addressed.	209.b(2)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
27. Access and haul roads are addressed.	209.b(3)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
28. A requirement for marking and lighting of vehicles to comply with AC 150/5210-5, Painting, Marking, and Lighting of Vehicles Used on Airports is included.	209.b(4)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
29. Proper vehicle operations, including requirements for escorts are described.	209.b(5), 209.b(6)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
30. Training requirements for vehicle drivers are addressed.	209.b(7)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
31. Two-way radio communications procedures are described.	209.b(9)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
32. Maintenance of the secured area of the Airport is addressed.	209.b(10)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
<b>6. Wildlife Management</b>					
33. The Airport operator's wildlife management procedures are addressed.	210	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
<b>7. Foreign Object Debris Management</b>					
34. The Airport operator's FOD management procedures are addressed.	211	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
<b>8. Hazardous Materials Management</b>					
35. The Airport operator's hazardous materials management procedures are addressed.	212	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
<b>9. Notification of Construction Activities</b>					
36. Procedures for the immediate notification of Airport user and FAA of any conditions adversely affecting the operational safety of the Airport are detailed.	213	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	

37. Maintenance of a list by the Airport operator of the responsible representatives/points of contact for all involved parties and procedures for contacting them 24 hours a day, seven days a week is specified.	213.a	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
38. A list of local ATO/Technical Operations personnel is included.	213.a	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
39. A list of ATCT managers on duty is included.	213.a	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
40. A list of authorized representatives to the OCC is included.	213.b	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
41. Procedures for coordinating, issuing, maintaining and canceling by the airport operator of NOTAMS about airport conditions resulting from construction are included.	213.b, 208, 213.b, 218.b(4)(i)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
42. Provision of information on closed or hazardous conditions on airport movement areas by the airport operator to the OCC is specified.	213.b	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
43. Emergency notification procedures for medical, fire fighting, and police response are addressed.	213.c	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
44. Coordination with ARFF personnel for non-emergency issues is addressed.	213.d	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
45. Notification to the FAA under 14 CFR 77 and 157 is addressed.	213.e	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
46. Reimbursable agreements for flight checks and/or design and construction for FAA owned NAVAIDS are addressed.	213.e(3)(b)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
<b>10. Inspection Requirements</b>					
47. Daily inspections by both the airport operator and contractor are specified.	214.a	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
48. Final inspections at certificated airports are specified when required.	214.b	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
<b>11. Underground Utilities</b>					
49. Procedures for protecting existing underground facilities in excavation areas are described.	215	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
<b>12. Penalties</b>					
50. Penalty provisions for noncompliance with airport rules and regulations and the safety plans are detailed.	216	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
<b>13. Special Conditions</b>					
51. Any special conditions that affect the operation of the airport or require the activation of any special procedures are addressed.	217	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
<b>14. Runway and Taxiway Visual Aids – Marking, Lighting, Signs and Visual NAVAIDS</b>					
52. The proper securing of temporary airport markings, lightings, signs, and visual NAVAIDS is addressed.	218.a	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
53. Frangibility of airport markings, lighting, signs, and visual NAVAIDS is specified.	218.a, 218.c, 219, 220.b(4)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
54. The requirement for markings to be in compliance with AC 150/5340-1, Standards for Airport Markings is specified.	218.b	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	

55. The requirement for lighting to conform to AC 150/5340-30, Design and Installation for Airport Visual Aids, AC 150/5345-50, Specification for Portable Runway and Taxiway "Lights, and AC 150/5345-53, Airport Lighting Certification Program is specified.	218.b(1)(f)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
56. The use of a lighted X is specified where appropriate.	218.b(1)(b), 218.b(3)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
57. The requirement for signs to conform to AC 150/5345-44, Specification for Runway and Taxiway Signs, AC 150/5340-18, Standards for Airport Sign Systems, and AC 1150/5345-53, Airport Lighting Certification Program is specified.	218.c	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
<b>15. Marking and Signs for Access Routes</b>					
58. The CSPP specifies that pavement markings and signs intended for construction personnel should conform to AC 150/5340-18, and, to the extent practicable, with the MUTCD and / or State highway specifications.	219	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
<b>16. Hazard Marking and Lighting</b>					
59. Prominent, comprehensible warning indicators for any area affected by construction that is normally accessible to aircraft, personnel, or vehicles is specified.	220.a	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
60. Hazard marking and lighting are specified to identify open manholes, small areas under repair, stockpiled material, and waste areas.	220.a	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
61. The CSPP considers less obvious construction related hazards.	220.a	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
62. Equipment that poses the least danger to aircraft but is sturdy enough to remain in place when subjected to typical winds, prop wash and jet blast is specified.	220.b(1)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
63. The spacing of barricades is specified such that a breach is physically prevented barring a deliberate act.	220.b(1)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
64. Red lights meeting the luminance requirements of the State Highway Department are specified.	220.b(2)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
65. Barricades, temporary markers, and other objects placed and left in areas adjacent to any open runway, taxiway, taxi lane, or apron are specified to be as low as possible to the ground, and no more than 18 inches high.	220.b(4)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
66. Barricades marked with diagonal, alternating orange and white stripes are specified to indicate construction locations in which no part of an aircraft may enter.	220.b(4)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
67. Highly reflective barriers with lights are specified to barricade taxiways leading to closed runways.	220.b(5)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
68. Markings for temporary closures are specified.	220.b(5)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
69. The provision of a contractor's representative on call 24 hours a day for emergency maintenance of airport hazard lighting and barricades is specified.	220.b(7)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	



17. Protection of Runway and Taxiway Safety Areas					
70. The CSPP clearly states that no construction may occur within a safety area while the associated runway or taxiway is open for aircraft operations.	221.a(1), 221.c(1)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
71. The CSPP specifies that the airport operator coordinates the adjustment of RSA or TSA dimensions with the ATCT and the appropriate FAA Airport Regional or District Office and issues a local NOTAM.	221.a(2), 221.c(2)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
72. Procedures for ensuring adequate distance for protection from blasting operations, if required by operational considerations, are detailed.	221.c(3)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> NA	No blasting on project.
73. The CSPP specifies that open trenches or excavations are not permitted within a safety area while the associated runway or taxiway is open.	221.a(4)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
74. Appropriate covering of excavations in the RSA or TSA that cannot be backfilled before the associated runway or taxiway is open is detailed.	221.a(4)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
75. The CSPP includes provision for prominent marking of open trenches and excavations at the construction site.	221.a(4)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
76. Grading and soil erosion control to maintain TSA/TSA standards are addressed.	221.c(5)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
77. The CSPP specifies that equipment is to be removed from the ROFA when not in use.	221.b	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
78. The CSPP clearly states that no construction may occur within a taxiway safety area while the taxiway is open for aircraft operations.	221.c	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
79. Appropriate details are specified for any construction work to be accomplished in a taxiway object free area.	221.d	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
80. Measures to ensure that personnel, material, and/or equipment do not penetrate the OBZ or threshold siting surfaces with the runway is open for aircraft operations are included.	221.e	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
81. Provision for protection of runway approach/departure areas and clearways are included.	221.f	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
17. Other Limitations on Construction					
82. The CSPP prohibits the use of open flame welding or torches unless adequate fire safety precautions are provided and the airport operator has approved their use.	222.a(2)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
83. The CSPP prohibits the use of flare pots within the AOA at any time.	222.a(4)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
84. The CSPP prohibits the use of electrical blasting caps on or within 1,000 feet of the airport property.	222.a(3)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	

## **Appendix D**

### **Daily Safety Inspection Checklist**

**APPENDIX D. CONSTRUCTION PROJECT DAILY SAFETY INSPECTION CHECKLIST**

The situations identified below are potentially hazardous conditions that may occur during airport construction projects. Safety area encroachments, unauthorized and improper ground vehicle operations, and unmarked or uncovered holes and trenches near aircraft operating surfaces pose the most prevalent threats to airport operational safety during airport construction projects. The list below is one tool that the airport operator or contractor may use to aid in identifying and correcting potentially hazardous conditions. It should be customized as appropriate for each project including information such as the date, time and name of the person conducting the inspection.

**Table D-1. Potentially Hazardous Conditions**

<b>Item</b>	<b>Action Required (Describe)</b>	<b>No Action Required (Check)</b>
Excavation adjacent to runways, taxiways, and aprons improperly backfilled.		
Mounds of earth, construction materials, temporary structures, and other obstacles near any open runway, taxiway, or taxi lane; in the related Object Free area and aircraft approach or departure areas/zones; or obstructing any sign or marking.		
Runway resurfacing projects resulting in lips exceeding 3 inch (7.6 cm) from pavement edges and ends.		
Heavy equipment (stationary or mobile) operating or idle near AOA, in runway approaches and departures areas, or in OFZ.		
Equipment or material near NAVAIDs that may degrade or impair radiated signals and/or the monitoring of navigation and visual aids. Unauthorized or improper vehicle operations in localizer or glide slope critical areas, resulting in electronic interference and/or facility shutdown.		
Tall and especially relatively low visibility units (that is, equipment with slim profiles) — cranes, drills, and similar objects — located in critical areas, such as OFZ and		

<b>Item</b>	<b>Action Required (Describe)</b>	<b>No Action Required (Check)</b>
approach zones.		
Improperly positioned or malfunctioning lights or unlighted airport hazards, such as holes or excavations, on any apron, open taxiway, or open taxi lane or in a related safety, approach, or departure area.		
Obstacles, loose pavement, trash, and other debris on or near AOA. Construction debris (gravel, sand, mud, paving materials) on airport pavements may result in aircraft propeller, turbine engine, or tire damage. Also, loose materials may blow about, potentially causing personal injury or equipment damage.		
Inappropriate or poorly maintained fencing during construction intended to deter human and animal intrusions into the AOA. Fencing and other markings that are inadequate to separate construction areas from open AOA create aviation hazards.		
Improper or inadequate marking or lighting of runways (especially thresholds that have been displaced or runways that have been closed) and taxiways that could cause pilot confusion and provide a potential for a runway incursion. Inadequate or improper methods of marking, barricading, and lighting of temporarily closed portions of AOA create aviation hazards.		
Wildlife attractants — such as trash (food scraps not collected from construction personnel activity), grass seeds, tall grass, or standing water — on or near airports.		
Obliterated or faded temporary markings on active operational areas.		
Misleading or malfunctioning obstruction lights. Unlighted or unmarked obstructions in the approach to any open runway pose aviation hazards.		

<b>Item</b>	<b>Action Required (Describe)</b>	<b>No Action Required (Check)</b>
Failure to issue, update, or cancel NOTAMs about airport or runway closures or other construction related airport conditions.		
Failure to mark and identify utilities or power cables. Damage to utilities and power cables during construction activity can result in the loss of runway / taxiway lighting; loss of navigation, visual, or approach aids; disruption of weather reporting services; and/or loss of communications.		
Restrictions on ARFF access from fire stations to the runway / taxiway system or airport buildings.		
Lack of radio communications with construction vehicles in airport movement areas.		
Objects, regardless of whether they are marked or flagged, or activities anywhere on or near an airport that could be distracting, confusing, or alarming to pilots during aircraft operations.		
Water, snow, dirt, debris, or other contaminants that temporarily obscure or derogate the visibility of runway/taxiway marking, lighting, and pavement edges. Any condition or factor that obscures or diminishes the visibility of areas under construction.		
Spillage from vehicles (gasoline, diesel fuel, oil) on active pavement areas, such as runways, taxiways, aprons, and airport roadways.		
Failure to maintain drainage system integrity during construction (for example, no temporary drainage provided when working on a drainage system).		

<b>Item</b>	<b>Action Required (Describe)</b>	<b>No Action Required (Check)</b>
Failure to provide for proper electrical lockout and tagging procedures. At larger airports with multiple maintenance shifts/workers, construction contractors should make provisions for coordinating work on circuits.		
Failure to control dust. Consider limiting the amount of area from which the contractor is allowed to strip turf.		
Exposed wiring that creates an electrocution or fire ignition hazard. Identify and secure wiring, and place it in conduit or bury it.		
Site burning, which can cause possible obscuration.		
Construction work taking place outside of designated work areas and out of phase.		

## **Appendix E**

### **Construction Safety Plan Sheets**

**See Contract Drawings**

SECTION 081613  
FIBERGLASS DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fiberglass doors.
- B. Fiberglass door frames.

1.02 RELATED REQUIREMENTS

- A. Section 08 7100 - Door Hardware.
- B. Section 08 8000 - Glazing.

1.03 REFERENCE STANDARDS

- A. ASTM D635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position 2018.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2020.
- C. ASTM E283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen 2004 (Reapproved 2012).
- D. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference 2000 (Reapproved 2016).

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard details, installation instructions, hardware and anchor recommendations.
- C. Shop Drawings: Indicate layout and profiles; include assembly methods.
  - 1. Indicate product components, including hardware reinforcement locations and preparations, accessories, finish colors, patterns, and textures.
  - 2. Indicate wall conditions, door and frame elevations, sections, materials, gauges, finishes, location of door hardware by dimension, and details of openings; use same reference numbers indicated on drawings to identify details and openings.
- D. Selection Samples: Submit two complete sets of color chips, illustrating manufacturer's available finishes, colors, and textures.
- E. Manufacturer's Qualification Statement.
- F. Installer's Qualification Statement.



- G. Maintenance Data: Include instructions for repair of minor scratches and damage.
- H. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer; include detailed terms of warranty.

#### 1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this section, with not less than three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Mark doors with location of installation, door type, color, and weight.
- B. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- C. Store materials in original packaging, under cover, protected from exposure to harmful weather conditions and from direct contact with water.
  - 1. Store at temperature and humidity conditions recommended by manufacturer.
  - 2. Do not use non-vented plastic or canvas shelters.
  - 3. Immediately remove wet wrappers.
- D. Store in position recommended by manufacturer, elevated minimum 4 inches above grade, with minimum 1/4 inch space between doors.

#### 1.07 FIELD CONDITIONS

- A. Do not install doors until structure is enclosed.
- B. Maintain temperature and humidity at manufacturer's recommended levels during and after installation of doors.

#### 1.08 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide ten (10) year manufacturer warranty covering materials and workmanship .

### PART 2 PRODUCTS

#### 2.01 MANUFACTURERS

- A. Fiberglass Composite Doors:
  - 1. Pella Corporation; Pella Impervia | Patio Doors: [www.pellacommercial.com/#sle](http://www.pellacommercial.com/#sle).
  - 2. Plastpro Inc; Fir Grain Series, Shaker Profile [\_\_\_\_]: [www.plastproinc.com/#sle](http://www.plastproinc.com/#sle).
  - 3. Special-Lite, Inc: [www.special-lite.com/#sle](http://www.special-lite.com/#sle).

## 2.02 DOOR AND FRAME ASSEMBLIES

- A. Door and Frame Assemblies: Factory-fabricated, prepared and machined for hardware.
  - 1. Screw-Holding Capacity: Tested to 890 pounds, minimum.
  - 2. Surface Burning Characteristics: Flame spread index (FSI) of 0 to 25, Class A, and smoke developed index (SDI) of 450 or less, when tested in accordance with ASTM E84.
  - 3. Flammability: Self-extinguishing when tested in accordance with ASTM D635.
  - 4. Clearance Between Door and Frame: 1/8 inch, maximum.
  - 5. Clearance Between Bottom of Door and Finished Floor: 3/4 inch, maximum; not less than 1/4 inch clearance to threshold.

## 2.03 COMPONENTS

- A. Doors: Fiberglass construction with reinforced core.
  - 1. Basis of Design- Special-Lite; AF-200
  - 2. Thickness: 1-3/4 inch, nominal.
  - 3. Core Material: Expanded polystyrene foam (EPS).
  - 4. Construction:
    - a. Pultruded as single monolithic fiberglass reinforced plastic (FRP) panel.
  - 5. Face Sheet Texture: Smooth.
  - 6. Door Panel: Flush door.
  - 7. Subframe and Reinforcements: Manufacturer's standard materials.
  - 8. Waterproof Integrity: Provide factory fabricated edges, cut-outs, and hardware preparations of fiberglass reinforced plastic (FRP); provide cut-outs with joints sealed independently of glazing, louver inserts, or trim.
  - 9. Hardware Preparations: Factory reinforce, machine, and prepare for door hardware including field installed items; provide solid blocking for each item; field cutting, drilling or tapping is not permitted; obtain manufacturer's hardware templates for preparation as necessary.
- B. Door Frames: Provide type in compliance with performance requirements specified for doors.
  - 1. Basis of Design- Special-Lite; AF-150
  - 2. Type: Fiberglass frame.
  - 3. Non-Fire-Rated:
    - a. Fiberglass pultrusions with factory finish.

## 2.04 PERFORMANCE REQUIREMENTS

- A. Provide door assemblies that have been designed and fabricated in compliance with specified performance requirements.
- B. Water Leakage: No uncontrolled leakage on interior face when tested in accordance with ASTM E331 at differential pressure of 7.5 psf.
- C. Air Leakage: Maximum of 0.1 cfm per square foot at 6.27 psf differential pressure, when tested in accordance with ASTM E283.

2.05 FINISHES

- A. Gel Coating: Ultraviolet (UV) stabilized polyester finish.
  - 1. Thickness: Minimum 15 mils, 0.015 inch wet thickness, plus/minus 3 mils, 0.003 inch.
  - 2. Color: As selected by Architect from manufacturer's standard line of colors.

2.06 ACCESSORIES

- A. Door Hardware: See Section 08 7100.

- B. Threshold: Fiberglass threshold
  - 1. Material: Non-Corrosive Solid Pultruded FRP
  - 2. Style: Saddle
  - 3. Finish: Paint to match frame color



PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.

3.02 PREPARATION

- A. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- B. Clean and prepare substrate in accordance with manufacturer's directions.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions; do not penetrate frames with anchors.
- B. Set units plumb, level, and true-to-line, without warping or racking doors, and with specified clearances; anchor in place.
- C. Separate aluminum and other metal surfaces from sources of corrosion of electrolytic action at points of contact with other materials.

3.04 ADJUSTING

- A. Lubricate, test, and adjust doors to operate easily, free from warp, twist or distortion, and to fit watertight for entire perimeter.
- B. Adjust hardware for smooth and quiet operation.
- C. Adjust doors to fit snugly and close without sticking or binding.

3.05 CLEANING

- A. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance.

3.06 PROTECTION

- A. Protect installed products from damage until Date of Substantial Completion.

END OF SECTION



SECTION 087100  
DOOR HARDWARE

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
1. Mechanical and electrified door hardware for:
    - a. Swinging doors.
  2. Electronic access control system components
  3. Field verification, preparation and modification of existing doors and frames to receive new door hardware.
- 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 Section "Alternates" for alternates affecting this section.
  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. "Aluminum-Framed Entrances and Storefronts"
  6. Division 09 sections for touchup, finishing or refinishing of existing openings modified by this section.
  7. Division 26 "Electrical" sections for connections to electrical power system and for low-voltage wiring.
  8. 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 - Underwriters Laboratories
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. Comply with procedures for verifying existing door and frame compatibility for new hardware, as specified in PART 3, “EXAMINATION” article, herein.
    - b. Review drawings and Sections from related trades to verify compatibility with specified hardware.
    - c. 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.
6. Templates: After final approval of hardware schedule, provide templates for doors, frames and other work specified to be factory or shop prepared for door hardware installation.
- 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:

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- 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. Factory order acknowledgement numbers (for warranty and service)
  - d. Name, address, and phone number of local representative for each manufacturer.
  - e. Parts list for each product.
  - f. Final approved hardware schedule edited to reflect conditions as installed.
  - g. Final keying schedule
  - h. Copies of floor plans with keying nomenclature
  - i. Copy of warranties including appropriate reference numbers for manufacturers to identify project.
  - j. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.
- E. Inspection and Testing:
1. Submit a written report of the results of functional testing and inspection for fire door assemblies, in compliance with NFPA 80.
    - a. Written report to be provided to the Owner and be made available to the Authority Having Jurisdiction (AHJ).
    - b. Report to include the door number for each fire door assembly, door location, door and frame material, fire rating, and summary of deficiencies.
  2. Submit a written report of the results of functional testing and inspection for required egress door assemblies, in compliance with NFPA 101.
    - a. Written report to be provided to the Owner and be made available to the Authority Having Jurisdiction (AHJ).
    - b. Report to include the door number for each required egress door assembly, door location, door and frame material, fire rating, and summary of deficiencies.

#### 1.04 QUALITY ASSURANCE

- A. Qualifications and Responsibilities:
1. Supplier: Recognized architectural hardware supplier with record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that provides certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.
    - a. Warehousing Facilities: In Project's vicinity.
    - b. Scheduling Responsibility: Preparation of door hardware and keying schedules.
    - c. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies like those indicated for this Project.
    - d. Coordination Responsibility: Assist in coordinating installation of electronic security hardware with Architect and electrical engineers and provide installation and technical data to Architect and other related subcontractors.
      - 1) Upon completion of electronic security hardware installation, inspect and verify that all components are working properly.
  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.



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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 Underwriters Laboratories, 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.
- E. Existing Openings: Where existing doors, frames and/or hardware are to remain, field verify existing functions, conditions and preparations and coordinate to suit opening conditions and to provide proper door operation.

#### 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) Schlage L Series: 3 year
    - 2) Exit Devices
      - a) Von Duprin: 3 year
    - 3) Closers
      - a) LCN 4000 Series: 30 year
    - 4) Accessories
      - a) Ives Continuous Hinges: Lifetime
  - b. Electrical Warranty
    - 1) Exit Devices
      - a) Von Duprin: 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 1 PRODUCTS

##### 2.01 MANUFACTURERS

- A. Approval of manufacturers and/or products other than those listed as "Scheduled Manufacturer" or "Acceptable Manufacturers" in the individual article for the product category shall be in accordance with QUALITY ASSURANCE article, herein.
- B. 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.
- C. 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. Fasteners
  1. Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
  2. Furnish screws for installation with each hardware item. Finish exposed (exposed under any condition) 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 for hardware units exposed when door is closed except when no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed

in other work unless thru-bolts are required to fasten hardware securely. Review door specification and advise Architect if thru bolts are required.

4. Install hardware with fasteners provided by hardware manufacturer.

- 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 CONTINUOUS HINGES

- A. Manufacturers:

1. Scheduled Manufacturer:
  - a. Ives
2. Acceptable Manufacturers:
  - a. Select
  - b. Stanley

- 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 enough and wire gage 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.

## 2.04 ELECTRIC POWER TRANSFER

- A. Manufacturers:

1. Scheduled Manufacturer and Product:
  - a. Von Duprin EPT-10
2. Acceptable Manufacturers and Products:
  - a. ABH PT1000
  - b. Securitron CEPT-10

- 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.

## 2.05 MORTISE LOCKS

### A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
  - a. Schlage L9000 series
2. Acceptable Manufacturers and Products:
  - a. Sargent 8200 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-inch x 1/2 inch with 180-degree visibility. Provide messages color-coded with full text and/or symbols, as scheduled, for easy visibility.
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.
7. Provide electrified options as scheduled in the hardware sets. Where scheduled, provide switches and sensors integrated into the locks and latches.
8. Provide motor based electrified locksets with electrified options as scheduled in the hardware sets and 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.
9. 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:06N.

## 2.06 EXIT DEVICES

### A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
  - a. Von Duprin 99/33A series
2. Acceptable Manufacturers and Products:
  - a. Precision APEX 2000 series
  - b. Sargent 19-43-80 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. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
13. Provide electrified options as scheduled.
14. Provide delayed egress devices, where scheduled, that are UL 294 listed, meet National Fire Protection Association (NFPA) and International Building Code (IBC) governing delayed egress, and/or other local and national fire codes acceptable to authority having jurisdiction as required.
  - a. Provide non-handed and field sizable device with 3/4 (19mm) throw deadlocking latch bolt. Device incorporates an internal RX switch that detects attempt to exit from applying less than 15lbs to the push pad, which causes this switch to start an irreversible alarm cycle. Key switch in device is capable of arming, disarming, or resetting the device; and indicator lamp determines status of the device
  - b. Provide devices capable of standard 15 second release delay and indefinite release delay as required by code, when tied into fire alarm system will release immediately when an alarm condition exists.
  - c. Provide devices with all control inputs – door position input, external inhibit input, fire alarm input; auxiliary locking; nuisance alarm and internal horn; and, remote signaling output self-contained in the device assembly.
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.

2.07 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.

## 2.08 CYLINDERS

- A. Manufacturers and Products:
  1. Scheduled Manufacturer and Product:
    - a. Schlage Everest 29 S
  2. Acceptable Manufacturers and Products:
    - a. Best Preferred Patented
    - b. Sargent DG1
- 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. Conventional Patented Open: cylinder with interchangeable core.
  3. Patent Protection: Cylinders/cores requiring use of restricted, patented keys, patent protected.
  4. Nickel silver bottom pins.
- C. Construction Keying:
  1. Replaceable Construction Cores.
    - a. Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.
      - 1) 3 construction control keys

- 2) 12 construction change (day) keys.
- b. Owner or Owner's Representative will replace temporary construction cores with permanent cores.

## 2.09 KEYING

- A. Provide a factory registered keying system, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.
- B. Requirements:
  1. Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.
    - a. Master Keying system as directed by the Owner.
  2. 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.
  3. Provide keys with the following features:
    - a. Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
    - b. Patent Protection: Keys and blanks protected by one or more utility patent(s).
    - c. Geographically Exclusive: Where High Security or Security cylinders/cores are indicated, provide nationwide, geographically exclusive key system complying with the following restrictions.
  4. Identification:
    - a. Mark permanent cylinders/cores and keys with applicable blind code for identification. Do not provide blind code marks with actual key cuts.
    - b. Identification stamping provisions must be approved by the Architect and Owner.
    - c. 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.
    - d. Failure to comply with stamping requirements will be cause for replacement of keys involved at no additional cost to Owner.
    - e. Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.
  5. Quantity: Furnish in the following quantities.
    - a. Change (Day) Keys: 3 per cylinder/core.
    - b. Permanent Control Keys: 3.
    - c. Master Keys: 6.

## 2.10 KEY CONTROL SYSTEM

- A. Manufacturers:
  1. Scheduled Manufacturer:
    - a. Telkee
  2. Acceptable Manufacturers:
    - a. HPC
    - b. Lund
- B. Requirements:
  1. Provide key control system, including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent



markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150% of number of locks required for Project.

- a. Provide complete cross index system set up by hardware supplier, and place keys on markers and hooks in cabinet as determined by final key schedule.
- b. Provide hinged-panel type cabinet for wall mounting.

## 2.11 DOOR CLOSERS

### A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
  - a. LCN 4010/4110 series
2. Acceptable Manufacturers and Products:
  - a. Sargent 281 series (less PRV)

### B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. Certify surface mounted mechanical closers to meet fifteen million (15,000,000) full load cycles. 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 with 11/16-inch (17 mm) diameter double heat-treated pinion journal.
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.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.
7. Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers. When closers are parallel arm mounted, provide closers which mount within 6-inch (152 mm) top rail without use of mounting plate so that closer is not visible through vision panel from pull side.
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/BHMA 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.

## 2.12 DOOR TRIM

### A. Manufacturers:

1. Scheduled Manufacturer:
2. Acceptable Manufacturers:
  - a. Burns
  - b. Rockwood

### B. Requirements:

1. Provide push plates, push bars, pull plates, and pulls with diameter and length as scheduled.

## 2.13 PROTECTION PLATES

- A. Manufacturers:
  - 1. Scheduled Manufacturer:
    - a. Ives
  - 2. Acceptable Manufacturers:
    - a. Trimco
    - b. Rockwood
- 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. Size 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.

## 2.14 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. Provide friction type at doors without closer and positive type at doors with closer.

## 2.15 DOOR STOPS AND HOLDERS

- A. Manufacturers:
  - 1. Scheduled Manufacturer:
    - a. Ives
  - 2. Acceptable Manufacturers:
    - a. Burns
    - b. Rockwood
- B. Provide door stops at each door leaf:
  - 1. Provide wall stops wherever possible. Provide concave type where lockset has a push button or 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.

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

- A. Manufacturers:
1. Scheduled Manufacturer:
    - a. Zero International
  2. Acceptable Manufacturers:
    - a. National Guard
    - b. Reese
- 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.

2.17 DOOR POSITION SWITCHES

- A. Manufacturers:
1. Scheduled Manufacturer:
    - a. Schlage
  2. Acceptable Manufacturers:
    - a. GE-Interlogix
    - b. Sargent
- B. Requirements:
1. Provide recessed or surface mounted type door position switches as specified.
  2. Coordinate door and frame preparations with door and frame suppliers. If switches are being used with magnetic locking device, provide minimum of 4 inches (102 mm) between switch and magnetic locking device.

2.18 FINISHES

- A. Finish: BHMA 626/652 (US26D); except:
1. Push Plates, Pulls, and Push Bars: BHMA 630 (US32D)
  2. Protection Plates: BHMA 630 (US32D)
  3. Overhead Stops and Holders: BHMA 630 (US32D)
  4. Door Closers: Powder Coat to Match
  5. Wall Stops: BHMA 630 (US32D)
  6. Weatherstripping: Clear Anodized Aluminum
  7. Thresholds: Mill Finish Aluminum

## PART 1 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. Field verify existing doors and frames receiving new hardware and existing conditions receiving new openings. Verify that new hardware is compatible with existing door and frame preparation and existing conditions.
- C. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- D. Submit a list of deficiencies in writing and proceed with installation only after unsatisfactory conditions have been corrected.

### 3.02 PREPARATION

- A. Where on-site modification of doors and frames is required:
  - 1. Carefully remove existing door hardware and components being reused. Clean, protect, tag, and store in accordance with storage and handling requirements specified herein.
  - 2. Field modify and prepare existing doors and frames for new hardware being installed.
  - 3. When modifications are exposed to view, use concealed fasteners, when possible.
  - 4. Prepare hardware locations and reinstall in accordance with installation requirements for new door hardware and with:
    - a. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
    - b. Wood Doors: DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."
    - c. Doors in rated assemblies: NFPA 80 for restrictions on on-site door hardware preparation.

### 3.03 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 each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.
- C. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.

- D. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.
- E. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- F. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.
- G. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated.
- H. 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.
- I. 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.
- J. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
- K. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.
- L. Closer/holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.
- M. 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.
- N. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."
- O. 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.
- P. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
- Q. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
- R. Door Bottoms and Sweeps: Apply to bottom of door, forming seal with threshold when door is closed.

### 3.04 FIELD QUALITY CONTROL

- A. Inspection and Testing:
  - 1. Provide functional testing and inspection of fire door assemblies by a qualified person in accordance with NFPA 80.
    - a. Schedule fire door assembly inspection within 90 days of Substantial Completion of the Project.
    - b. Submit a signed, written final report as specified in Paragraph 1.03.E.1.
    - c. Correct all deficiencies and schedule a reinspection of fire door assemblies noted as deficient on the inspection report.
    - d. Inspector to reinspect fire door assemblies after repairs are made.
  - 2. Provide inspection of required egress door assemblies by a qualified person in accordance with NFPA 101.
    - a. Schedule egress door assembly inspection within 90 days of Substantial Completion of the Project for the required openings.
    - b. Submit a signed, written final report as specified in Paragraph 1.03.E.2.
    - c. Correct all deficiencies and schedule a reinspection of egress door assemblies noted as deficient on the inspection report.
    - d. Inspector to reinspect required egress door assemblies after repairs are made.

### 3.05 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. 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.

### 3.06 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.

### 3.07 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

1	EA	CONT. HINGE	224HD			628	IVE
1	EA	PASSAGE SET	L9010 06N			626	SCH
1	EA	SURFACE CLOSER	4111 SCUSH			689	LCN

HARDWARE GROUP NO. 02

1	EA	CONT. HINGE	112HD			628	IVE
1	EA	PANIC HARDWARE	CD-99-NL- OP-110MD			626	VON
1	EA	RIM CYLINDER	20-057 ICX			626	SCH
2	EA	FSIC CORE	23-030			626	SCH
1	EA	SFIC MORTISE CYL.	26-091 ICX			626	SCH
1	EA	90 DEG OFFSET PULL	8190EZHD 12" STD			630-316	IVE
1	EA	OH STOP	100S			630	GLY
1	EA	SURFACE CLOSER	4111 EDA			689	LCN
1	EA	PA MOUNTING PLATE	4110-18PA			689	LCN
1	EA	BLADE STOP SPACER	4110-61			689	LCN
1	EA	DOOR SWEEP	39A			A	ZER
1	EA	THRESHOLD	655A			A	ZER

HARDWARE GROUP NO. 03

1	EA	CONT. HINGE	224HD			628	IVE
1	EA	STOREROOM LOCK	L9080T 06N			626	SCH

1	EA	FSIC CORE	23-030			626	SCH
1	EA	OH STOP	100S			630	GLY
1	EA	SURFACE CLOSER	4111 EDA			689	LCN
1	EA	PA MOUNTING PLATE	4110-18PA			689	LCN
1	EA	BLADE STOP SPACER	4110-61			689	LCN
1	EA	DOOR SWEEP	39A			A	ZER
1	EA	THRESHOLD	655A			A	ZER

HARDWARE GROUP NO. 04

1	EA	CONT. HINGE	112HD EPT			628	IVE
1	EA	POWER TRANSFER	EPT10	~		689	VON
1	EA	DELAYED PANIC HARDWARE	CX99-L- M996-06-FS 24 VDC	~		626	VON
1	EA	RIM CYLINDER	20-057 ICX			626	SCH
2	EA	FSIC CORE	23-030			626	SCH
1	EA	SFIC MORTISE CYL.	26-091 ICX			626	SCH
1	EA	OH STOP	100S			630	GLY
1	EA	SURFACE CLOSER	4111 EDA			689	LCN
1	EA	PA MOUNTING PLATE	4110-18PA			689	LCN
1	EA	BLADE STOP SPACER	4110-61			689	LCN
1	EA	DOOR SWEEP	39A			A	ZER
1	EA	THRESHOLD	655A			A	ZER
1	EA	HORN	1910-1 12/24 VDC	~		WHT	SCE
1	EA	DOOR CONTACT	679-05HM	~		BLK	SCE
1	EA	POWER SUPPLY	PS914 900-4RL-FA 900-BBK	~			VON



			120/240 VAC				
2			CARD READER - WORK OF DIVISION 28				
1	EA	NOTE	PROVIDE POINT TO POINT WIRING DIAGRAMS				
1	EA	NOTE	PROVIDE RISER WIRING DIAGRAMS				

CHEXIT EXIT DEVICE TO PROVIDE DELAYED EGRESS. DEPRESSING DEVICE BAR WILL CAUSE AUDIBLE ALARM IN DEVICE AND EXTERNAL HORN BEFORE RELEASING IN 10 SECONDS. FIRE ALARM TO RELEASE DOOR FOR IMMEDIATE EGRESS. INTERIOR CARD READER TO DISARM CHEXIT FOR AUTHORIZED EGRESS. CARD READER OR KEYSWITCH TO RESET CX FROM ALARM STATUS. EXTERIOR CARD READER TO DISARM HEXIT AND RELEASE LEVER TRIM FOR AUTHORIZED INGRESS.

HARDWARE GROUP NO. 05

2	EA	CONT. HINGE	112HD			628	IVE
1	EA	PANIC HARDWARE	CD-9947- NL- OP-110MD			626	VON
1	EA	PANIC HARDWARE	CD-9947- EO			626	VON
2	EA	90 DEG OFFSET PULL	8190EZHD 12" STD			630-316	IVE
3	EA	FSIC CORE	23-030			626	SCH
1	EA	FSIC RIM CYLINDER	20-057 ICX			626	SCH
2	EA	FSIC MORTISE CYL.	26-091 ICX			626	SCH
2	EA	OVERHEAD STOP	100S			630	GLY
2	EA	SURFACE CLOSER	4111 EDA			689	LCN
2	EA	MOUNTING PLATE	4110-18PA			689	LCN

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2	EA	BLADE STOP SPACER	4110-61			689	LCN
2	EA	DOOR SWEEP	39A			A	ZER
1	EA	THRESHOLD	655A			A	ZER

END OF SECTION

SECTION 096813  
TILE CARPETING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Carpet tile, fully adhered.

1.02 REFERENCE STANDARDS

- A. ASTM D2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials 2016.
- B. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source 2019a, with Editorial Revision (2020).
- C. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring 2019, with Editorial Revision (2020).
- D. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride 2016a.
- E. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes 2019a.
- F. CRI (GLP) - Green Label Plus Testing Program - Certified Products Current Edition.
- G. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source 2019.

1.03 SUBMITTALS

- A. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.
- B. Shop Drawings: Indicate layout of joints.
- C. Samples: Submit two carpet tiles illustrating color and pattern design for each carpet color selected.
- D. Concrete Subfloor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.
- E. Manufacturer's Qualification Statement.
- F. Installer's Qualification Statement.
- G. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.
- H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. Extra Carpet Tiles: Quantity equal to 5 percent of total installed of each color and pattern installed.

1

I. Warranty: Lifetime Limited

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing specified carpet tile with minimum three years documented experience.
- B. Installer Qualifications: Company specializing in installing carpet tile with minimum three years documented experience and approved by carpet tile manufacturer.

1.05 FIELD CONDITIONS

- A. Store materials in area of installation for minimum period of 24 hours prior to installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Tile Carpeting:
  - 1. Interface, Inc: [www.interface.com/#sle](http://www.interface.com/#sle).
  - 2. Milliken & Company: [www.milliken.com/#sle](http://www.milliken.com/#sle).
  - 3. Tarkett: [www.commercial.tarkett.com/#sle](http://www.commercial.tarkett.com/#sle).

1

2.02 MATERIALS

- A. Tile Carpeting, Type CPT-1: Field Area, manufactured in one color dye lot.
  - 1. Product: Modular manufactured by Tarkett.
  - 2. Series: Metri II
  - 3. Tile Size: 9 by 36 inch, nominal.
  - 4. Thickness: 0.170"
  - 5. Color: Agate 62107.
  - 6. Pattern: Running Bond.
  - 7. Construction: Patterned Loop.
  - 8. Critical Radiant Flux: Minimum of 0.22 watts/sq cm, when tested in accordance with ASTM E648 or NFPA 253.
  - 9. Surface Flammability Ignition: Pass ASTM D2859 (the "pill test").
  - 10. VOC Content: Provide CRI (GLP) certified product; in lieu of labeling, independent test report showing compliance is acceptable.
  - 11. Stain Resistance: >8 in accordance with AATCC 175-08.
  - 12. Gauge: 5/64" inch.
  - 13. Stitches: 10 per inch.
  - 14. Pile Thickness: 0.122 inch.
  - 15. Density Factor: 6,197 oz/ cu yd.
  - 16. Primary Backing: Synthetic Non-Woven.
  - 17. Secondary Backing Weight: 98 oz/sq yd.
  - 18. Face Weight: 21 oz/sq yd.
- B. Tile Carpeting, Type[CPT-2]: Accent Area, manufactured in one color dye lot.
  - 1. Product: Modular manufactured by Tarkett.
  - 2. Series: Metri II
  - 3. Tile Size: 9 by 36 inch, nominal.

1

4. Thickness: 0.170"
5. Color: Glo Light 62110.
6. Pattern: Running Bond.
7. Construction: Patterned Loop.
8. Critical Radiant Flux: Minimum of 0.22 watts/sq cm, when tested in accordance with ASTM E648 or NFPA 253.
9. Surface Flammability Ignition: Pass ASTM D2859 (the "pill test").
10. VOC Content: Provide CRI (GLP) certified product; in lieu of labeling, independent test report showing compliance is acceptable.
11. Stain Resistance: >8 in accordance with AATCC 175-08.
12. Gauge: 5/64" inch.
13. Stitches: 10 per inch.
14. Pile Thickness: 0.122 inch.
15. Density Factor: 6,197 oz/ cu yd.
16. Primary Backing: Synthetic Non-Woven.
17. Secondary Backing Weight: [98] oz/sq yd.
18. Face Weight: [21] oz/sq yd.

#### 2.03 ACCESSORIES

- A. Subfloor Filler: White premix latex; type recommended by flooring material manufacturer.
- B. Edge Strips: Embossed aluminum, [ ] color.
- C. Carpet Tile Adhesive: Recommended by carpet tile manufacturer; releasable type.

### PART 3 EXECUTION

#### 3.01 EXAMINATION

- A. Verify that subfloor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.
- B. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to subfloor surfaces.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for flooring installation by testing for moisture and alkalinity (pH).
  1. Test as Follows:
    - a. Alkalinity (pH): ASTM F710.
    - b. Internal Relative Humidity: ASTM F2170.
    - c. Moisture Vapor Emission: ASTM F1869.
  2. Obtain instructions if test results are not within limits recommended by flooring material manufacturer and adhesive materials manufacturer.

#### 3.02 PREPARATION

- A. Remove existing carpet.
- B. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
- C. Remove subfloor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with subfloor filler.

- D. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.
- E. Vacuum clean substrate.

### 3.03 INSTALLATION

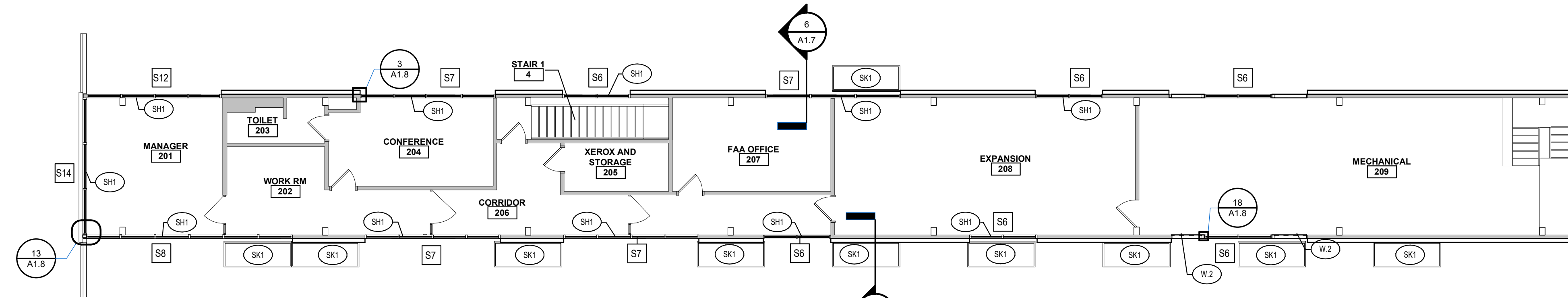
- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install carpet tile in accordance with manufacturer's instructions.
- C. Blend carpet from different cartons to ensure minimal variation in color match.
- D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.
- E. Lay carpet tile in square pattern, with pile direction parallel to next unit, set parallel to building lines.
- F. Trim carpet tile neatly at walls and around interruptions.
- G. Complete installation of edge strips, concealing exposed edges.

### 3.04 CLEANING

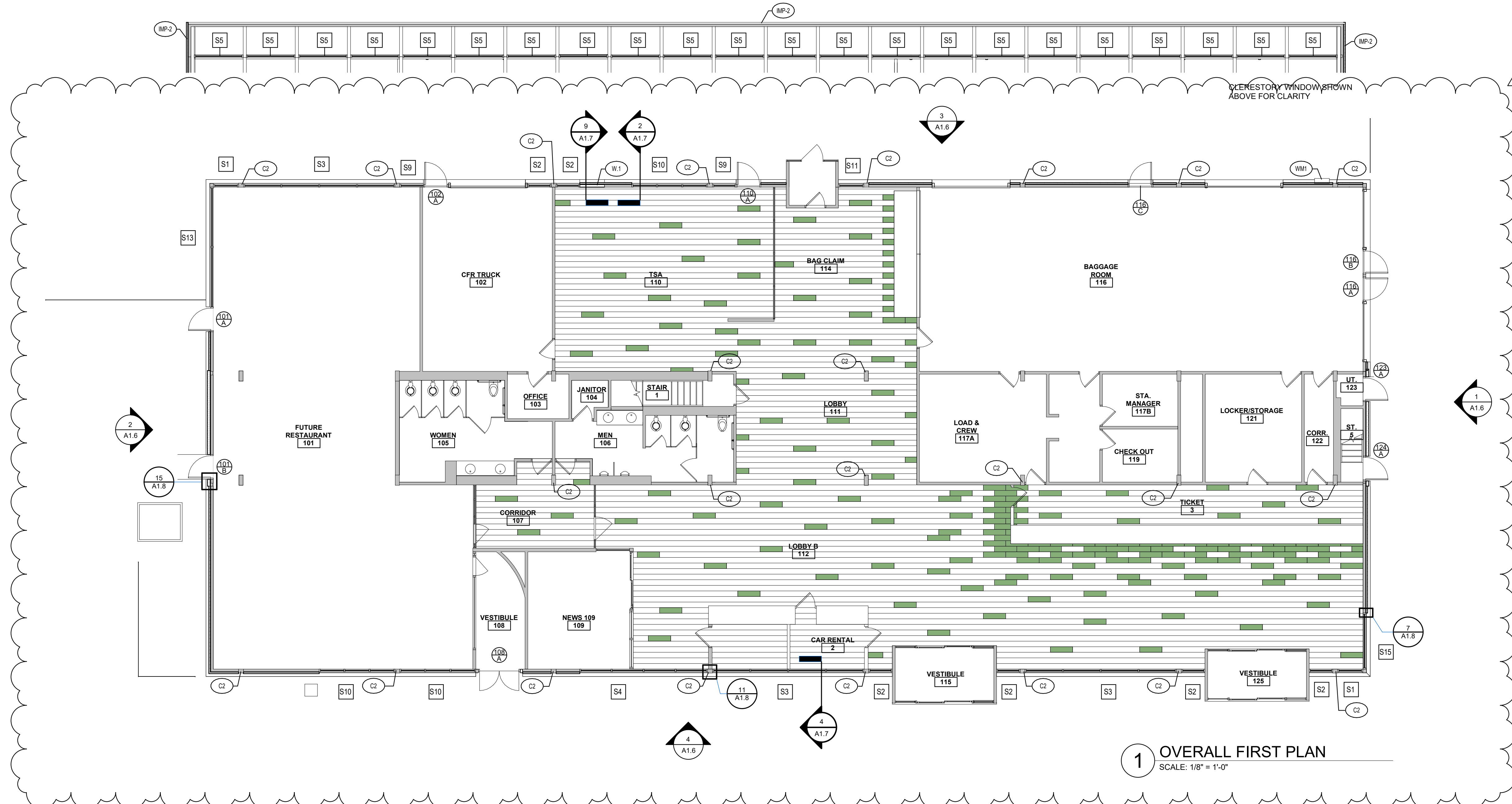
- A. Remove excess adhesive without damage, from floor, base, and wall surfaces.
- B. Clean and vacuum carpet surfaces.

END OF SECTION

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**2 OVERALL SECOND FLOOR**  
SCALE: 1/8" = 1'-0"



**1 OVERALL FIRST PLAN**  
SCALE: 1/8" = 1'-0"

CARPET LEGEND	
[Pattern]	CPT-1 FIELD CARPET TILE AND BASE
[Pattern]	CPT-2 ACCENT CARPET TILE AND BASE
KEYNOTES	
C2	SAND, STAIN, AND VARNISH EXISTING GLULAM COLUMN ON ALL EXPOSED SIDES
IMP-2	INSULATED METAL PANEL SYSTEM
SK1	WINDOW SHADE
SK1	PROVIDE SKYLIGHT AND CURB
W.1	INFILL WALL TO MATCH ADJACENT WALL CONSTRUCTION, THICKNESS, AND FINISHES.
W.2	PROVIDE NECESSARY INFILL TO INCLUDE STUD, GWB, AND FINISHES TO ACCOMMODATE LOUVER. REFER TO 'W' DRAWINGS FOR LOUVER INFO
WM1	REINSTALL SALVAGED WALL MOUNTED CABINET



BCA Architects & Engineers  
Ithaca | Saratoga Springs | Watertown  
WWW.THEBCGROUP.COM



REVISIONS	REVISION DESCRIPTION	NUMBER	DATE	BY
1	Addendum No. 1	1	4/02/21	KSS

LEBANON MUNICIPAL AIRPORT  
LEBANON NEW HAMPSHIRE

TERMINAL BUILDING AND SAND STORAGE AREA IMPROVEMENTS

AIP NO. 3-33-0010-###-2021

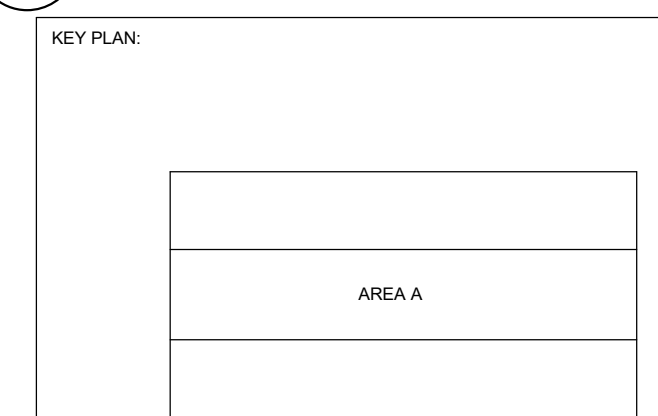
DRAWING DESCRIPTION  
FLOOR PLANS

DRAWN BY	DATE
CMW	3/23/2021
CHECKED BY	D&K PROJECT #
KSS	327021
PROJ. ENG.	BCA PROJECT #
	2020-105

DRAWING NO.

**A1.4**

SHEET: 09 OF 32



GENERAL NOTES	
1) PROVIDE PT BLOCKING BEHIND ALL ELECTRICAL AND MECHANICAL EQUIPMENT AND PIPING SUPPORTS, COORDINATE WITH 'M' AND 'E' DRAWINGS.	
LEGEND	
	OPERABLE WINDOW
	WALL INFILL
	BUILDING MOUNTED LIGHT FIXTURE, REFER TO 'E' DRAWINGS
KEYNOTES	
FS1	IMP METAL FASCIA SYSTEM
IMP-1	INSULATED METAL PANEL SYSTEM
IMP-2	INSULATED METAL PANEL SYSTEM
KY	REINSTALL THROUGH WALL KEY DROP-OFF BOX
LV	LOUVER REFER TO MECHANICAL DRAWING
PNT	PATCH CEMENTITIOUS MATERIAL COATING AND PAINT EXPOSED CONCRETE WALL
S2	10" INDIVIDUAL REVERSE CHANNEL BACKLIT LETTERS ON STAND-OFFS
SC1	NEW OVERFLOW SCUPPER
SK1	PROVIDE SKYLIGHT AND CURB
W.3	PATCH HOLE IN CONCRETE



REVISIONS	
NUMBER	DATE
1	4/02/21
BY	DESCRIPTION
KSS	Addendum No. 1

LEBANON MUNICIPAL AIRPORT  
LEBANON NEW HAMPSHIRE

TERMINAL BUILDING AND SAND STORAGE AREA IMPROVEMENTS

AIP NO. 3-33-0010-###-2021

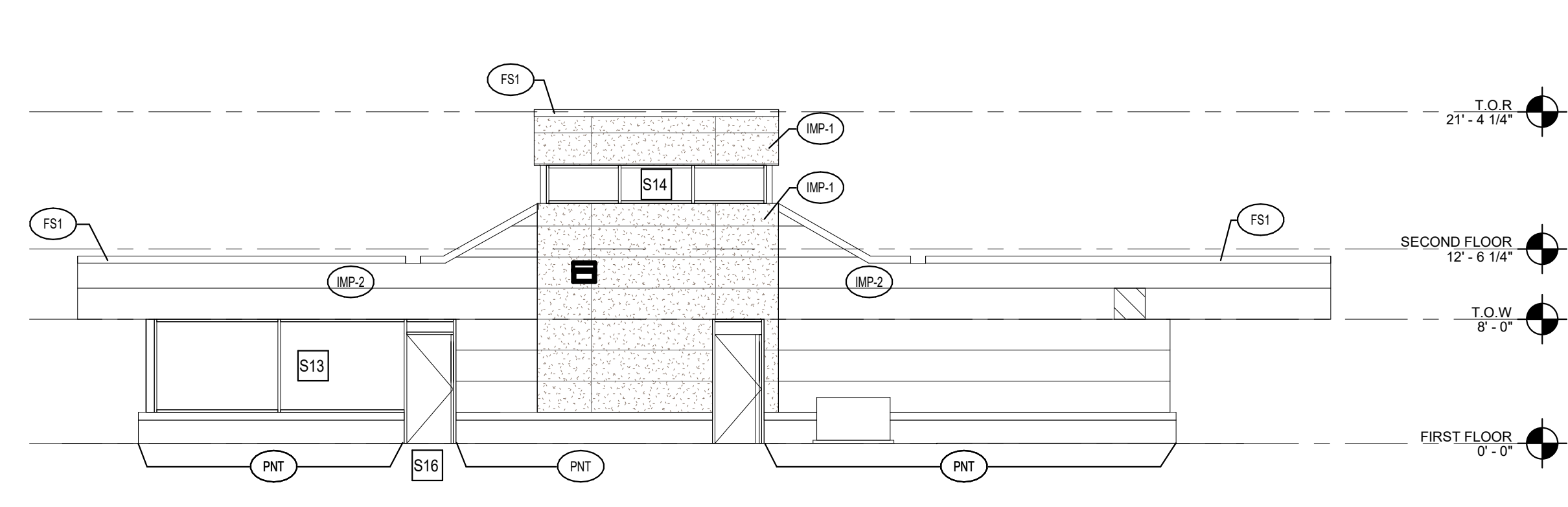
DRAWING DESCRIPTION

BUILDING ELEVATIONS

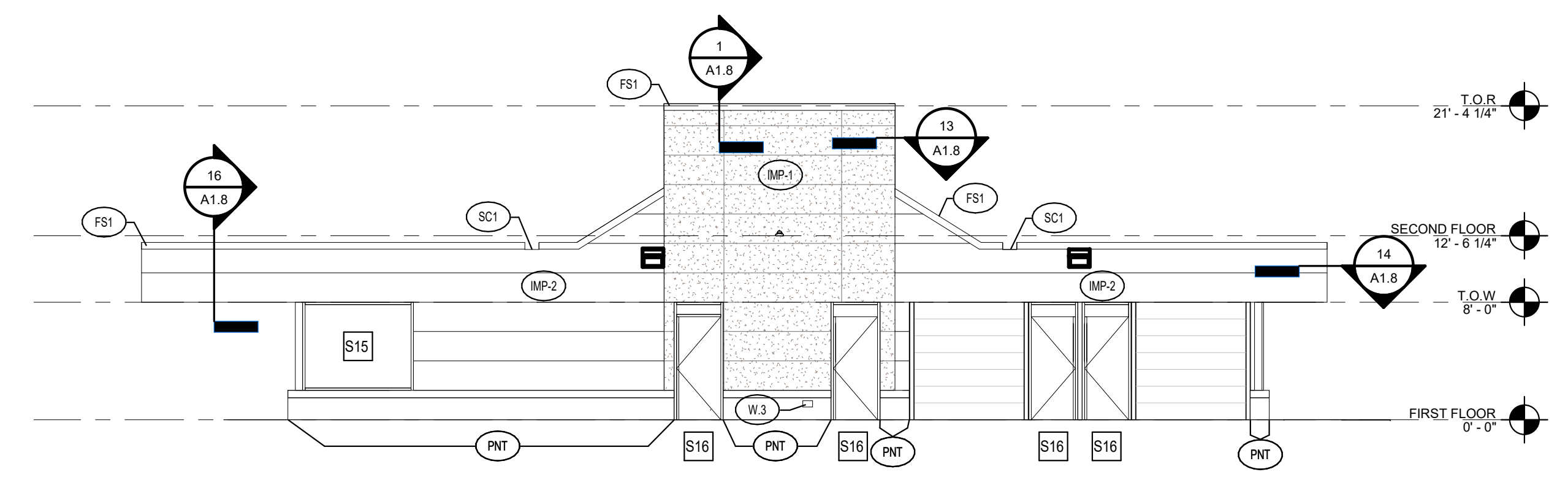
DRAWN BY	DATE
CMW	3/23/2021
CHECKED BY	D&K PROJECT #
KSS	327021
PROJ. ENG.	BCA PROJECT #
Designer	2020-105

DRAWING NO.

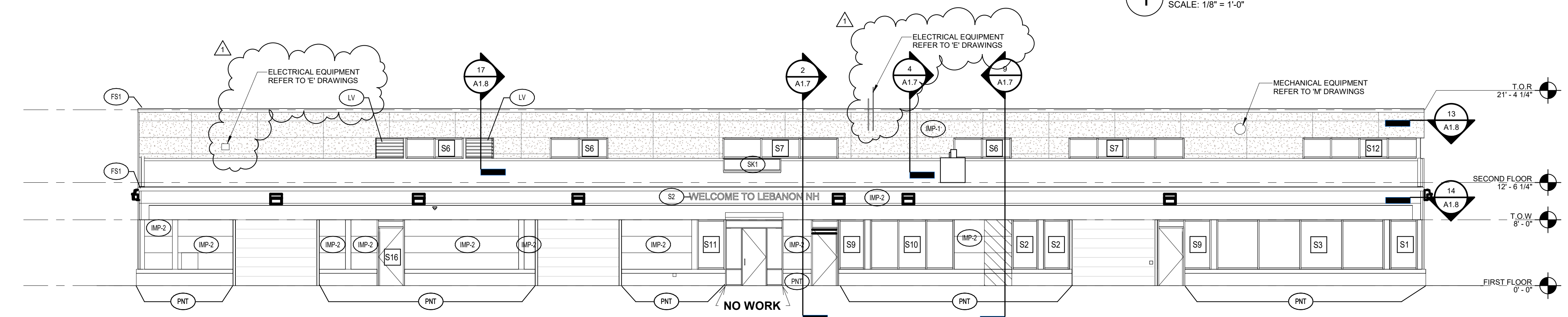
**A1.6**



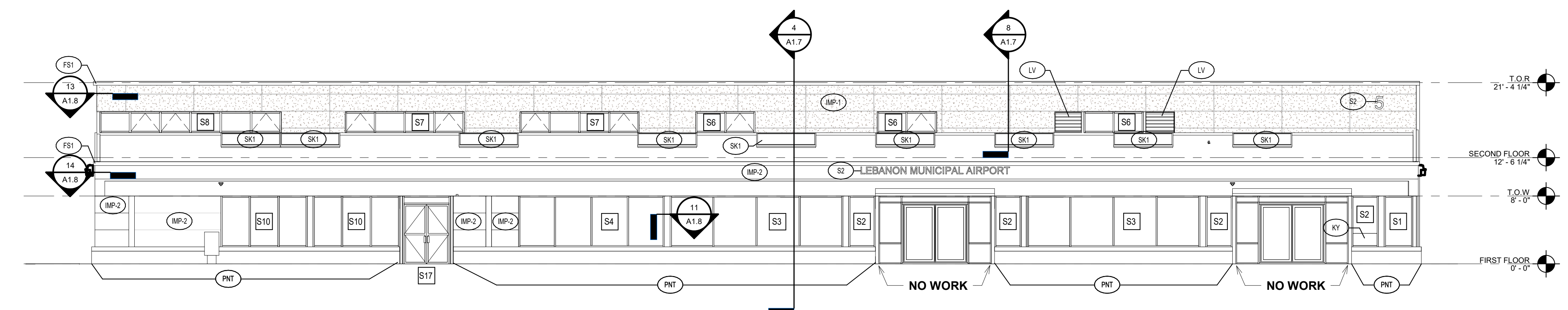
**2 NORTH ELEVATION**  
SCALE: 1/8" = 1'-0"



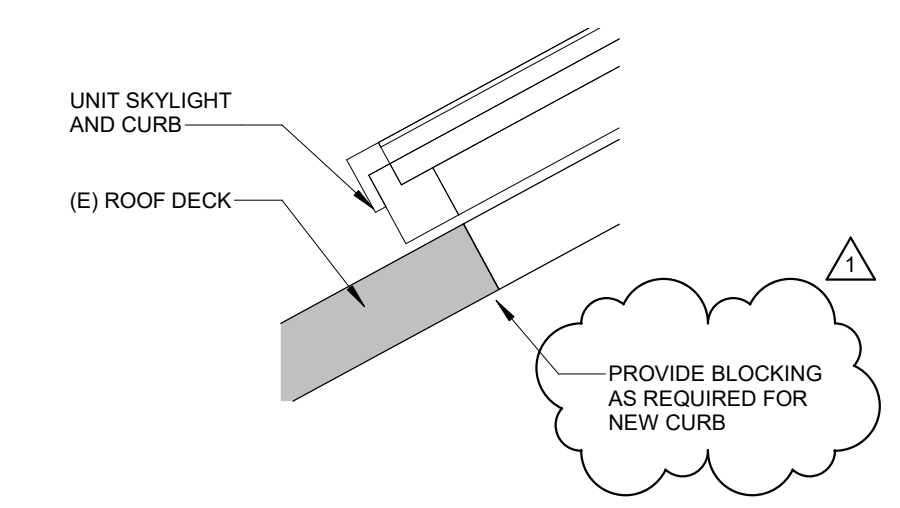
**1 SOUTH ELEVATION**  
SCALE: 1/8" = 1'-0"



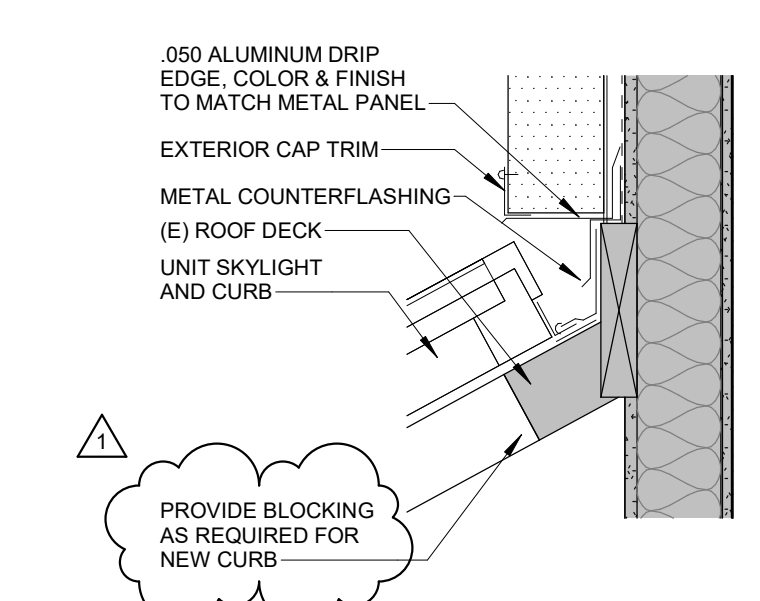
**3 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"



**4 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"



**6 SKYLIGHT DETAIL**  
SCALE: 1 1/2" = 1'-0"



**5 SKYLIGHT DETAIL**  
SCALE: 1 1/2" = 1'-0"

