

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

ADDENDUM NO. 2

TO

SPECIAL PROVISIONS, SPECIFICATIONS, PROPOSAL

FOR

NEW PASS & ID OFFICE
AT
DANIEL K. INOUE INTERNATIONAL AIRPORT

HONOLULU, OAHU, HAWAII

PROJECT NO. CO1322-63

March 10, 2023

This Addendum shall make the following amendments to the Bid Documents:

A. SPECIFICATIONS

1. Section 05500 Metal Fabrications

Delete Section 05500 in its entirety and replace with the attached Section 05500 dated r3/10/2023.

2. Section 07620 Sheet Metal Flashing and Trim

Delete Section 07620 in its entirety and replace with the attached Section 07620 dated r3/10/2023.

3. Section 08710 Finish Hardware

Delete Section 08710 in its entirety and replace with the attached Section 08710 dated r3/10/2023.

4. Section 10511 Metal Lockers

Delete Section 10511 in its entirety and replace with the attached Section 10511 dated r3/10/2023.

5. Section 12590 Systems Furniture

Delete Section 12590 in its entirety and replace with the attached Section 12590 dated r3/10/2023.

B. DRAWINGS

1. All revisions on drawings which are clouded and indicated as Delta 1 are a part of this amendment to the Bid Documents.

2. ARCHITECTURAL:

- a. Delete Sheet A002.2 and replace it with Sheet A002.2 Floor Finish Plan dated 3/10/2023.
 - 1) Revised Floor finish callouts.
- b. Delete Sheet A002.3 and replace it with Sheet A002.3 Floor Finish Plan dated 3/10/2023.
 - 1) Revised Floor finish callouts.
- c. Delete Sheet A002.4 and replace it with Sheet A002.4 Finish Schedule dated 3/10/2023.
 - 1) Revised Carpet Tile (CPT-1, CPT-2) locations.
- d. Delete Sheet A003.1 and replace it with Sheet A003.1 Existing Reflected Ceiling Plan dated 3/10/2023.
 - 1) Revised relocated access panel's location.
 - 2) Revised ceiling/lighting and Main Entry door area.
- e. Delete Sheet A004 and replace it with Sheet A004 New Reflected Ceiling Plan dated 3/10/2023.
 - 1) Added Legend for new access panel.
- f. Delete Sheet A004.1 and replace it with Sheet A004.1 New Reflected Ceiling Plan dated 3/10/2023.
 - 1) Added Legend for new access panel.
 - 2) Revised access panel's location.

- g. Delete Sheet A007 and replace it with Sheet A007 Interior Elevations dated 3/10/2023.
 - 1) Revised Kitchen elevation.
 - 2) Replaced Range with Cooktop for ADA.
 - 3) Removed Sink Cabinet to be open below for ADA.
- h. Delete Sheet A008 and replace it with Sheet A008 Typical Details dated 3/10/2023.
 - 1) Added Typical Window Screen Detail 5/A008.
 - 2) Revised ADA note for Signage Detail 5/A008.
- i. Delete Sheet A008.2 and replace it with Sheet A008.2 Cabinetry Details dated 3/10/2023.
 - 1) Revised Reception Counter for ADA Accessibility.

3. ELECTRICAL:

- a. Delete Sheet E104 and replace it with Sheet E104 Electrical Ceiling Plan 2-Demo Work dated 3/10/2023.
 - 1) Light fixtures in existing Janitor and advantage office spaces are shown to be removed.
 - 2) Light fixtures in existing Utility room are shown as existing and to remain.
- b. Delete Sheet E203 and replace it with Sheet E203 Electrical Ceiling Plan 1 dated 3/10/2023.
 - 1) Light fixtures in Supply room and Offices 3-5 are now shown to be fixture 'F' or 'FE'. Fixtures were previously shown as B or BE.
 - 2) Revised Ceiling to match Architectural and revised lighting.
- c. Delete Sheet E204 and replace it with Sheet E204 Electrical Ceiling Plan 2 dated 3/10/2023.
 - 1) Light fixtures in Men/Women Lockers, IT room, and Offices 1-2 are now shown to be fixture 'F' or 'FE'. Fixtures were previously shown as B or BE.
 - 2) Light fixtures in new break room are shown to be new type 'F' or 'FE'.
 - 3) The shower light fixture is solely type 'E'. Other fixture in room and adjacent wellness room are type D or DE.
 - 4) Janitor room indicates new strip lights type 'I' are to be installed.
 - 5) The restroom entrance lights are denoted to be type 'J'.
 - 6) The 1x4 ceiling light fixtures in men/women's restrooms are now shown to be fixture 'G' or 'GE'. Fixtures were previously shown as B or BE.

- 7) The wall light fixtures in men/women's restrooms are now shown to be fixture 'H'. Fixtures were previously shown as C.
 - 8) Light fixtures in existing Utility room are shown as existing.
- d. Delete Sheet E501 and replace it with Sheet E501 Light Fixture Schedule dated 3/10/2023.
 - 1) Light fixture schedule has been revised.
 - e. Delete Sheet E601 and replace it with Sheet E601 Panel Schedules dated 3/10/2023.
 - 1) Added Telecom/Power pole detail.

C. APPROVED SUBSTITUTION REQUEST

The following items hereinafter listed are approved as equal to the previously specified items, provided all requirements of the contract documents are satisfied.

Approval shall not in any circumstances be construed as an approval for deviations from the contract documents unless the entity seeking such approval has, in writing, specifically called the Engineer's or the approving agency's attention to each such deviation at the time of the submission. Said entity and/or Contractor shall be responsible for coordination of the work pertinent to affected materials, equipment, and labor to ensure proper execution of the work as per the intent of the contract documents.

<u>Section/Item</u>	<u>Specified Brand</u>	<u>Substitute or Alt Brand</u>	<u>Variant Features</u>
<u>Lighting Type</u>			
Type A/AE	NEW STAR AACG24-C20- OC18/CP12- L2401C-RW-UN-DM	KENALL MMAC24-G -2-7-FA-45L40K-DDC-DV	
Type B/BE	H.E. WILLIAMS 50G-S14-L27/840- FAF12125-WET- DRV-UNV	HEALTHCARE LIGHTING HSTL 1X4 G MVOLT SYD ALM 3000LM 40K 80CRI ZT MIN10 OAW MWAM	
Type C/CE	H.E. WILLIAMS 50G-S14-L27/840- FAF12125-WET- DRV-UNV	LUMINAIRE LED LVP524 4FT PRD 2700LM 40K MVOLT CLP WHT WL	

<u>Section/Item</u>	<u>Specified Brand</u>	<u>Substitute or Alt Brand</u>	<u>Variant Features</u>
Type D	KIRLIN LIGHTING	KENALL M4DL4-DCFW-14L-40K8- CSS-RIS4-120-DIM1 MRR -04800-1500L - 120-41K-WFL	
Type E	INTENSE LIGHTING FIXTURE: GD4DRL 340-D101-WF REFLECTOR: IRD402W-SF	GOTHAM ICO4 40/20 ICO4 40/20 AR LSS 500 120 GZ1	
Type X	EVENLITE AUR-1 -WH-CN	LITHONIA LE S W 1 G EL N SD	AC VOLT & 90 MIN BATTERY NOT AVAILABLE W/PHOTOLUM
SECTION 10511 Metal Lockers	HADRIAN	TUFFTEC BENCH	

D. NOT APPROVED SUBSTITUTION REQUEST

<u>Section/Item</u>	<u>Specific Brand</u>	<u>Substitute or Alt Brand</u>
SECTION 10511 Metal Lockers	Scranton Products	Tufftec Lockers

The following are provided for information.

E. PRE-BID MEETING MINUTES

The pre-bid meeting minutes and signed attendance sheet are provided for information.

F. CONTRACTORS TRAINING GUIDE

The attached Contractors Training Guide dated July 2013 is provided for information.

G. FURNITURE PLAN

The attached proposed furniture plan by The Systemcenter, Inc. dated September 15, 2022 (with comments) is provided for information.

H. RESPONSE TO REQUEST FOR INFORMATION (RFI'S / QUESTIONS)

The attached Response to Request for Information is provided for information.

Please acknowledge the receipt of this Addendum No. 2 by recording the date of its receipt in the space provided on page P-4 of the Proposal.



EDWIN H. SNIFFEN
Director of Transportation

SECTION 05500 - METAL FABRICATIONS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Miscellaneous steel framing and supports.
2. Shelf angles.
3. Metal floor plate and supports.
4. Structural-steel door frames.
5. Miscellaneous steel trim.
6. Loose bearing and leveling plates.

B. Products furnished, but not installed, under this Section include the following:

1. Loose steel lintels.
2. Anchor bolts, steel pipe sleeves, slotted-channel inserts, and wedge-type inserts indicated to be cast into concrete or built into unit masonry.
3. Steel weld plates and angles for casting into concrete for applications where they are not specified in other Sections.

1.02 ACTION SUBMITTALS

A. Product Data: For the following:

1. Prefabricated building columns.
2. **Aluminum Fixed Vertical Ladder & Components**
3. Paint products.

B. Shop Drawings: Show fabrication and installation details. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling,

opening of joints, overstressing of components, failure of connections, and other detrimental effects.

1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.02 METALS

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.
- B. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of pre-consumer recycled content not less than twenty-five (25) percent.
- C. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- D. Stainless-Steel Bars and Shapes: ASTM A 276, Type 316
- E. Rolled-Steel Floor Plate: ASTM A 786/A 786M, rolled from plate complying with ASTM A 36/A 36M or ASTM A 283/A 283M, Grade C or D.
- F. Rolled-Stainless-Steel Floor Plate: ASTM A 793.
- G. Abrasive-Surface Floor Plate: Steel plate with abrasive granules rolled into surface.

Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following]:

 - a. IKG Industries, a division of Harsco Corporation; Mebac.
 - b. SlipNOT Metal Safety Flooring; SlipNOT.
- H. Steel Tubing: ASTM A 500/A 500M, cold-formed steel tubing.
- I. Steel Pipe: ASTM A 53/A 53M, Standard Weight (Schedule 40) unless otherwise indicated.
- J. Zinc-Coated Steel Wire Rope: ASTM A 741.
 1. Wire-Rope Fittings: Hot-dip galvanized-steel connectors with capability to sustain, without failure, a load equal to minimum breaking strength of wire rope with which they are used.
- K. Slotted Channel Framing: Cold-formed metal box channels (struts) complying with MFMA-4.

1. Size of Channels: As indicated.
 2. Material: Galvanized steel, ASTM A 653/A 653M, structural steel, Grade 33 (Grade 230), with G90 (Z275) coating; 0.108-inch (2.8-mm) nominal thickness.
 3. Material: Cold-rolled steel, ASTM A 1008/A 1008M, structural steel, Grade 33 (Grade 230); 0.0966-inch (2.5-mm) minimum thickness; hot-dip galvanized after fabrication.
- L. Cast Iron: Either gray iron, ASTM A 48/A 48M, or malleable iron, ASTM A 47/A 47M, unless otherwise indicated.
- M. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), Alloy 6063-T6.
- N. Aluminum-Alloy Rolled Tread Plate: ASTM B 632/B 632M, Alloy 6061-T6.
- O. Aluminum Castings: ASTM B 26/B 26M, Alloy 443.0-F.
- P. Bronze Extrusions: ASTM B 455, Alloy UNS No. C38500 (extruded architectural bronze).
- Q. Bronze Castings: ASTM B 584, Alloy UNS No. C83600 (leaded red brass) or No. C84400 (leaded semired brass).
- R. Nickel Silver Castings: ASTM B 584, Alloy UNS No. C97600 (20 percent leaded nickel bronze).

2.03 FASTENERS

- A. General: Unless otherwise indicated, provide Type 316 stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633 or ASTM F 1941 (ASTM F 1941M), Class Fe/Zn 5, at exterior walls. Select fasteners for type, grade, and class required.
1. Provide stainless-steel fasteners for fastening aluminum.
 2. Provide stainless-steel fasteners for fastening stainless steel.
 3. Provide stainless-steel fasteners for fastening nickel silver.
 4. Provide bronze fasteners for fastening bronze.
- B. Cast-in-Place Anchors in Concrete: Either threaded type or wedge type unless otherwise indicated; galvanized ferrous castings, either ASTM A 47/A 47M malleable iron or ASTM A 27/A 27M cast steel. Provide bolts, washers, and shims as needed, all hot-dip galvanized per ASTM F 2329.
- C. Post-Installed Anchors: Chemical anchors.

1. Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B 633 or ASTM F 1941 (ASTM F 1941M), Class Fe/Zn 5, unless otherwise indicated.
 2. Material for Exterior Locations and Where Stainless Steel Is Indicated: stainless-steel bolts, ASTM F 593 (ASTM F 738M), and nuts, ASTM F 594 (ASTM F 836M).
- D. Slotted-Channel Inserts: Cold-formed, hot-dip galvanized-steel box channels (struts) complying with MFMA-4, 1-5/8 by 7/8 inches (41 by 22 mm) by length indicated with anchor straps or studs not less than 3 inches (75 mm) long at not more than 8 inches (200 mm) o.c. Provide with temporary filler and tee-head bolts, complete with washers and nuts, all zinc-plated to comply with ASTM B 633, Class Fe/Zn 5, as needed for fastening to inserts.

2.04 MISCELLANEOUS MATERIALS

- A. Low-Emitting Materials: Paints and coatings shall comply with the testing and product requirements of the California Department of Public Health's (formerly, the California Department of Health Services') "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- B. Shop Primers: Provide primers that comply with Section 099113 "Exterior Painting." And Section 099123 Interior Painting."
- C. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.
1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.
- D. Water-Based Primer: Emulsion type, anticorrosive primer for mildly corrosive environments that is resistant to flash rusting when applied to cleaned steel, complying with MPI#107 and compatible with topcoat.
- E. Epoxy Zinc-Rich Primer: Complying with MPI#20 and compatible with topcoat.
- F. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.
- G. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.

- H. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107/C 1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- I. Concrete: Comply with requirements in Section 03300 "Cast-in-Place Concrete" for normal-weight, air-entrained, concrete with a minimum 28-day compressive strength of 3000 psi (20 MPa).

2.05 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Use connections that maintain structural value of joined pieces.
- B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges. Remove sharp or rough areas on exposed surfaces.
- C. Weld corners and seams continuously to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended.
- D. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Locate joints where least conspicuous.
- E. Fabricate seams and other connections that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- F. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors not less than 8 inches (200 mm) from ends and corners of units and 24 inches (600 mm) o.c.

2.06 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.
- B. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.

- C. Fabricate steel girders for wood frame construction from continuous steel shapes of sizes indicated.
 - 1. Where wood nailers are attached to girders with bolts or lag screws, drill or punch holes at 24 inches (600 mm) o.c.
- D. Fabricate steel pipe columns for supporting wood frame construction from steel pipe with steel baseplates and top plates as indicated. Drill or punch baseplates and top plates for anchor and connection bolts and weld to pipe with fillet welds all around. Make welds the same size as pipe wall thickness unless otherwise indicated.

2.07 SHELF ANGLES

- A. Fabricate shelf angles from steel angles of sizes indicated and for attachment to concrete framing. Provide horizontally slotted holes to receive 3/4-inch (19-mm) bolts, spaced not more than 6 inches (150 mm) from ends and 24 inches (600 mm) o.c., unless otherwise indicated.
- B. For cavity walls, provide vertical channel brackets to support angles from backup masonry and concrete.
- C. Galvanize shelf angles located in exterior walls.
- D. Prime shelf angles located in exterior walls with zinc-rich primer.
- E. Furnish wedge-type concrete inserts, complete with fasteners, to attach shelf angles to cast-in-place concrete.

2.08 MISCELLANEOUS STEEL TRIM

- A. Unless otherwise indicated, fabricate units from steel shapes, plates, and bars of profiles shown with continuously welded joints and smooth exposed edges. Miter corners and use concealed field splices where possible.
- B. Provide cutouts, fittings, and anchorages as needed to coordinate assembly and installation with other work.
- C. Galvanize exterior miscellaneous steel trim.
- D. Prime miscellaneous steel trim with zinc-rich primer specified

2.09 LOOSE BEARING AND LEVELING PLATES

- A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction. Drill plates to receive anchor bolts and for grouting.

2.010 LOOSE STEEL LINTELS

- A. Fabricate loose steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated.
- B. Galvanize loose steel lintels located in exterior walls.
- C. Prime loose steel lintels located in exterior walls with zinc-rich primer.

2.011 STEEL WELD PLATES AND ANGLES

- A. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the Work. Provide each unit with no fewer than two integrally welded steel strap anchors for embedding in concrete.

2.012 FINISHES, GENERAL

- A. Finish metal fabrications after assembly.

2.013 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153/A 153M for steel and iron hardware and with ASTM A 123/A 123M for other steel and iron products.
- B. Shop prime iron and steel items not indicated to be galvanized unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.
 - 1. Shop prime with zinc-rich primer is as indicated.
- C. Preparation for Shop Priming: Prepare surfaces to comply with requirements indicated below.
 - 1. Exterior Items: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
 - 2. Items Indicated to Receive Zinc-Rich Primer: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."

3. Items Indicated to Receive Primers Specified in Section 099600 "High-Performance Coatings": SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
 4. Other Items: SSPC-SP 3, "Power Tool Cleaning."
- D. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.

2.014 ALUMINUM FIXED VERTICAL LADDER

A. Aluminum Fixed Vertical Ladder and Components: Ladder, fall arrest system, walk-thru, side rails, cage, rest platforms, floor mounting brackets, security gates and finishes.

1. Aluminum Fixed Vertical Ladder as manufactured by Precision Ladders LLC or Approved equal.
2. Capacity: Unit shall support a 1,500 lb (680 Kg) loading without failure.
3. Performance Standard: Units shall be designed and manufactured to meet or exceed ANSI A14.3 and OSHA 1910.23, 1910.28, and 1910.29.

B. Components:

1. Ladder Stringer: 2-1/2 x 1-1/16 x 1/8 inch (64 x 27 x 3 mm) extruded 6005-T5 aluminum channel. Pitch: 90 degrees.
2. Ladder Tread: 2-1/4 x 3/4 x 1/4 inch (57 x 19 x 6 mm) extruded 6005-T5 aluminum with deeply serrated top surface.
3. Ladder Mounting Bracket: 8-1/2 x 2 x 3 x 1/4 inch thick (216 x 51 x 76 x 6 mm) aluminum angle.
4. Fall Arrest System: Complete system with rail, sleeves, and harness to limit any fall to 6 inches (152 mm). Removeable Post for Hatch Access Ladders with Fall Arrest System. Harness by others.
5. Walk-Thru:
 - A. Hand Rails: 1-1/4 inch (32 mm) aluminum square tube with rounded edges.
 - B. Mounting Brackets: 4 x 4 x 1/4 inch (102 x 102 x 6 mm) aluminum.
 - C. Side Rails: 42 inch (1067 mm) side rail extension for through ladder exits.
6. Safety Cage: Vertical and Horizontal Bars: 1/4 x 2 inch (6 x 51 mm) 6005-T5 aluminum flat bar.
7. Rest Platform:
 - D. Material: Bar grating.
 - E. Platform Size: 30 x 48 inches (762 x 1219 mm) standard.
 - F. Toe Boards. 6005 T-5 aluminum.
 - G. Handrails: 1-1/4 inches (32 mm) aluminum square tube 42 inches (1067 mm) high.

9. Security Gate: Hinged gate at bottom of cage with padlock provision. (Note: Security Gate only required for Stair #1).
10. Floor Brackets: Floor bracket at foot of each stringer, 3 x 2 x 1/4 inch (76 x 51 x 6 mm).
11. Finish: Clear anodized.

PART 3 - EXECUTION

3.01 INSTALLATION, GENERAL

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- C. Field Welding: Comply with the following requirements:
 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.
 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction.
- E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

3.02 INSTALLING BEARING AND LEVELING PLATES

- A. Clean concrete and masonry bearing surfaces of bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of plates.
- B. Set bearing and leveling plates on wedges, shims, or leveling nuts. After bearing members have been positioned and plumbed, tighten anchor bolts. Do not remove

wedges or shims but, if protruding, cut off flush with edge of bearing plate before packing with nonshrink grout. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.03 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
- B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780/A 780M.

PART 4 - MEASUREMENT AND PAYMENT

4.01 BASIS OF MEASUREMENT AND PAYMENT

- A. Work under this section will not be measured nor paid for separately, but shall be considered incidental to and included in the price bid for the various items of work in this project.

END OF SECTION

SECTION 07620 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Manufactured reglets with counterflashing.
2. Formed roof-drainage sheet metal fabrications.
3. Formed low-slope roof sheet metal fabrications.
4. Formed steep-slope roof sheet metal fabrications.
5. Formed wall sheet metal fabrications.

1.02 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For sheet metal flashing and trim.

1. Include plans, elevations, sections, and attachment details.
2. Distinguish between shop- and field-assembled work.
3. Include identification of finish for each item.
4. Include pattern of seams and details of termination points, expansion joints and expansion-joint covers, direction of expansion, roof-penetration flashing, and connections to adjoining work.

C. Samples: For each exposed product and for each color and texture specified.

1.03 INFORMATIONAL SUBMITTALS

A. Product certificates.

B. Product test reports.

C. Sample warranty.

1.04 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.05 QUALITY ASSURANCE

- A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
 - 1. For copings and roof edge flashings that are SPRI ES-1 tested, shop shall be listed as able to fabricate required details as tested and approved.

1.06 WARRANTY

- A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

- A. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
- C. Sheet Metal Standard for Copper: Comply with CDA's "Copper in Architecture Handbook." Conform to dimensions and profiles shown unless more stringent requirements are indicated.
- D. SPRI Wind Design Standard: Manufacture and install copings and roof edge flashings tested according to SPRI ES-1 and capable of resisting wind speed of 105 mph per IBC 2006.
 - 1. Design Pressure: Resist pressures related to 105 mph winds.

- E. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.
- F. FM Approvals' Listing: Manufacture and install copings and roof-edge flashings that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, Class 1-90. Identify materials with FM Approvals' markings.
- G. SPRI Wind Design Standard: Manufacture and install copings and roof-edge flashings tested according to SPRI ES-1 and capable of resisting the following design pressures:
 - 1. Design Pressure: Resist pressure related to 105 mph winds.

2.02 SHEET METALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Copper Sheet: ASTM B 370, cold-rolled copper sheet, H00 or H01 temper.
 - 1. Nonpatinated Exposed Finish: Mill.
- C. Aluminum Sheet: ASTM B 209 (ASTM B 209M), alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required.
 - 1. **Factory Prime Coating: Where painting after installation is required, pretreat metal with white or light-colored, factory-applied, baked-on epoxy primer coat; minimum dry film thickness of 0.2 mil (0.005 mm).**
 - 2. **Color: Dark Bronze. Field paint minimum 2 coats.**
- D. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304, dead soft, fully annealed; 2D (dull, cold rolled) finish as indicated in documents.
- E. Metallic-Coated Steel Sheet: Provide zinc-coated (galvanized) steel sheet according to ASTM A 653/A 653M, G90 (Z275) coating designation and/or aluminum-zinc alloy-coated steel sheet according to ASTM A 792/A 792M, Class AZ50 (Class AZM150) coating designation, Grade 40 (Grade 275); prepainted by coil-coating process to comply with ASTM A 755/A 755M as noted on drawings.
 - 1. Surface: Mill phosphatized for field painting Manufacturer's standard clear acrylic coating on both sides. One coat primer and two finish coat minimum.
 - 2. Exposed Coil-Coated Finish:
 - a. Three-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear

topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

2. Color: As selected by Architect from manufacturer's full range.

2.03 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Sheet: Minimum 30 mils (0.76 mm) thick, consisting of a slip-resistant polyethylene- or polypropylene-film top surface laminated to a layer of butyl- or SBS-modified asphalt adhesive, with release-paper backing; specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer according to written recommendations of underlayment manufacturer.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following]:
 - a. Carlisle Residential, a division of Carlisle Construction Materials; WIP 300HT.
 - b. Grace Construction Products, a unit of W. R. Grace & Co.-Conn.; Grace Ice and Water Shield HT.
 - c. Henry Company; Blueskin PE200 HT.
 - d. Kirsch Building Products, LLC; Sharkskin Ultra SA.
 - e. Metal-Fab Manufacturing, LLC; MetShield.
 - f. Owens Corning; WeatherLock Specialty Tile & Metal Underlayment.
 - g. Polyguard Products, Inc.; Deck Guard HT.
 - h. Protecto Wrap Company; Protecto Jiffy Seal Ice & Water Guard HT.
 - i. SDP Advanced Polymer Products Inc; Palisade SA-HT.
2. Thermal Stability: ASTM D 1970; stable after testing at 240 deg F (116 deg C) or higher.
3. Low-Temperature Flexibility: ASTM D 1970; passes after testing at minus 20 deg F (29 deg C) or lower.

- B. Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. (0.16 kg/sq. m) minimum as required.

2.04 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim

installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.

B. Fasteners: Stainless steel, Type 316, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer.

1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide neoprene sealing washers under heads of exposed fasteners bearing on weather side of metal.
 - b. Blind Fasteners: High-strength stainless-steel rivets suitable for metal being fastened.
 - c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
2. Fasteners for Copper Sheet: Copper, hardware bronze or passivated Series 300 stainless steel.
3. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
4. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.
5. Fasteners for Zinc-Coated (Galvanized) or Aluminum-Zinc Alloy-Coated Steel Sheet: Series 300 stainless steel or hot-dip galvanized steel according to ASTM A 153/A 153M or ASTM F 2329.

C. Solder:

1. For Copper: ASTM B 32, Grade Sn50.
2. For Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.
3. For Zinc-Coated (Galvanized) Steel: ASTM B 32, Grade Sn50.

D. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.

E. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

F. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

- G. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.
- H. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.
- I. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.
- J. Neoprene Flashing Cement: ASTM D816

2.05 MANUFACTURED REGLETS

- A. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated with factory-mitered and -welded corners and junctions and with interlocking counterflashing on exterior face, of same metal as reglet as noted on drawings.
 - 1. Manufacturers: Subject to compliance with requirements.
 - 2. Material: Copper, 16 oz./sq. ft. (0.55 mm thick).
 - 3. Finish: Mill.

2.06 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
 - 1. Obtain field measurements for accurate fit before shop fabrication.
 - 2. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
 - 3. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
- B. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
 - 1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.
 - 2. Use lapped expansion joints only where indicated on Drawings.
 - 3. Locate expansion joint per smacna requirements.

- C. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.
- D. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- E. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.
- F. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- G. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength without affecting expansion capabilities.
- H. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints where necessary for strength without affecting expansion capabilities.

2.07 ROOF-DRAINAGE SHEET METAL FABRICATIONS

- A. Hanging Gutters: Fabricate to cross section required, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch- (2400-mm-) long sections. Furnish flat-stock gutter brackets and gutter spacers and straps fabricated from same metal as gutters, of size recommended by cited sheet metal standard but with thickness not less than twice the gutter thickness. Fabricate expansion joints, expansion-joint covers, and gutter accessories from same metal as gutters and starting seam roofing. Shop fabricate interior and exterior corners.
 - 1. Accessories: Continuous, removable leaf screen with matching sheet metal frame and matching metal cloth screen Wire-ball downspout strainer.
- B. Built-in Gutters: Fabricate to cross section required, with riveted and soldered joints, complete with end pieces, outlet tubes, and other special accessories as required. Fabricate in minimum 96-inch- (2400-mm-) long sections. Fabricate expansion joints and accessories from same metal as gutters unless otherwise indicated.
 - 1. Accessories: Continuous, removable leaf screen with copper frame and copper cloth screen. Copper wire-ball downspout strainer.
 - 2. Fabricate from the Following Materials:

- a. Copper: 16 oz./sq. ft. (0.55 mm thick).
- C. Downspouts: Fabricate round downspouts to dimensions indicated, complete with mitered elbows. Furnish with metal hangers from same material as downspouts and anchors. Shop fabricate elbows.
 - 1. Hanger Style: as indicated on drawings.
 - 2. Fabricate from the following materials:
 - a. Copper: 1/8" thick min.
 - b. Aluminum-Zinc Alloy-Coated Steel or galvalum: 1/8" thick min.
- D. Parapet Scuppers: Fabricate scuppers to dimensions required, with closure flange trim to exterior, 4-inch- (100-mm-) wide wall flanges to interior, and base extending 4 inches (100 mm) beyond cant or tapered strip into field of roof per details. Fabricate from the following materials:
 - 1. Copper: 16 oz./sq. ft. (0.55 mm thick).

2.08 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Copings: Fabricate in minimum 96-inch- (2400-mm-) long, but not exceeding 12-foot- (3.6-m-) long, sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external leg and interior leg. Miter corners, fasten and seal and solder or weld watertight. Shop fabricate interior and exterior corners.
 - 1. Fabricate from the Following Materials:
 - a. Copper: 24 oz./sq. ft. (0.82 mm thick).
- B. Base Flashing: [Shop fabricate interior and exterior corners.]Fabricate from the following materials:
 - 1. Copper: 20 oz./sq. ft. (0.68 mm thick).
- C. Counterflashing and Flashing Receivers: Fabricate from the following materials:
 - 1. Copper: 20 oz./sq. ft. (0.55 mm thick).
- D. Roof-Penetration Flashing: Fabricate from the following materials:
 - 1. Copper: 20 oz./sq. ft. (0.55 mm thick).

E. Roof-Drain Flashing: Fabricate from the following materials:

1. Copper: 12 oz./sq. ft. (0.41 mm thick).

2.09 STEEP-SLOPE ROOF SHEET METAL FABRICATIONS

A. Apron, Step, Cricket, and Backer Flashing: Fabricate from the following materials:

1. Zinc Coated Aluminum: 0.032 inch (0.81 mm) thick.
2. Prepainted Galvanized Steel: 0.022 inch (0.56 mm) thick.
3. Aluminum-Zinc Alloy-Coated Steel: 0.022 inch (0.56 mm) thick.

B. Valley Flashing: Fabricate from the following materials:

1. Prepainted Galvanized Steel: 0.028 inch (0.71 mm) thick.
2. Zinc Coated Aluminum-Zinc Alloy-Coated Steel: [0.028 inch (0.71 mm) thick.

C. Drip Edges: Fabricate from the following materials:

1. Zinc Coated Aluminum: 0.032 inch (0.81 mm) thick.
2. Prepainted Galvanized Steel: 0.022 inch (0.56 mm) thick.
3. Aluminum-Zinc Alloy-Coated Steel: 0.022 inch (0.56 mm) thick.

D. Eave, Rake, Ridge, and Hip Flashing: Fabricate from the following materials:

1. Zinc Coated Aluminum: 0.032 inch (0.81 mm) thick.
2. Prepainted Galvanized Steel: 0.022 inch (0.56 mm) thick.
3. Aluminum-Zinc Alloy-Coated Steel: 0.022 inch (0.56 mm) thick.

2.10 WALL SHEET METAL FABRICATIONS

A. Through-Wall Flashing: Fabricate continuous flashings in minimum 96-inch- (2400-mm-) long, but not exceeding 12-foot- (3.6-m-) long, sections, under copings, and at shelf angles. Fabricate discontinuous lintel, sill, and similar flashings to extend 6 inches (150 mm) beyond each side of wall openings; and form with 2-inch- (50-mm-) high, end dams. Fabricate from the following materials:

1. Copper: 16 oz./sq. ft. (0.55 mm thick).

B. Opening Flashings in Frame Construction: Fabricate head, sill,[jamb,] and similar flashings to extend 4 inches (100 mm) beyond wall openings. Form head and sill flashing with 2-inch- (50-mm-) high, end dams. Fabricate from the following materials:

1. Copper: 16 oz./sq. ft. (0.55 mm thick) where indicated.
2. Aluminum: 0.032 inch (0.81 mm) in matching finish for window conditions.
3. Galvanized Steel: 0.022 inch (0.56 mm) at steel frames.
4. Aluminum-Zinc Alloy-Coated Steel: 0.022 inch (0.56 mm) at steel frames.

PART 3 - EXECUTION

3.01 UNDERLAYMENT INSTALLATION

- A. Synthetic Underlayment: Install synthetic underlayment, wrinkle free, according to manufacturers' written instructions, and using adhesive where possible to minimize use of mechanical fasteners under sheet metal.
- B. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free. Prime substrate if recommended by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures. Apply in shingle fashion to shed water, with end laps of not less than 6 inches (150 mm) staggered 24 inches (600 mm) between courses. Overlap side edges not less than 3-1/2 inches (90 mm). Roll laps and edges with roller. Cover underlayment within 14 days.

3.02 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 - 1. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
 - 2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 - 3. Space cleats not more than 12 inches (300 mm) apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
 - 4. Install exposed sheet metal flashing and trim with limited oil canning, and free of buckling and tool marks.
 - 5. Torch cutting of sheet metal flashing and trim is not permitted.
- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.
 - 1. Coat concealed side of galvanized steel, uncoated-aluminum and stainless-steel sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.

2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.
1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with sealant concealed within joints.
 2. Use lapped expansion joints only where indicated on Drawings.
- D. Fasteners: Use fastener sizes that penetrate not less than 3/4 inch (19 mm) for wood screws or substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- F. Seal joints as required for watertight construction. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."
- G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets with solder to width of 1-1/2 inches (38 mm); however, reduce pre-tinning where pre-tinned surface would show in completed Work.
1. Do not solder metallic-coated steel and aluminum sheet.
 2. Do not use torches for soldering.
 3. Heat surfaces to receive solder, and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.
 4. Stainless-Steel Soldering: Tin edges of uncoated sheets, using solder for stainless steel and acid flux. Promptly remove acid flux residue from metal after tinning and soldering. Comply with solder manufacturer's recommended methods for cleaning and neutralization.
 5. Copper Soldering: Tin edges of uncoated sheets, using solder for copper.
- H. Rivets: Rivet joints in uncoated aluminum where necessary for strength.

3.03 ROOF-DRAINAGE SYSTEM INSTALLATION

- A. General: Install sheet metal roof-drainage items to produce complete roof-drainage system according to cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.

- B. Hanging Gutters: Join sections with riveted and soldered joints and seal joints. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchor them in position. Provide end closures and seal watertight with sealant. Slope to downspouts.
 - 1. Install gutter with expansion joints at locations indicated, but not exceeding, 20 feet apart. Install expansion-joint caps.
- C. Built-in Gutters: Join sections with riveted and soldered joints and seal joints. Provide for thermal expansion. Slope to downspouts. Provide end closures and seal watertight with sealant.
 - 1. Install underlayment layer in built-in gutter trough and extend to drip edge at eaves and under underlayment on roof sheathing. Lap sides minimum of 2 inches (50 mm) over underlying course. Lap ends minimum of 4 inches (100 mm). Stagger end laps between succeeding courses at least 72 inches (1830 mm). Fasten with roofing nails. Install slip sheet over underlayment.
 - 2. Install gutter with expansion joints at locations indicated, but not exceeding, 20 feet apart. Install expansion-joint caps.
- D. Downspouts: Join PVC sections with plastic cement and joint fittings. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches (1500 mm) o.c.
- E. Concrete Splash Blocks: Install where downspouts discharge on low-slope roofs and at grade. Set in asphalt roofing cement or elastomeric sealant compatible with the substrate.
- F. Parapet Scuppers: Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane.
- G. Expansion-Joint Covers: Install expansion-joint covers at locations and of configuration indicated. Lap joints minimum of 4 inches (100 mm) in direction of water flow.

3.04 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal flashing and trim to comply with performance requirements and cited sheet metal standard. Provide concealed fasteners where possible, and set units true to line, levels, and slopes. Install work with laps, joints, and seams that are permanently watertight and weather resistant.

- B. Copings: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated. Interlock flashing bottom edge with continuous cleat anchored to substrate.
- C. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of 4 inches (100 mm) over base flashing. Install stainless-steel draw band and tighten.
- D. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing 4 inches (100 mm) over base flashing. Lap counterflashing joints minimum of 4 inches (100 mm).
- E. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with neoprene flashing sealant and clamp flashing to pipes that penetrate roof.

3.05 WALL FLASHING INSTALLATION

- A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to cited sheet metal standard unless otherwise indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.
- B. Through-Wall Flashing: Installation of through-wall flashing is specified in this Section.
- C. Reglets: Installation of reglets is specified in Section 07622, 2.5.
- D. Opening Flashings in Frame Construction: Install continuous head, sill, jamb, and similar flashings to extend 4 inches (100 mm) beyond wall openings.
- E. Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated. Interlock flashing bottom edge with continuous cleat anchored to substrate.

3.06 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

Clean and neutralize flux materials. Clean off excess solder.

- B. Clean off excess sealants.
- C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.

PART 4 - MEASUREMENT AND PAYMENT

4.01 BASIS OF MEASUREMENT AND PAYMENT

- A. Work under this section will not be measured nor paid for separately, but shall be considered incidental to and included in the price bid for the various items of work in this project.

END OF SECTION

SECTION 08710 - FINISH HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

- A. Provide all labor, materials, equipment, tools, etc. for installation of finish hardware as indicated on the drawings and/or specified herein.

1.02 GENERAL REQUIREMENTS

- A. Furnish and deliver to the building site, all finish hardware required for all doors, etc., complete as indicated on the drawings and as specified herein.
- B. It is the intent of these specifications to cover in general the class and character of all finish hardware required.
- C. The hardware list specified hereinafter has been made for the convenience of the Contractor and covers in general the necessary hardware for doors, casework, etc., but all other doors, etc., shown on the plan and not covered by the general characterization shall be fitted with appropriate hardware of the same standards as the hardware described throughout these specifications. Contractor shall furnish hardware schedule as hereinafter specified.
- D. Suppliers proposing substitutes of equivalent products of other than manufacturers named hereinafter shall submit schedules listing products and manufacture specified and product and manufacturer of proposed substitute. This schedule shall be submitted in accordance with Section 01300 Submittals.
- E. Contractor to confirm and coordinate keying system with the State. This project shall be keyed to the existing master system unless told otherwise. Products which are not locally stocked or which must be special ordered are not acceptable.

1.03 SUBMITTALS

- A. SUBMITTALS: Submit six copies of schedule per Section 01330. Organize vertically formatted schedule into "Hardware Sets" with index of doors and headings, indicating complete designations of every item required for each door or opening. Include following information:
 - 1. Type, style, function, size, quantity and finish of hardware items.
 - 2. Use BHMA Finish codes per ANSI A156.18.
 - 3. Name, part number and manufacturer of each item.
 - 4. Fastenings and other pertinent information.
 - 5. Location of hardware set coordinated with floor plans and door schedule.
 - 6. Explanation of abbreviations, symbols, and codes contained in schedule.

7. Mounting locations for hardware.
8. Door and frame sizes, materials and degrees of swing.
9. List of manufacturers used and their nearest representative with address and phone number.
10. Catalog cuts and descriptive literature.
11. Date of jobsite visit.

- B. Bid and submit manufacturer's updated/improved item if scheduled item is discontinued.
- C. If discrepancy between drawings and scheduled material in this section, bid the more expensive of the two choices, note the discrepancy in the submittal and request direction from Architect for resolution.
- D. Furnish as-built/as-installed schedule with closeout documents, including keying schedule, manufacturers' installation, adjustment and maintenance information, and supplier's final inspection report.

1.04 DELIVERY

- A. Examine the plans, specifications, and details in order to check all items so they will be suitable and of perfect fit and delivered where and when required.
- B. All Hardware shall be delivered at the site, packed separately with all trimmings, screws, etc., for the particular door, all properly labeled and numbered so that they can be checked with the hardware list which shall be furnished with the goods when delivered.
- C. Upon delivery of the finishing hardware to the job site by the hardware supplier, the General Contractor shall have a responsible person check in the material at the place for storage. The hardware shall be protected from damage at all times, both prior to and after installation.

1.05 REPRESENTATIVE

Provide services of a competent hardware specialist who is familiar with installation and operation of all finishing hardware items furnished.

PART 2 - PRODUCTS

2.01 MATERIALS

Asbestos Prohibition: No asbestos containing materials or equipment shall be used under this section. The Contractor shall ensure that all materials and equipment incorporated in the project are asbestos-free.

2.02 GENERAL CHARACTER

- A. All hardware shall be of the best quality in construction, design and finish, and free from any defects. Any defective pieces shall be replaced by the Contractor at his own expense.

- B. Hardware shall be of the manufacture, type, weight, function and quality as shown by factory numbers on the hardware schedule. The products of Corbin/Russwin, CCL, Dorma, Hager, LCN Closers, Schlage, Stanley, Telkee, Trimco and Von Duprin, meeting or exceeding the quality and finish of the products specified are also acceptable. The products of other manufacturers are acceptable provided they meet or exceed the quality and finish of the products specified herein and are approved by the Contracting Officer.
- C. Locksets: Mortise locksets shall be the product of a single manufacturer. Cylinders and the locks in which they are used shall be the product of the same manufacturer. All locks shall be classified as Grade I, "Heavy Duty" with six-pin tumblers.
- D. Hinges: Regular bearing and ball bearing types as indicated. hinges for reverse bevel doors with locks shall have pins that are nonremovable by a set screw in the barrel. All hinges shall be 4-1/2 X 4-1/2 unless otherwise noted.
- E. Closers
1. Surface Closers:
 - a. Full rack-and-pinion type cylinder with removable non-ferrous cover and cast iron body. Double heat-treated pinion shaft, single piece forged piston, chrome-silicon steel spring.
 - b. ISO 2000 certified. Units stamped with date-of-manufacture code.
 - c. Independent lab-tested 10,000,000 cycles.
 - d. Non-sized, non-handed, and adjustable. Place closer inside building, stairs, and rooms.
 - e. Plates, brackets and special templating when needed for interface with particular header, door and wall conditions and neighboring hardware.
 - f. Mount closers on interior door and frame faces.
 - g. Adjustable to open with not more than 8.0-pounds pressure to open at exterior doors and 5.0-pounds at interior doors.
 - h. Separate adjusting valves for closing speed, latching speed and backcheck.
 - i. Extra-duty arms (EDA) at exterior doors scheduled with parallel arm units.
 - j. Exterior door closers: tested to 100 hours of ASTM B117 salt spray test, furnish data on request.
 - k. Exterior doors: seasonal adjustments not required for temperatures from 120 degrees F to -30 degrees F, furnish checking fluid data on request.
 - l. Non-flaming fluid, will not fuel door or floor covering fires.

- m. Pressure Relief Valves (PRV) not permitted.
- G. Other Hardware:
- 1. Door Stops: Provide stops to protect walls, casework or other hardware
 - a. Unless otherwise noted in Hardware Sets, provide floor type with appropriate fasteners. Where floor type cannot be used, provide wall type. If neither can be used, provide overhead type.
 - 2. Seals: Inelastic, rigid back, not subject to stretching. Self-compensating for warp, thermal bow, door settling, and out-of-plumb. Adhesive warranted for life of installation.
 - 3. Thresholds: As scheduled and per details. Comply with ICC/ANSI A117.1 Section 404.2.4 & 303. Substitute products: certify that the products equal or exceed specified material's thickness. Proposed substitutions: submit for approval.
 - a. Saddle thresholds: 0.125 inches minimum thickness.
 - b. Exteriors: Seal perimeter to exclude water and vermin. Use sealant complying with requirements in Division 7 "Thermal and Moisture Protection". Minimum 0.25 inch diameter fasteners and lead expansion shield anchors, or Red-Head #SFS-1420 (or approved equivalent) Flat Head Sleeve Anchors (SS/FHSL).
 - c. Fire-rated openings, 90-minutes or less duration: use thresholds to interrupt floor covering material under the door where that material has a critical radiant flux value less than 0.22 watts per square centimeter, per NFPA 253. Use threshold unit as scheduled. If none scheduled, request direction from Contracting Officer.
 - d. Plastic plugs with wood or sheet metal screws are not an acceptable substitute for specified fastening methods.
 - e. Fasteners: Generally, exposed screws to be Phillips or Robertson drive. Pinned TORX drive at high security areas. Flat head sleeve anchors (FHSL) may be slotted drive. Sheet metal and wood screws: full-thread. Sleeve nuts: full length to prevent door compression.
 - 4. Silencers: Interior hollow metal frames, 3 for single doors, 4 for pairs of doors. Leave no unfilled/uncovered pre-punched silencer holes. Intent: door bears against silencers, seals, make minimal contact with minimal compression- only enough to effect a seal.
- H. Finish: Except as otherwise indicated, finish of hardware shall be 626.
- I. ADA Compliance: All hardware for doors indicated on the drawings as ADA accessible shall conform to the requirements of the Americans With Disabilities Act Accessibility Guidelines (ADAAG), Sections 4.13.8, 4.13.9, 4.13.10, and 4.13.11.

2.03 KEYING

Locks shall have four (4) keys each. Locks for the same rooms shall be keyed alike. All locks shall be master keyed and Grandmaster keyed to the existing keying system. During period of construction, all locks shall be operated by a special master key.

Regular day and master keys are to be retained by the Contractor so they cannot be obtained or duplicated by unauthorized persons. All keys shall be stamped "DO NOT DUPLICATE" at the point of manufacture. The special construction master key shall become inoperative when regular keys are turned over to the Contracting Officer. Proper certification of factory assembly of all locks and cylinders as well as factory master keying shall be furnished by the Contractor prior to final acceptance of this portion of the work. Certificate shall then be given to the Contracting Officer. Provide ten (10) construction master keys, six (6) grand master keys, and six (6) master keys per set. Contractor shall coordinate keying system.

2.04 FASTENINGS

- A. Furnish necessary screws, bolts, and other fastenings for proper application of hardware. Fastenings shall be of suitable size and type of securing hardware for heavy use. Fastenings must harmonize with the hardware as to material and finish .
- B. Furnish necessary expansion shields, toggle bolts, machine or wood screws or other suitable approved anchoring devices where hardware is to be installed on concrete, masonry or other type of backing.

2.05 TEMPLATES

Templates as may be required to be furnished the Contractor within seven days after receipt of an order and approved hardware schedule.

2.06 TOOLS AND INSTRUCTIONS

All tools and maintenance or installation instruction packed with the closers and locksets shall be given to the State of Hawaii when the project is complete.

2.07 SPARE LOCKSETS

Furnish spare locksets to the Contracting Officer, in quantities and functions as indicted in the Hardware Schedule. All spare locksets shall be furnished in manufacturer's packaged boxes, clearly marked, and complete with all parts, core, screws, etc., including four (4) blank keys.

PART 3 - EXECUTION

3.01 PRE-INSTALLATION MEETING

Prior to the start of installation of the finish hardware, the Contractor, hardware installer, hardware supplier and/or manufacturer's representative, and the Contracting Officer, shall have a pre-installation meeting to review the hardware installation instructions and installation conditions.

3.02 HARDWARE SUPPLIER'S INSPECTION

Before final inspection of the work under this contract and acceptance of the project by the Contracting Officer, the supplier of hardware and other items specified in this Section shall visit the site and carefully inspect all parts for conformance to this specification, adequacy for intended use, proper functioning, appearance, finish and successful operation, assuming joint responsibility with the General Contractor.

3.03 KEYING OPERATION AND ORIENTATION

The General Contractor and/or hardware supplier shall together with the Contracting Officer and/or representative(s) from the State of Hawaii, conduct an orientation of the operation of all hardware and locks

3.04 HARDWARE SCHEDULE

Furnish the following hardware groups in the amounts indicated on the drawings or required for a complete and proper installation. Key to existing system.

Abbreviations:

MCK	McKinney Products Company
SAR	Sargent Manufacturing Co.
TRI	Trimco
PEM	Pemko
SCH	Schlage Lock Company
LCN	LCN Closers
VON	Von Duprin

- 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

For use on Door #(s):

19

QTY		DESCRIPTION	CATALOG NUMBER		FINIS H	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP		630	IVE
1	EA	PANIC HARDWARE	98-L-06		US26 DAM	VON
1	EA	RIM CYLINDER	20-057		626	SCH
1	EA	SURFACE CLOSER	4040XP RW/PA SRI		689	LCN
1	EA	FLOOR STOP	FS444		626	IVE
1	EA	GASKETING	188SBK PSA		BK	ZER
1	EA	DOOR SWEEP	39A		A	ZER
1	EA	THRESHOLD	655A-223		A	ZER

KEYED TO EXISTING SCHLAGE PRIMUS WHML GRAND MASTER KEY SYSTEM
VERIFY THRESHOLD CONDITION

Hardware Group No. 02

For use on Door #(s):

20

QTY		DESCRIPTION	CATALOG NUMBER		FINIS H	MFR
3	EA	HINGE	5BB1HW 5 X 4.5 NRP		630	IVE
1	EA	ENTRANCE/OFFICE LOCK	ND50P6D RHO		626	SCH
1	EA	SURFACE CLOSER	4040XP RW/PA SRI		689	LCN
1	EA	FLOOR STOP	FS444		626	IVE
1	EA	GASKETING	188SBK PSA		BK	ZER
1	EA	DOOR SWEEP	39A		A	ZER
1	EA	THRESHOLD	655A-223		A	ZER

KEYED TO EXISTING SCHLAGE PRIMUS WHML GRAND MASTER KEY SYSTEM
VERIFY THRESHOLD CONDITION

Hardware Group No. 03

For use on Door #(s):

02 04 05 06 07 10
12

QTY		DESCRIPTION	CATALOG NUMBER		FINIS H	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	ENTRANCE/OFFICE LOCK	ND50P6D RHO		626	SCH
1	EA	FLOOR STOP	FS13		626	IVE
KEYED TO EXISTING SCHLAGE PRIMUS WHML GRAND MASTER KEY SYSTEM						

Hardware Group No. 04

For use on Door #(s):

18

QTY		DESCRIPTION	CATALOG NUMBER		FINIS H	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP		652	IVE
1	EA	CLASSROOM LOCK	ND70P6D RHO		626	SCH
1	EA	SURFACE CLOSER	4040XP RW/PA		689	LCN
1	EA	FLOOR STOP	FS13		626	IVE
KEYED TO EXISTING SCHLAGE PRIMUS WHML GRAND MASTER KEY SYSTEM						

Hardware Group No. 05

For use on Door #(s):

09 11 14 15 17

QTY		DESCRIPTION	CATALOG NUMBER		FINIS H	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	PASSAGE SET	ND10S RHO		626	SCH
1	EA	FLOOR STOP	FS13		626	IVE

Hardware Group No. 06

For use on Door #(s):

21

QTY		DESCRIPTION	CATALOG NUMBER		FINIS H	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	☰	652	IVE
1	EA	PASSAGE SET	ND10S RHO	☰	626	SCH
1	EA	SURFACE CLOSER	4040XP SCUSH	☰	689	LCN

Hardware Group No. 07

For use on Door #(s):

16

QTY		DESCRIPTION	CATALOG NUMBER		FINIS H	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	☰	652	IVE
1	EA	CORRIDOR LOCK	ND73P6D RHO	☰	626	SCH
1	EA	FLOOR STOP	FS13	☰	626	IVE

KEYED TO EXISTING SCHLAGE PRIMUS WHML GRAND MASTER KEY SYSTEM

Hardware Group No. 08

For use on Door #(s):

13

22

QTY		DESCRIPTION	CATALOG NUMBER		FINIS H	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	☰	652	IVE
1	EA	DOOR PULL, 1" ROUND	8103EZHD 10" I	☰	630- 316	IVE
1	EA	PUSH PLATE	8200 4" X 16"	☰	613	IVE
1	EA	SURFACE CLOSER	4040XP RW/PA	☰	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	☰	630	IVE
1	EA	FLOOR STOP	FS13	☰	626	IVE

Hardware Group No. 09

For use on Door #(s):

01B

QTY		DESCRIPTION	CATALOG NUMBER		FINIS H	MFR
6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	📄	630	IVE
2	EA	PANIC HARDWARE	9849-L-06	📄	US26 DAM	VON
2	EA	RIM CYLINDER	20-057	📄	626	SCH
2	EA	SURFACE CLOSER	4040XP RW/PA SRI	📄	689	LCN
2	EA	FLOOR STOP	FS444	📄	626	IVE
1	EA	GASKETING	188SBK PSA	📄	BK	ZER
2	EA	DOOR SWEEP	39A	📄	A	ZER
1	EA	THRESHOLD	655A-223	📄	A	ZER

KEYED TO EXISTING SCHLAGE PRIMUS WHML GRAND MASTER KEY SYSTEM
VERIFY THRESHOLD CONDITION

Hardware Group No. 10

For use on Door #(s):

03

QTY		DESCRIPTION	CATALOG NUMBER		FINIS H	MFR
6	EA	HINGE	5BB1 4.5 X 4.5	📄	652	IVE
1	EA	CONST LATCHING BOLT	FB61P	📄	630	IVE
1	EA	DUST PROOF STRIKE	DP2	📄	626	IVE
1	EA	ENTRANCE/OFFICE LOCK	ND50P6D RHO	📄	626	SCH
1	EA	SURFACE CLOSER	4040XP CUSH	📄	689	LCN
1	EA	FLOOR STOP	FS13	📄	626	IVE

CLOSER ON ACTIVE LEAF.

KEYED TO EXISTING SCHLAGE PRIMUS WHML GRAND MASTER KEY SYSTEM

Hardware Group No. 11

For use on Door #(s):

08

QTY		DESCRIPTION	CATALOG NUMBER		FINIS H	MFR
2	EA	CONT. HINGE	112HD	☐	628	IVE
1	EA	MORTISE LOCK	MS1850S X 4015 X 4085		628	ADA
2	EA	MORTISE CYLINDER	20-062 (VERIFY)	☐	626	SCH
2	EA	90 DEG OFFSET PULL	PR 8190HD 10" N	☐	630	IVE
2	EA	SURFACE CLOSER	4040XP RW/PA	☐	689	LCN
2	EA	PA MOUNTING PLATE	4040XP-18PA (AS REQ'D)	☐	689	LCN
2	EA	FLOOR STOP	FS13	☐	626	IVE

KEYED TO EXISTING SCHLAGE PRIMUS WHML GRAND MASTER KEY SYSTEM

Hardware Group No. 12

For use on Door #(s):

01

QTY		DESCRIPTION	CATALOG NUMBER		FINIS H	MFR
1	EA	SLIDING AUTOMATIC ENTRANCE,SEE SECTION 084229				SAT

Hardware Group No. 13

For use on Door #(s):

01A

QTY		DESCRIPTION	CATALOG NUMBER		FINIS H	MFR
	EA	NOTE	HARDWARE BY DOOR MANUFACTURER			

PART 4 - MEASUREMENT AND PAYMENT

4.01 BASIS OF MEASUREMENT AND PAYMENT

- A. Work under this section will not be measured nor paid for separately, but shall be considered incidental to and included in the price bid for the various items of work in this project.

END OF SECTION

SECTION 10511 – METAL LOCKERS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Wardrobe lockers.
- B. Locker benches.

1.02 RELATED SECTIONS

- A. Section 03300 - Cast-in-Place Concrete.
- B. Section 06100 - Rough Carpentry.

1.03 REFERENCES

- A. 2010 ADA Standards for Accessible Design.

1.04 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings:
 - 1. Dimensioned drawings including plans, elevations, and sections to show locker locations and interfaces with adjacent substrates.
 - 2. Details of assembly, erection, anchorage and clearance requirements.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.05 QUALITY ASSURANCE

- A. Mock-Up: Provide a mock-up for evaluation of installation and application workmanship.
 - 1. Provide mock-up in area designated by Architect.
 - 2. Do not proceed with remaining work until workmanship and installation are approved by Architect.
 - 3. Modify mock-up as required to produce acceptable work.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.

1.07 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.08 WARRANTY

- A. Lockers shall be warranted for a period of two years against defective parts and workmanship, excluding vandalism and improper installation.
- B. Contractors Surety shall not be held liable beyond 2 years from project acceptance date.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer or Approved Equals.
 - 1. Hadrian, which is located at: 7420 Clover Avenue; Mentor, OH 44060; ASD Tel: 440-942-9118; Fax: 440-942-9618; Fax: 800-536-1469; Email: request info (mail@hadrian-inc.com); Web: <http://www.hadrian-inc.com>.
 - 2. ASI Storage Solutions
900 Clary Connector
Eastanollee, GA 30538
- B. Requests for substitutions will be considered in accordance with provisions of Section 01300 Submittals.
- C. Provide all metal lockers from a single manufacturer.

2.02 LOCKERS

- A. Standard Lockers:
 - 1. Product: Emperor Locker as manufactured by Hadrian Manufacturing, Inc.
 - 2. Height: 72 inches (1830 mm).
 - 3. Depth: 12 inches (305 mm).
 - 4. Width: 12 inches (305 mm).
 - 5. Tier: Triple.
 - 6. Doors: Doors shall be of a double-pan design consisting of an outer panel welded to an inner panel to form a rigid box construction that resists prying. The outer panel shall be double flanged on all four edges and the inner panel single flanged on all four edges, providing rigidity when both panels are

welded together. A structural and sound deadening 1 inch (25 mm) cell honeycomb core shall be bonded to the inner surfaces. The door shall be flush with the frame and include a recessed handle and recessed number plate. Doors are hinged on the right and swing from left to right.

- a. Inner Panel: 24 gauge (0.607 mm).
- b. Outer Panel: 20 gauge (0.912 mm).
7. Frame: Both vertical members shall be not less than 16 gauge (1.519 mm) and formed into a rigid channel 5/8 inch (16 mm) wide exposed frame and 2-7/16 inches (62 mm) side depth. The frame shall be completed by 3 inches (76 mm) high top and bottom cross members of not less than 18 gauge (1.214 mm) formed as an open box channel and welded to the verticals. The bottom frames' full-width lintel extends back and down to form a rigid box to support the bottom shelf. Both vertical frame members shall be formed to offer a full-length 7/16 inch (11 mm) wide continuous door strike. The latch vertical member shall include a welded 11 gauge (3.030 mm) padlock hasp together with a 7/16 inch (11 mm) O.D. air-cushioned rubber bumper. No fasteners shall be exposed on fronts of locker doors or frames.
8. Body: Sides and backs shall be no less than 24 gauge (0.617 mm) and shall not contain extra unnecessary holes unless otherwise specifically used for the assembly of the lockers and accessories on the project. Edges shall be formed to provide a strong and rigid assembly when bolted or riveted together. Locker backs are flanged at right angles providing a triple thickness of metal at the back corner connections. Shelves, tops and bottoms shall be interchangeable, not less than 22 gauge (0.759 mm) and formed into a sturdy pan with a lip formed front edge for additional strength and safety.
9. Single Point Latching/Locking Device (Built-in Type): An 11 gauge (3.030 mm) security strike welded to the frame's continuous door strike. The lock bolt shall secure itself behind the strike. Access to the secured bolt shall be denied by the full length stop on the door frame and by the top lip of the strike projecting forward and fitting into a slot in the door, preventing the door and frame from being pulled apart.
 - a. Combination lock operated.
10. Hinge: A full-length 18 gauge (1.214 mm) continuous piano hinge shall be securely welded to the frame and fastened to the door with screws or rivets. Hinge shall maximize security and improve resistance to abuse and vandalism.
11. Ventilation: Airflow is achieved through 4 sets of 5 unobstructed louvers 3/4 inch (19 mm) wide by 1/4 inch (6 mm) high in the vertical frame members. Provide 18 each 3/16 inch (5 mm) diameter perforations at outside perimeter of each top, shelf, and bottom to offer additional ventilation throughout the inside of each locker.
12. Number Plate: Each door shall have a high strength black laminated plastic number plate, 2-1/2 inches (64 mm) wide by 1-1/8 inches (29 mm) high with numbers not less than 7/16 inch (11 mm) high. Plates shall accommodate up to four digits, be nestled in a recess flush with door surface and shall be fastened

to door with two rivets. Unless otherwise specified, lockers will be numbered consecutively from 1 - up.

13. Interiors: Hooks are chrome plated steel with ball point heads and attached to shelves with two fasteners.
 - a. Single-tier locker shall be one hat shelf and three coat hooks.
 - b. Double and triple- tier lockers shall have three coat hooks per compartment.
 - c. Provide single prong coat hooks.
 - d. Provide 1 inch (25 mm) O.D. coat rods with stainless steel brackets.

2.03 BENCH

A. Locker Bench:

1. Bench seats shall be made of hardwood laminate and are 1-1/4" (32mm) thick by 9-1/2" (241mm) wide, by length (6' long). 24" (610mm) wide for ADA. Corners and edges are rounded and the seat has a clear lacquer finish. Bench pedestals shall be 1/4" (6mm) x 2-1/2" (64mm) aluminum free from surface imperfections and contaminants that would be detrimental to the acceptance of a high grade hybrid epoxy polyester powder finish. Pedestals are painted to match locker door or frame color or desired Hadrian color. Pedestals shall be stationary hardware for ADA requirements.

2.04 FABRICATION

- A. Each locker built shall have a door mounted in a frame. Individual top, bottom, side, back, shelves, with a common side separating compartments.
- B. Materials are completely asbestos free. The paint used shall be a powder coating completely free of all lead and chromate.
- C. No fasteners shall be exposed on fronts of locker doors and frames.
- D. Sliding rods, springs, turn handles or moving latches are not permitted for latching/locking devices.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 INSTALLATION

- A. Install metal lockers and accessories at locations shown in accordance with manufacturer's instructions. Install lockers plumb, level, and square.
- B. Assemble lockers by riveting, to provide solid permanent fastening while allowing for faster removal by drilling where future rearrangement of lockers or replacement of damaged parts may be required. If acceptable to Architect, bolted assembly will be acceptable.
- C. Install locks in sequence after all lockers have been installed.
- D. Install number plates in sequence after all lockers have been installed.
- E. Install benches by fastening bench tops to pedestals and securely anchoring to the floor using rubber leveling glides or appropriate anchors for the floor material.

3.03 ADJUSTING AND CLEANING

- A. Adjust doors and latches to operate without binding. Verify that latches are operating satisfactorily.
- B. Touch-up with factory-supplied paint and repair or replace damaged products before Substantial Completion.

3.04 PROTECTION

- A. Protect installed products until completion of project.

PART 4 - MEASUREMENT AND PAYMENT

4.01 BASIS OF MEASUREMENT AND PAYMENT

- A. Work under this section will not be measured nor paid for separately, but shall be considered incidental to and included in the price bid for the various items of work in this project.

END OF SECTION

SECTION 12590 - SYSTEMS FURNITURE

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Modular Systems furniture.

1.02 RELATED SECTIONS

- A. Section 16100 – Electrical Work

1.03 SUBMITTALS

- A. Submit under provisions of Section 01300 - Submittals.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
- D. Verification Samples: For each finish product specified, two samples, representing actual product and finish.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.
- B. Installer Qualifications: Minimum 2 year experience installing similar products.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship is approved by Architect.
 - 3. Refinish mock-up area as required to produce acceptable work.

1.05 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to starting work of this section.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
- B. Handling: Handle materials to avoid damage.

1.07 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.08 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturers Or Approved Equal.:
 - 1. Haworth
The Systemscenter
1738 Silva St
Honolulu, HI 96819
 - 2. Herman Miller
Office Pavillion
50 S Beretania St C208B
Honolulu, HI 96813
- B. Substitutions: Permitted in accordance with Section 01300 Submittals.

2.02 MATERIALS

- A. Systems Furniture:
 - 1. Components:
 - a. Desks.
 - b. Tables.
 - c. Shelving.
 - d. Storage.
 - e. Movable units.
 - f. Tack surfaces.
 - g. Raceways.

- h. Power and data outlets.
- B. **Miscellaneous Equipment:**
 - 1. **Floor Mats**
 - a. **Provide Floor Mats by E.S. Robbins, Style: Trend Setter, #128012, Color: Black, Size: 36 x 48 inches, for low pile carpet or Approved equal. Provide one Mat per workstation (32 Units total).**

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions and in proper relationship with adjacent construction. Test for proper operation and adjust until satisfactory results are obtained.

3.04 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

PART 4 - MEASUREMENT AND PAYMENT

4.01 BASIS OF MEASUREMENT AND PAYMENT

- A. Work under this section will not be measured nor paid for separately, but shall be considered incidental to and included in the price bid for the various items of work in this project.

END OF SECTION

**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS DIVISION**

PRE-BID MEETING MINUTES

DATE: January 30, 2023.

TIME: 1:30 p.m.

LOCATION: Daniel K. Inouye International Airport
Terminal 2 Parking Structure ground level Diamond Head/Makai end.

PROJECT: New Pass & ID Office
Daniel K. Inouye International Airport
State Project No. CO1322-63
HlePRO Solicitation # B23001474

PRESENT: See attached list

SUBJECT: Pre-Bid Meeting

MEETING SUMMARY:

I. GENERAL DISCUSSION

1. Attendees reminded fill out attendance sheet completely (name, email address, phone number, etc.) for contacting with us.
2. Participants involved with the project were introduced (State and Design Consultant).
3. All questions must be submitted in writing to the State Project Manager by February 10, 2023, by 4:00 pm. Send all questions in email: wendy.cheuk@hawaii.gov, Subject: New Pass & ID Office, Project No. CO1322-63.

This meeting is to clarify general questions only. If there is a conflict between what was stated in this meeting and the bid documents, the bid documents shall govern. Any significant changes will be issued through an addendum.

4. Important dates brought to attendees' attention:
 - **Bid Opening is February 24, 2023, at 2:00 p.m.**
 - Last day for Substitution Requests is fourteen (14) calendar days prior to bid opening or February 10, 2023. Submit to State DOT Airports Division Office, Engineering Branch, Attention Wendy Cheuk, 400 Rodgers Blvd., Suite 700, Honolulu, Hawaii.

II. PROJECT DESCRIPTION

1. Design consultant, Mr. Justin Matsukawa of Yamasato Higa Architecture & Planning, Inc. to provide a brief description of the project scope of work.
2. Project duration is 180 calendar days from NTP. Liquidated damages in the amount of \$150 per calendar day will be assessed if work is not completed within the contract time.
3. This is a state project utilizing State funds. No DBE or federal regulation required.
4. Unless there is a problem with the award process, the State intends to issue the Notice to Proceed date 90 calendar days after award date.
5. Demolition work shall be restricted between the hours of 10:00 pm to 6:30 am.
6. Security plan shall be submitted within 14 calendars days after award of contract as specified in Paragraph 1.3 of Section 01565.
7. Most of the work is NOT in a secured area, except electrical and data work. Other security requirements are stated in Section 01565, Security Measures.
8. Subject to approval from the Airport Manager, access to the airport will probably be limited through Access Checkpoint 'A'. All vehicles entering the AOA may be subject to search.
9. Requests for AOA badges, AOA stickers, ramp licenses, etc. shall be submitted within 14 calendar days after award of contract. In addition to the requirements stated in the Contract Bid Documents, all Contractors shall comply with the requirements and procedures of the Contractor's Training Guide. Attached for your information.
10. Pending the availability of space on airport property, the State will issue a permit to the Contractor for the use of the space, with fee, to be used specifically for a field office and/or storage of materials and equipment. See detail in Paragraph 1.04 of Section 01000. Since space on airport property is extremely limited, the State does not guarantee that the space provided to the Contractor will be in close proximity to the project site. The State will make every effort to provide the Contractor with space on airport property, however, should the State determine that no space is available for such use(s), the responsibility shall then be on the Contractor to find space outside of airport property. Staging areas shall be secured at all times.
11. Vehicle Parking: no free parking.
Upon approval by DOTA, monthly passes may be purchased at a discounted rate of \$175/month, valid until the expiration of the Contract. All costs associated with obtaining parking shall be incidental to the Contract. No reimbursement. See Paragraph 1.03 of Section 01000 for detail application.

III. QUESTIONS

Questions from Pre-Bid Meeting

Meeting Minutes

Page 3

January 30, 2023

1. Question: Is this project require Building permit?
Answer: No building permit required.
2. Question: Is this a RUSH project?
Answer: Yes, State like to move in as soon as possible.
3. Question: Can interested contractor visit job site during bidding?
Answer: Yes, please contact Wendy Cheuk, State Project Manager ahead of time.

If there are any omissions or corrections to be made to the minutes of the meeting, please respond in writing by January 31, 2023.

Meeting adjourned at: 2:05 p.m.

Wendy Cheuk

Wendy Cheuk
Project Manager
State DOT, Airports Division

1/30/23

Date

c: All attendees (See attached sign-in sheet)

New Pass & ID Office
Daniel K. Inouye International Airport
State Project No. CO1322-63

January 30, 2023		PRE-BID MEETING	
Name	Office	Telephone	email address
Wendy Cheuk <i>we</i>	AIR-EC	808-838-8822	wendy.cheuk@hawaii.gov
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H. RESPONSE TO REQUEST FOR INFORMATION (RFI)

1. Question: E-201 and E 202, all outlets and wiring show on existing CMU wall in office areas are light grey color as compared to darker one in badging area, please confirm if there are new or existing?

Response: All outlets and wiring in the office areas are new.

2. Question: E-210 and E202, all outlets and conduit shown outside walls seem to conceal inside wall, please confirmed the intent to chip and patch existing wall? Or can we run expose EMT conduit?

Response: Confirmed, contractor should chip and patch to enter the building and not route exposed conduit. Wall to be finished to match adjacent surface as noted scheduled.

3. Question: Electrical metallic Tubing- EMT is only allowed to install inside dry area, but it also required to use raintight fitting, to be more cost effective, please advise if regular indoor compression type is acceptable.

Response: Regular indoor compression type is acceptable.

4. Question: Could you please advise on Lighting Fixture Types on Sheet E-204.

Response: Please provide new lighting at Existing Janitors Closet and Restroom Entry area. Existing Utility room lighting shall remain. See new lighting fixture types on revised schedule.

5. Question: Confirm details shown Plan page A011 details 3 & 4 are they applicable to this project?

Response: Details 3 and 4 shown on Sheet A011 do not apply to this project.

6. Question: Please confirm there is no additional ceiling above that contains hazardous materials and if so, provide elevation drawings.

Response: No hazardous materials exist in this project.

7. Question: Please verify that the devices noted in the Furniture Walls are to be field installed and not factory installed. Examples on sheets TC602 and TC603.

Response: Contractor to coordinate installation for furniture mounted outlets with systems furniture provider. All telecommunications faceplates/connectors and cables are installed by the Telecommunications sub-contractor in pathways (furred panels/wireways) within the systems furniture.

8. Question: Reference Sheet A002.1 at Main Conference Room, there's a note that says "(N) Furniture see Furniture Plan, Typ", the Furniture Plan is missing in the Plan set, please provide the missing Furniture Plan.

Response: See attached proposed furniture plan, dated 9/15/2022, prepared by SYSTEMCENTER, pages 1 thru 11 with comments.

- a. Sizes of workstations and desks are noted on the furniture plan.
- b. Conference Tables shall be powered and sized as noted on the attached.
- c. Tack surfaces at Offices shall be a minimum of 24" High by 72" Long & either directly wall mounted or track mounted.
- d. Raceways shall be sized to accommodate (6) data ports per workstation. All workstations shall be fully energized. Please coordinate power/data connections with the electrical/cabling contractors.

9. Question: Submittals and materials and equipment procurements requires several months, we request that the performance period of 180 calendar days be increased.

Response: Due to the short schedule and for bid purposes the Performance Period shall remain as 180 calendar days. Any adjustments to contract requirements and duration, etc. shall be determined after contract award.

10. Question: Is the Security Contractor going to be handled directly by the State? the GC? the Owner? Or the Electrical Sub?

Response: The General Contractor, Electrical Subcontractor and other subcontractors as required shall be responsible for providing all materials, labor and programming of electronic security devices and infrastructure up to the existing system in ACC Room. The costs to perform such work, including coordination, shall be included in the General Contractor's Lump Sum Bid Price.

Final connections to the existing security systems within the ACC Room and programming of the head end servers shall be performed by the State's Video Monitoring and Access Control System (VMACS) Maintenance Contractor (currently Blackhawk Security). Payment for such work by the VMACS Maintenance Contractor shall be paid directly by the General Contractor under the applicable allowance item.

11. Question: Please provide size for the ceiling mounted junction boxes show on sheet TC100 and detailed on sheet TC503.

Response: Telecom boxes for 2-4" C COMM shall be sized at 36" SQ x 12" D and ESS boxes for 1-2" C shall be sized at 18" SQ. x 12" D. Note that box locations and route indicated on plans are approximate in nature and will need to be field verified by the Contractor prior to ordering equipment/installation.

12. Question: Will the ceiling mounted boxes need to be lockable?

Response: Ceiling mounted junction boxes will need to include a pad lockable hasp in the event DOT-A needs to secure boxes in the future. JB's should also include a hinged cover to prevent cover from falling when box is opened.

13. Question: Please verify that there is no new work on sheet E-401 (One Line Diagram)

Response: Correct, no work new work is required.

14. Question: Sheet E-501 note #4 calls for 1" minimum conduit size for the lighting control wiring. This seems a bit excessive can we propose 3/4" instead?

Response: 3/4" conduit may use for the lighting control, provided the NEC conduit fill requirements are met.

15. Question: Please provide a specification for the Power Poles that will feed the Furniture Walls.

Response: See attached drawing Sheet E-601, Delta 1, dated 2/13/2023.

16. Question: Section 05500 Metal Fabrications calls for Metal Stair Treads under Action Submittals. Do not see anything else in the attached Specs regarding these Treads. Are these required for this project?

Response: Confirming Metal Stair Tread is not required for this project.

17. Question: Sheet A008.3 indicates an aluminum ladder/stair. Section 05500 Metal Fabrications in the specs do not include a specified ladder/stair. Please provide missing specs.

Response: See revised specification in Addendum No. 2 to include aluminum vertical ladder.

18. Question: Please confirm that the required delivery date is indeed 6/28/2024 as noted on the General Information Page?

Response: For bid purposes delivery date shall be 11/17/2023.

19. Question: The contract date noted on the General Information page states: 6/26/2023. Does this mean that the bid is intended to be awarded at this time? Or intended to imply that the delivery and installation shall take place by this date?

Response: Correction the contract date is an execution of contract, estimate to be 5/17/2023.

20. Question: Besides the furniture symbols on the floor plan, we didn't find details, features, finishes, sizes mentioned. Is there a list of products that the bid specs were based on and the bidders are required to match as closely as possible? Asking for this clarification for the purpose of proposing products based on aesthetic, functionality and style, not only lowest cost.

Response: Please refer to the Furniture plan included in this addendum.

21. Question: Will the lowest price be the only deciding factor in awarding the furniture proposal?

Response: Furniture proposal alone will not be evaluated. General contractor bid price shall meet all stated requirement. IF the lowest Total Amount for Comparison of Bids is less than, or approximately equal to the funds available for this project, an award will be made to the lowest responsible bidder.

22. Question: Please clarify if the Break Room, Office 1-5, and Supply Rm are to have any furniture?

Response: Please refer to the Furniture plan included in this addendum.

23. Question: Does the Main Conference Rm table consist of smaller, movable tables? If so, do these need flip tops, casters, modesty panels? And does each table need a grommet hole, or even a power module? If power module is required, will you have a floor outlet to power the table and what ports/inputs are required? Are wire management accessories required?

Response: Please refer to the Furniture plan included in this addendum. Tables shall include grommet hole but power module is not required.

24. Question: What is the desired table size for the Small Conf Rm? Is the table required to have any power module? Is a rectangular shape ok or shape as drawn on plan required?

Response: Please refer to the Furniture plan included in this addendum. Power module is required Rectangular shape is acceptable.

25. Question: what type of chairs are desired for the Lobby? Tandem style where each seat is connected? Beam seating where all seats are attached to one beam? Should they have arms or be armless, or a combination? Should the seats and backs be plastic, fabric or faux leather?

Response: All guest seating to be separate with ability to nest. Seats do not require arms. All guest chairs to be plastic.

26. Question: What type of chairs are desired for the Small Conf Rm, and for the Main Conf Rm? The symbols suggest different styles to be used in these two rooms.

Response: Conference Room chairs should have casters, can be the same type or similar with options for color/finish selection. Seats backs shall be mesh with arms.

27. Question: Are any of the Badging workstations to be ADA compliant?

Response: Yes, two (2) of them. See Furniture plan in this addendum.

28. Question: Some of the dividing panels on the floor plan in the Badging area would be too long to be built from furniture systems panels due to instability. May we propose a slightly different panel configuration, or recommend some walls to be built-walls instead of panels?

Response: The furniture layout showed the design concept for the project. Contractor should provide all necessary panels and support as required.

29. Question: Please clarify the workstation requirements: panel heights, seating, accessories required, monitor arms, panel materials, storage requirements. Thank you.

Response: Please refer to the Furniture plan included in this addendum.

30. Question: Will furniture in all areas be installed at the same time, or will this be a phased installation?

Response: All furniture is expected to be furnished at the completion of project. Furniture installation and phasing is subject to General Contractor schedule plan.

31. Question: Are Davis Bacon wages required for this project?

Response: Please refer to specification Requirements of Chapter 104, HRS Wages and Hours of Employees on Public Works Law (dated Rev. 04/21)

32. Question: Are there any stairs leading from the loading zone to the project space?

Response: Yes, there are stairs and ramp.

33. Question: Will regular business hours installation be OK, or after-hours installation required?

Response: Regular business hours of work are acceptable.

34. Question: Will there be a dumpster on site for furniture vendor to use? Or we should include this charge in the proposal?

Response: Please refer this question to the General Contractor.