#### Addendum No. 1 December 6, 2021

Project:	Harrisburg High School - 9 <sup>th</sup> Grade Academy Sioux Falls, South Dakota Architecture Incorporated Project #2904					
Architect:	Architecture Incorporated					
Letting:	Thursday, December 16 <sup>th</sup> , 2021					

Location: Community Center Conference Room at the Harrisburg School District Administration Offices, 200 Willow Street, Harrisburg, South Dakota 57032. (Enter from southeast community center entrance).

Scope of this Addendum:

2:00 p.m.

To all bidders and all others to whom drawings and specifications have been issued by Architecture Incorporated, this Addendum forms a part of the Contract Documents. Acknowledge receipt of this addendum by listing its number and date in the bidder's Form of Proposal. Failure to do so may subject bidder to disqualification. This addendum modifies the drawings and specifications as follows:

#### **GENERAL ITEMS:**

#### 1) GENERAL CLARIFICATION

- a) As indicated per plan, the burnished block walls in the corridors do not receive any type of base at the bottom of the wall. As such, the Contractor shall ensure that all masonry work is completed in a clean and orderly fashion all the way down to the floor NO EXCEPTIONS.
  - i) The Contractor shall also be responsible for adequately protecting all burnished CMU wall surfaces throughout the duration of the Project, as specified, including if/when concrete floor slab placements occur after burnished CMU walls are in place.

## 2) <u>SECTION 012300 - ALTERNATES</u>

- a) Page 2, Add Alternate No.2, item 1.c: Change goal posts to be provided and installed as part of the Base Bid.
  - i) Goal posts shall <u>not</u> be a part of add Alternate No. 2.

#### 3) <u>SECTION 074213 – FORMED METAL WALL PANELS</u>

- a) Vertical transitions (i.e. control joints and end-to-end panel joints) at horizontal metal wall panels labeled *Prefinished Metal Wall Panel #1* shall be based on Firestone Metal Products' CFP-16TP Vertical Transition Detail H10.1 Overlap Seam Joint.
  - i) Disregard all references to caulked control joints at horizontal concealed fastener metal wall panels (i.e. detail 8 / 5.10); this detail is <u>not</u> applicable to horizontal concealed fastener metal wall panels.

ii) Change article 2.2.C.1.l. in Section 074213 to read as follows:

#### *l.* Control Joints: Based on [CFP-16TP Vertical Transition Detail H10.1 – Overlap Seam Joint].

- b) Vertical transitions (i.e. control joints and end-to-end panel joints) at horizontal metal wall panels labeled *Prefinished Metal Wall Panel #2* shall be based on Firestone Metal Products' CFP-16C Vertical Transition Detail H10.1 – Overlap Seam Joint.
  - i) Disregard all references to caulked control joints at horizontal concealed fastener metal wall panels (i.e. detail 8 / 5.10); this detail is <u>not</u> applicable to horizontal concealed fastener metal wall panels.
  - ii) Change article 2.2.C.2.l. in Section 074213 to read as follows:
- *l.* Control Joints: Based on [CFP-16TP Vertical Transition Detail H10.1 Overlap Seam Joint].

#### 4) SECTION 084113 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

- a) CLARIFICATION: Aluminum-framed storefronts may be fabricated utilizing either screw-spline or shear-block joinery.
- b) Change article 2.8.E. in Section 084113 to read as follows:
- E. Storefront Framing: Fabricate components for assembly using [shear-block system] [or] [screw-spline system].

#### 5) <u>SECTION 084413 – GLAZED ALUMINUM CURTAIN WALLS</u>

- a) Change article 1.7.B.2. in Section 084413 to read as follows:
- 2. Warranty Period: [Two] years from date of Substantial Completion.
- b) Add articles 1.2.B.4. and 1.2.B.4.a. as follows:
- 4. Section 107000 "Exterior Sun Control Devices" for aluminum sunshades installed integrally with glazed aluminum curtain wall assemblies.
  - a. Aluminum sunshades installed at/adjacent aluminum [curtain wall] locations, as specified per Section 107000, shall be furnished and installed by Section 084413.

#### 6) <u>SECTION 085113 – ALUMINUM WINDOWS</u>

a) By receipt of this addendum, all bidders shall acknowledge specification Section 085133 – *Aluminum Windows* (6 pages total) which shall become a part of the Project documents; reference Section 085113 attached to the end of Addendum #1.

#### 7) <u>SECTION 088400 – DECORATIVE FILM FOR GLASS</u>

- a) CLARIFICTAION: The Contractor shall furnish and install decorative film on the glass units in borrowed lite Type 7 located at the south end of Corridor D200A.
  - i) Reference interior elevation C / 4.54 for additional information.

#### 8) <u>SECTION 095113 – ACOUSTICAL PANEL CEILINGS</u>

a) Omit ACT-3; not required in project.

#### 9) <u>SECTION 107000 – EXTERIOR SUN CONTROL DEVICES</u>

a) By receipt of this addendum, all bidders shall acknowledge specification Section 107000 – *Exterior Sun Control Devices* (8 pages total) which shall become a part of the Project documents; reference Section 107000 attached to the end of Addendum #1.

#### 10) <u>SECTION 114000 – FOOD SERVICE EQUIPMENT – ITEMIZED SPECIFICATIONS</u>

a) Replace originally scheduled Food Service Equipment Item 56 with the following:

## ITEM 56 - STAINLESS STEEL EXHAUST DUCT RISER (2 REQ'D)

18ga Stainless Steel vapor proof welded exhaust duct riser. Exhaust Duct Riser to extend 6" above finished ceiling. Include stainless steel trim flange at ceiling.

HVAC to supply connecting ductwork, run to roof exhaust fan by HVAC

- b) Modify Food Service Equipment Item 57 as indicated below:
  - i) Delete Line Item in specification *Vapor Proof LED Lights: 4 each required in cooler and 5 each in freezer*.
  - ii) Add Line Item to specification Vapor Proof LED Lights: 4 each required in cooler and 9 each in freezer.
  - iii) All else in the specification for Food Service Equipment Item 57 shall remain the same.

#### 11) <u>SECTION 116600 – ATHLETIC EQUIPMENT</u>

- a) By receipt of this addendum, all bidders shall acknowledge *REVISED* specification Section 116600 *Athletic Equipment* (2 pages total) which shall replace Section 116600 which was originally issued with the original Project documents; reference *REVISED* Section 116600 attached to the end of Addendum #1.
- b) CLARIFICATION: The football goal posts specified in *REVISED* specification Section 116600 - *Athletic Equipment* shall be furnished and installed under the Contractor's Base Bid.

i) The football goal posts specified in *REVISED* specification Section 116600 – *Athletic Equipment* shall <u>not</u> be included in Alternate No. 2.

## 12) <u>SHEET 1.20 – CODE PLAN – FIRST FLOOR</u>

a) Change referenced Building Code from 2018 IBC to 2021 International Building Code. Change any building code references in drawings to 2021 IBC.

#### 13) <u>SHEET 2.35 – SITE DETAILS</u>

- a) Furnish and install sign posts based on *Telespar Traffic Products* Square-Fit (2" x 2") perforated, telescoping galvanized-steel tubing sign post system (w/ separate base) in lieu of the 1" x 2" (painted) steel tubing indicated on the drawings per detail 1 / 2.35.
  - i) Sign posts installed in landscape areas shall not require concrete footings.

## 14) SHEET 2.42 - TRACK SITE PLAN (ADD ALTERNATE #2)

a) Goal posts, Keynote #3: 2 goal posts shall be provided and installed in base bid. Omit goal posts as part of add alternate #2.

#### 15) <u>SHEET 4.20-1B – FIRST FLOOR FINISH PLAN – AREA B</u>

a) Cooler B112 and Freezer B113: Omit reference to QTB; not required.

## 16) <u>SHEET 4.20-1C – FIRST FLOOR FINISH PLAN – AREA C</u>

- a) Vestibule C102 and C103: Provide ACT-1 in lieu of ACT-3; omit all references to ACT-3.
- b) Theatre Storage C104: Omit reference to PNT-1; walls to remain unfinished.
- c) General Lab (Wood) C113: Provide PNT-1 at all walls.
- d) Tech./Hub C121 and Office C121B: Provide CPT-1 under Alternate 5A and 5B.

## 17) <u>SHEET 4.20-1D – FIRST FLOOR FINISH PLAN – AREA D</u>

- a) Reception D100: Omit reference to RB-1; provide CPTB at reception desk.
- b) Omit reference to spaces Storage D137B and Storage D137C; these spaces do not exist.
- c) Stair D140: Provide LVT-1 at landings in lieu of RBR-1. RST-1 to remain at stair treads.
- d) Stair D146: Provide LVT-1 at landings in lieu of RBR-1. RST-1 to remain at stair treads.

#### 18) SHEET 4.20-1E – FIRST FLOOR FINISH PLAN – AREA E

a) Stair E121: Provide LVT-1 at landings in lieu of RBR-1. RST-1 to remain at stair treads.

#### 19) SHEET 4.20-2D – SECOND FLOOR FINISH PLAN – AREA D

- a) Stair D200: Provide LVT-1 at landings in lieu of RBR-1. RST-1 to remain at stair treads.
- b) Storage D205A: Omit reference to PNT-1; walls to remain un-painted.
- c) Stair D207A: Provide LVT-1 at landings in lieu of RBR-1. RST-1 to remain at stair treads.

#### 20) <u>SHEET 4.20-2E – SECOND FLOOR FINISH PLAN – AREA E</u>

a) Stair E219: Provide CPT-1 at landings in lieu of RBR-1. RST-1 to remain at stair treads.

#### 21) SHEET 4.30 – DOOR SCHEDULE

- a) Modify the Door Schedule on Sheet 4.30 as indicated below:
  - i) Door B107: Change frame type to type 1.
  - ii) Door C101-2: Change frame type to type 1.
  - iii) Door C104-1: Change frame type to type 1.
  - iv) Door C108: Change door type to type BB.
  - v) Door C109-1: Change frame type to type 1.
  - vi) Door D100: Change sidelite glass and door glass type to laminated glass.
  - vii) Door D103: Change head detail reference to 26/4.32 and jamb detail reference to 27/4.32.
  - viii) Door D104A: Change head detail reference to 7/4.32 and jamb detail reference to 8/4.32.
  - ix) Door D118: Change head detail reference to 26/4.32 and jamb detail reference to 27/4.32.
  - x) Door D137: Change head detail reference to 4/4.33.
  - xi) Door D137-1: Change head detail reference to 4/4.33.

#### 22) SHEET 4.31 – DOOR SCHEDULE

- a) Modify the Door Schedule on Sheet 4.31 as indicated below:
  - i) Door E109 : Change frame type to type 7.
  - ii) Door E110: Change frame type to type 7.

- iii) Door E111: Change frame type to type 7.
- iv) Door E112: Change frame type to type 7.
- v) Detail 7/4.31: Change door frame head to 2" head.
- vi) Detail 13/4.31: Return gypsum board to the aluminum frame to cover wood blocking.
- vii) Detail 14/4.31: Return gypsum board to the aluminum frame to cover wood blocking.
- viii) Detail 18/4.31: Omit this detail; this detail is not used.
- ix) Detail 19/4.31: Omit this detail; this detail is not used.
- x) Detail 20/4.31: Omit this detail; this detail is not used.

#### 23) SHEET 4.33 – DOOR DETAILS

- a) See attached supplemental drawing SD3 for revised borrowed lite head, jamb and sill details 5, 6, 7/4.33 provide 2x treated solid wood blocking at perimeter of window opening, typical.
- b) Detail 1 /4.33: Change gypsum board ceiling height to 8'-8".
- c) Detail 2 /4.33: Change HM frame to 4" head.
- d) Detail 5 /4.33: Change HM frame to 4" head.
- e) Detail 9 /4.33: Change bottom of lintel to 8'-8". Provide CMU soaps each side of beam.

#### 24) SHEET 4.53 – INTERIOR ELEVATIONS – AREA B

- a) Elevation A/4.53: Change note *EXTERIOR WALL PANEL* to read *HPL-1 (PLANK)*.
- b) See attached supplemental drawing SD4 for partial floor plan of Commons B100 and School Store B101, and elevation E/4.53 (Commons, east end wall of school store – HPL-1 (PLANK) on commons side of wall).

#### 25) SHEET 4.54 – INTERIOR ELEVATIONS – AREA B

a) Elevation D/4.54: Change note *EXTERIOR WALL PANEL* to read *HPL-1 (PLANK)*.

#### 26) <u>SHEET 4.57 – INTERIOR ELEVATIONS – AREA D</u>

- a) Elevation C/4.57: D147 Media Center-West:
  - i) Install sloped (painted) gypsum board assembly over doors D137 and D137-1 as shown per door head detail 4 / 4.33.

#### 27) SHEET 5.10 - EXTERIOR ELEVATIONS - AREA A

- a) Disregard all references (both implicit and explicit) to 5" wide (vertical) transition strips within horizontal concealed fastener metal wall panel assemblies (*Prefinished Metal Wall Panel #1 & Prefinished Metal Wall Panel #2*).
  - i) Reference exterior building elevations A, B & C / 5.10.
  - ii) Provide overlapping joints at these locations as specified / clarified elsewhere within Addendum #1.
- b) CLARIFICATION: Detail 8 / 5.10 represents the typical horizontal and/or vertical wet-sealed joint condition that occurs within aluminum-faced composite wall panel assemblies, as specified per Section 074243.
  - i) Disregard all references to this detail occurring within horizontal concealed fastener metal wall panel assemblies, as clarified elsewhere within Addendum #1.

## 28) SHEET 5.11 – EXTERIOR ELEVATIONS - AREA B

- a) Disregard all references (both implicit and explicit) to 5" wide (vertical) transition strips within horizontal concealed fastener metal wall panel assemblies (*Prefinished Metal Wall Panel #1 & Prefinished Metal Wall Panel #2*).
  - i) Reference exterior building elevations A & D / 5.11.
  - ii) Provide overlapping joints at these locations as specified / clarified elsewhere within Addendum #1.

#### 29) SHEET 5.12 - EXTERIOR ELEVATIONS - AREA C

- a) Elevation G / 5.12: All exterior CMUs shown per this exterior building elevation shall be painted.
  - i) Field color for painted CMUs to be selected by Architect at a later date.
    - (1) Accent color shall match brick Color #2, as indicated.

#### 30) SHEET 5.13 – EXTERIOR ELEVATIONS - AREA D

- a) See attached revised sheet 5.13, with revision date of 12-6-2021 that replaces the original issued sheet, incorporating items below:
- b) Disregard all references (both implicit and explicit) to 5" wide (vertical) transition strips within horizontal concealed fastener metal wall panel assemblies (*Prefinished Metal Wall Panel #1 & Prefinished Metal Wall Panel #2*).
  - i) Reference exterior building elevations A, C & D / 5.13.
  - ii) Provide overlapping joints at these locations as specified / clarified elsewhere within Addendum #1.
- c) See revised elevation C/5.13 for addition of scupper and downspout.

#### 31) SHEET 5.14 - EXTERIOR ELEVATIONS - AREA E

- a) Elevations A, B, C, E, F, G recess one course of 4" high brick above and below the 1'-0" high soldier courses that run near the top and bottom of the windows. (Recess brick ½'. Slope mortar away from brick). Soldier course is to remain in plane with the rest of the brick. See attached supplemental drawing SD5 for detail and partial elevation showing locations at Area E.
- b) Disregard all references (both implicit and explicit) to 5" wide (vertical) transition strips within horizontal concealed fastener metal wall panel assemblies (*Prefinished Metal Wall Panel #1 & Prefinished Metal Wall Panel #2*).
  - i) Reference exterior building elevations A & G / 5.14.
  - ii) Provide overlapping joints at these locations as specified / clarified elsewhere within Addendum #1.

## 32) SHEET 5.20 – EXTERIOR FRAME ELEVATIONS

- a) See attached, revised sheet 5.20 with revision date off 12-6-2021 that replaces the original issued sheet and includes the following updates/additions:
  - i) Frame type '8/5.20' add perforated anodized aluminum vertical sun shade at 12 locations shown on revised frame elevation at Commons B100. (Furnished and installed by curtain wall supplier).
  - ii) Frame type '9/5.20' omit vertical mullions above single doors C100-1/C100-2 and C100-5 and C100-6 as shown on revised frame type.
  - iii) Frame type '10/5.20' omit vertical mullions above single doors C100-7/C100-8 and C100-11 and C100-12 as shown on revised frame type.
- b) Reference new section 13/5.20 for perforated anodized aluminum vertical sunshades at Commons B100.

#### 33) SHEET 5.21 – EXTERIOR FRAME ELEVATIONS

- a) See attached, revised sheet 5.21 with revision date of 12-6-2021 that replaces the original issued sheet and includes the following updates/additions:
  - i) Omit '*WINDOW TYPES*' and '*WINDOW TYPES SCHEDULE*' from this sheet. See sheet 5.22 for these items.
  - ii) Frame type '1/5.21' add perforated anodized aluminum vertical sun shade at 8 locations shown on revised frame elevation at Media Center D137. (Furnished and installed by curtain wall supplier).
  - iii) Reference new section 14/5.20 for perforated anodized aluminum vertical sunshades at Media Center D137.

#### 34) SHEET 5.22 - WINDOW AND STOREFRONT DETAILS

- a) Window Types Legend Add window type 'B6' (room D208).
- b) Window Types Schedule:
  - i) Type B5 change head detail to 1/5.22, Jamb detail to 2/5.22 and sill detail to 3/5.22.
  - ii) Add window type B6 1" INSL glass, head detail 26/5.22, jamb detail 27/5.22 and sill detail 28/5.22.
- c) See attached supplemental drawing SD3 for revised window head, jamb and sill details 7, 8, 9/5.22 provide 2x treated solid wood blocking at perimeter of window opening, typical.
- d) See attached supplemental drawing SD6 for new head/jamb and sill details 26, 27 & 28/5.22 for new window type B6.

#### 35) SHEET 5.32 - BUILDING SECTION - AREA B

a) E/5.32 – Section – Area B – at empty detail references on grid BG, see new details 10/5.5 and 11/5.5 issued in this addendum (per below).



#### 36) SHEET 5.35 - BUILDING SECTIONS - AREA D

a) D/5.35 – SECTION – AREA D – see new details 12, 13 & 14/5.55 SIM. at Media Center.



b) E/5.35 – SECTION AREA D - see new details 12, 13 & 14/5.55 at Media Center.



#### 37) SHEET 5.55 - SECTION DETAILS - AREA C, D

- a) See attached, revised sheet 5.55 with revision date of 12-6-2021 that replaces the original issued sheet and includes the following updates/additions:
- b) Add details 10/5.55 and 11/5.55 to this sheet. Refer to the empty detail references on building section E/5.32 along grid BG for location.

c) Add details 12/5.55 and 13/5.55 to this sheet. Refer to empty detail references on building sections D & E/5.35

#### 38) SHEET 5.60 - ROOF PLAN

- a) Reference *REVISED* Sheet 5.60 Roof Plan, revision dated 12-6-21, attached to the end of this addendum for the modifications identified below. NOTE: *REVISED* Sheet 5.60, revision dated 12-6-21, shall replace originally-issued Sheet 5.60.
  - i) Overflow scuppers, ladder details, roof curbs have been keyed in on this revised roof plan.
  - ii) See revised 'LOWER ROOF PLAN' for insulation/slope/roof drain changes at the main entrance (Vestibule C100) and the activities entrance (Vestibule B103). Note that a roof drain has been added at the lower canopy of the activities entrance roof. (See mechanical drawings for additional information).
  - iii) Note that roof drains, vents through roof that were within 4'-0" either side of the 2-hour fire wall were moved OUT of the diagonal hatched area at the Area D roof. See mechanical drawings for additional information.
  - iv) Note that overflow scuppers were added to Area A roof over Fitness/Weights A104 (east wall).
  - v) Note that scuppers were added to Area A low roof at north and east walls at Fitness/Weights A104.
  - vi) Note that scuppers were added to north and east low roofs at Media Center D137. Scupper and downspout were added to the south wall see exterior elevation C/5.13 issued in this addendum.

#### 39) SHEET 5.61 - ROOFING DETAILS

- a) See attached, revised drawing sheet 5.61 with revision date of 12-6-21, that replaces the originally issued sheet 5.61. Updates include the items below.
- b) New detail 8/5.61 showing typical counterflashing installation at steel stud/metal wall panel condition.
- c) New detail 9/5.61 showing typical counterflashing installation at masonry/metal wall panel condition.
- d) New detail 10/5.61 detail at main entrance roof, Area C. (See revised roof plan sheet 5.60 issued in this addendum for location).
- e) See revised detail 6/5.61 that adds treated wood blocking, rigid insulation, treated plywood at this typical counterflashing detail at precast wall panel.

#### 40) SHEET 5.62 - ROOFING DETAILS

a) See attached *NEW* sheet 5.62 that contains roof ladder details, overflow scupper details. These have been keyed in on the roof plan sheet 5.60 that is re-issued in this addendum.

#### 41) SHEET 7.11 - CASEWORK ELEVATIONS

a) Provide CPTB in lieu of RB-1 on details A/7.11, B/7.11, C/7.11, D/7.11, E/7.11, and F/7.11.

#### 42) SUPPLEMENTAL DRAWINGS

- a) See attached supplemental drawing SD1 for detail 1/5.32 POWER POLE DETAIL. Reference Floor Plan drawing sheets 4.10-1D (Media Center D137), 4.10-1E (Learning Center E115)and 4.10-2E (Learning Center E215) for locations. Coordinate exact location with owner prior to rough-in/installation.
- b) See attached supplemental drawing SD2 for details 10/5.54 & 11/5.4 joist bearing pocket detail at precast wall panels. (typical).

## **MECHANICAL ITEMS:**

#### 1) TABLE OF CONTENTS – MECHANICAL

a) Reference *revised* mechanical (Fire Suppression) *Table of Contents* attached to the end of this addendum which has been updated (i.e. - *revision* dated November 19,2021) to reflect to correct Contract Document date.

#### 2) <u>SECTION 220400 – PLUMBING</u>

a) Add the following to Section 220400:

## 1.26.5 MIXING VALVE:

Furnish and install a Powers LFIS200, or equal, where shown on the drawings.

The master mixing valve shall be a lead free digital water temperature control and monitoring system and shall feature a full-color touchscreen interface which is configurable on location and does not require factory pre-programming. System shall control water temperature to +/- 2 degrees F in accordance with ASSE 1017 and during periods of low/zero demand and feature a user-programmable high temperature alarm. Unit shall feature a Feed Forward or Predictive control which anticipates changes in the system demand and adjusts the valve pre-emptively to maintain mixed set point. Controller shall be password protected and feature a user-adjustable outlet temperature of 80-180 degrees F and an approach temperature of 2 degrees F.

System shall digitally monitor inlet pressure and temperature, mixed outlet temperature, mixed outlet set point, pressure and flow, as well as return temperature without the use of external module. Controller shall integrate with the BAS system through Bacnet and feature local and remote temperature alarms. System will also feature a user-set and controlled, high-

temperature sanitization mode for use as part of the users safe and properly design thermal bacteria eradication protocol. In the event of a power failure or loss of cold water, system will close the hot water supply. System shall be listed and approved to ASSE 1017, cUPC, NSF, CSA 24/UL873 and BTL and should be mounted on a heavy-duty welded strut with corrosion resistance coating and factory tested as a complete unit.

System shall be Powers, Watts, or approved equal.

b) Revise the second paragraph of article 1.12 in Section 220400 to read as follows:

## 1.12 GREASE INTERCEPTOR:

The interceptor shall be a high density polyethylene separator for flush with floor installation with 75 GPM, 31 gallons sludge and 861 pound grease capacities, 4 inch no hub inlet and outlet connections, visible double-wall outside trap seal, easily removable separator screen and heavy duty non-skid gasketed cast iron cover, H20 rated, secured with stainless steel bolts.

c) Revise the seventh paragraph of article 1.19 in Section 220400 (on page 220400-14) to read as follows:

## 1.19 WATER SOFTNER:

Provide a complete brine system consisting of a plastic tank, cover, salt platform, brine well, an automatic brine valve and all necessary fittings for operation with the water softening system. The system shall consist of a combined brine measuring and salt storage tank with salt platform. The recommended tank will be sized 42.0 in. x 50.0 in.; the system will include a total of one (1) brine tank(s).

## 3) <u>SECTION 220600 – HEATING</u>

a) Revise the third paragraph of article 1.14 in Section 220600 to read as follows:

## 1.14 <u>BOILER(S):</u>

The boiler shall be a three-pass wetback horizontal firebox type boiler with five (5) square feet of fireside heating surface per rated boiler horsepower. Furnace volume shall not be less than 92 cubic feet. It shall be mounted on a heavy steel frame with integral forced draft burner and burner controls. The complete packaged boiler is approved as a unit by Underwriters Laboratories and shall bear the UL label.

b) Revise the twelfth paragraph of article 1.14 in Section 220600 (on page 220600-10) to read as follows:

## 1.14 <u>BOILER(S):</u>

Provide a boiler stack economizer. The economizer shall be manufactured and tested in accordance with Section VIII Division I of the ASME Boiler and Pressure Vessel Code. The unit shall be code stamped to a minimum of 600 PSIG design pressure. Stack economizer shall be a HeatSponge Model Number RAINMAKER-GOLD-D3-T2, or equal.

#### 4) <u>SHEET 8.12 – SCHEDULES</u>

a) Add Note 5, as shown below, to the FAN POWERED VAV TERMINAL SCHEDULE:

#### Note 5: SIZE FAN FOR 70% OF THE MAX CFM.

b) Reference *revised* drawing Sheet 8.12, *revision* dated 12/6/21, attached to the end of this addendum for updated FP-B101 and FP-C100 information.

#### 5) <u>SHEET 8.13 – SCHEDULES</u>

a) Plumbing Fixture Schedule: Provide one (1) Bradley emergency shower test cone model S19-330ST, or equal, for ESH-1.

#### 6) <u>SHEET 8.20-0E – FIRST FLOOR PLAN – AREA B – PLUMBING</u>

- a) Reference *revised* mechanical drawing Sheet 8.20-0E, *revision* dated 12/6/21, attached to the end of this addendum for the following:
  - i) Add waste and vent piping to plumbing fixtures in rooms E104, E105 and E106.
  - ii) Add "ENLARGED FIRST FLOOR TOILET ROOM PLAN AREA E PLUMBING AND HEATING".
  - iii) Add "ENLARGED SECOND FLOOR TOILET ROOM PLAN AREA E PLUMBING AND HEATING".

## 7) <u>SHEET 8.20-1B – FIRST FLOOR PLAN – AREA B – PLUMBING & HEATING</u>

- a) Modify Location of 4" roof drain and associated piping.
  - i) Reference *revised* mechanical drawing Sheet 8.20-1B, *revision* dated 12/6/21, attached to the end of this addendum.

#### 8) <u>SHEET 8.20-1BA – ENLARGED BOILER ROOM PLAN – AREA B – PLUMBING & HEATING</u>

- a) Add the following to Note 20: *106 GALLON EXPANSION TANK*.
- b) Add the following to Note 21: *1056 GALLON EXPANSION TANK*.

## 9) <u>SHEET 8.20-1D – FIRST FLOOR PLAN – AREA D – PLUMBING & HEATING</u>

- a) Modify Location of 6" roof drain and associated piping.
  - i) Reference *revised* mechanical drawing Sheet 8.20-1D, *revision* dated 12/6/21, attached to the end of this addendum.

#### 10) SHEET 8.20-1E - FIRST FLOOR PLAN - AREA E - PLUMBING & HEATING

a) Add 2" vent piping to the floor drain serving the emergency shower in science rooms E122, E125 and E127. Connect this piping to the vent piping already serving the emergency eyewash.

#### 11) SHEET 8.20-2D – SECOND FLOOR PLAN – AREA D – PLUMBING & HEATING

- a) Reference *revised* mechanical drawing Sheet 8.20-2D, *revision* dated 12/6/21, attached to the end of this addendum for the following:
  - i) Modify location of 4" VTR and associated piping.
  - ii) Modify Location of 6" roof drain and associated piping.

# 12) <u>SHEET 8.20-2E – ENLARGED FIRST FLOOR SCIENCE ROOM PLAN – AREA E – PLUMBING & HEATING</u>

a) Add 2" vent piping to the floor drain serving the emergency shower in science rooms E220, E223
& E225. Connect this piping to the vent piping already serving the emergency eyewash.

#### **ELECTRICAL ITEMS:**

#### 1) SHEET 9.51 – ENLARGED PLAN - ELECTRICAL

- a) Equipment Schedule: Provide cord reels for food service items #14 (2 each) and #16 (2 each).
  - i) Cord reels shall be equal to Hubbell HBLI25123GF20, with mounting bracket.

#### 2) <u>SHEET 9.61 – POWER RISER DIAGRAM</u>

- a) Power Riser Diagram:
  - i) The size of the feeder from "MSB" to panel "HB2" to 200A in lieu of 400A.
  - ii) Change the note #18 at the 4000A service to "MSB" to note #9.
  - iii) Add Note #9 to the electrical notes:

#### NOTE 9: THE AVAILABLE FAULT CURRENT AT "MSB" IS 57,000A

#### 3) <u>SHEET 9.62 – ELECTRICAL SCHEDULES</u>

- a) Distribution Panel "DPA" shall have a minimum AIC rating of 28,000A.
- b) Distribution Panel "DPC" shall have a minimum AIC rating of 34,000A.
- c) Distribution Panel "DPE" shall have a minimum AIC rating of 22,000A.

- d) Panel "HA1" shall have a minimum AIC rating of 27,000A.
- e) Panel "HB1" shall have a minimum AIC rating of 50,000A.
- f) Panel "HB2" shall have a minimum AIC rating of 27,000A.
- g) Panel "HC1" shall have a minimum AIC rating of 32,000A.
- h) Panel "HE1" shall have a minimum AIC rating of 21,000A.
- i) Panel "HK" shall have a minimum AIC rating of 28,000A.
- j) Panel "HW" shall have a minimum AIC rating of 21,000A.

#### 4) <u>SHEET 9.66 – ELECTRICAL SCHEDULES</u>

a) Lighting Fixture Schedule: For clarification, the description for the type "AA1" site lighting unit shall read "*LED*" in lieu of "*FORMED OPTICS, PULSE START METAL HALIDE LAMP*".

#### **GENERAL APPROVALS:**

The following material or equipment furnished by the manufacturers listed, may be substituted as equivalent providing that each item, material, and piece of equipment conforms to the design and requirement of the specifications.

SECTION	ITEM	MANUFACTURER
096519	Resilient Tile Flooring LVT-1, 2:	Tarkett – iD Latitude Pattern: As selected by Architect Color: As selected by Architect
101419	Cast Dimensional Characters	ARK Ramos
220400	Flush Valves	American Standard
220400	Sump Pumps	Little Giant
220400	Expansion Tank	Watts
2204000	Mixing Valve	Watts, Powers
220600	Expansion Tank	American Wheatley
230800	Fabric Duct System	Fabric Air DurkeeSox
230800	Relief Hoods	Twin City Fans

#### END OF ADDENDUM No. 1

#### SECTION 085113 - ALUMINUM WINDOWS

#### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes the following types of aluminum-framed windows:
  - 1. Fixed windows.
- B. Related Sections include the following:
  - 1. Division 8 Sections "Aluminum Entrances and Storefronts" and "Glazed Aluminum Curtain Walls" for coordinating finishes between fenestration units.
  - 2. Division 8 Section "Glazing" for glazing requirements for aluminum windows, including those specified to be field glazed.

#### 1.3 DEFINITIONS

- A. AW: Architectural.
- B. Performance grade number, included as part of the AAMA/NWWDA product designation code, is actual design pressure in pounds force per square foot (pascals) used to determine structural test pressure and water test pressure.
- C. Structural test pressure, for uniform load structural test, is equivalent to 150 percent of design pressure.
- D. Minimum test size is smallest size permitted for performance class (gateway test size). Products must be tested at minimum test size or at a size larger than minimum test size to comply with requirements for performance class.

#### 1.4 PERFORMANCE REQUIREMENTS

- A. General: Provide aluminum windows capable of complying with performance requirements indicated, based on testing manufacturer's windows that are representative of those specified and that are of test size indicated below:
  - 1. Minimum size required by gateway performance requirements for determining compliance with AAMA/NWWDA 101/I.S.2-97 for both gateway performance requirements and optional performance grades.
- B. AAMA/NWWDA Performance Requirements: Provide aluminum windows of the performance class and grade indicated that comply with AAMA/NWWDA 101/I.S.2.-97

- 1. Performance Class: [AW].
- 2. Performance Grade: [100].
- C. Structural: Test according to ASTM E 330 [at 100 psf] and as follows:
  - 1. When tested at positive and negative wind-load design pressures, assemblies do not evidence deflection exceeding specified limits.
  - 2. When tested at [150] percent of positive and negative wind-load design pressures, assemblies, including anchorage, do not evidence material failures, structural distress, or permanent deformation of main framing members exceeding [0.2] percent of span.
  - 3. Test Durations: As required by design wind velocity, but not less than [10] seconds.
- D. Air Infiltration: Test according to ASTM E 283 for infiltration as follows:
  - 1. Fixed Framing and Glass Area:
    - a. Maximum air leakage of [0.10 cfm] per foot of perimeter crack length at a static-airpressure differential of [6.24 lbf/sq. ft.].
- E. Water Penetration under Static Pressure: Test according to ASTM E 331 as follows:
  - 1. No evidence of water penetration through fixed glazing and framing areas when tested according to a minimum static-air-pressure differential of 20 percent of positive wind-load design pressure, but not less than [15.0 lbf/sq. ft.].
- F. Energy Performance: Certify and label energy performance according to AAMA 1503-98 as follows:
  - 1. Thermal Transmittance (U-factor): Fixed glazing and framing areas shall have U-factor of not more than [0.43 Btu/sq. ft. x h x deg F] as determined according to AAMA 1503-98.
- G. Condensation-Resistance Factor: Provide aluminum windows tested for thermal performance according to AAMA 1503-98, showing a CRF of [60], where windows are indicated to be "thermally improved."
- H. Thermal Movements: Provide aluminum windows, including anchorage, that accommodate thermal movements of units resulting from the following maximum change (range) in ambient and surface temperatures without buckling, distortion, opening of joints, failure of joint sealants, damaging loads and stresses on glazing and connections, and other detrimental effects. Base engineering calculation on actual surface temperatures of materials due to solar heat gain and nighttime-sky heat loss.
  - 1. Temperature Change (Range): 120 deg F.
- I. Forced Entry Resistance: Tested in accordance with ASTM F 588 for Type B Grade 10.

#### 1.5 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, fabrication methods, dimensions of individual components and profiles, hardware, finishes, and operating instructions for each type of aluminum window indicated.
- B. Shop Drawings: Include plans, elevations, sections, details, hardware, attachments to other Work, operational clearances, and the following:
  - 1. Mullion details, including reinforcement and stiffeners.
  - 2. Joinery details.

- 3. Flashing and drainage details.
- 4. Thermal-break details.
- 5. Glazing details.
- C. Product Test Reports: Based on evaluation of comprehensive tests performed [within the last four years] by a qualified testing agency, for each type, grade, and size of aluminum window. Test results based on use of down-sized test units will not be accepted.

#### 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An installer acceptable to aluminum window manufacturer for installation of units required for this Project.
- B. Source Limitations: Obtain aluminum windows through one source from a single manufacturer.
- C. Product Options: Drawings indicate size, profiles, and dimensional requirements of aluminum windows and are based on the specific system indicated.
  - 1. Windows are based on DeSCo i85+ Series thermally-improved windows with 4.5-inch perimeter frame.
  - 2. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.
- D. Fenestration Standard: Comply with AAMA/NWWDA 101/I.S.2, "Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors," for minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.
- E. Glazing Publications: Comply with published recommendations of glass manufacturers and GANA's "Glazing Manual" unless more stringent requirements are indicated.

#### 1.7 PROJECT CONDITIONS

A. Field Measurements: Verify aluminum window openings by field measurements before fabrication and indicate measurements on Shop Drawings.

#### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Fixed Windows:
    - a. CMI Architectural Products.
    - b. Custom Window Company.
    - c. DeSCo Windows.
    - d. EFCO Corporation.
    - e. Graham Architectural Products Corp.
    - f. Kawneer Company, Inc.

- g. Manko.
- h. Peerless.
- i. Winco.
- B. Basis-of-Design Product:
  - 1. [DeSCo Windows i85+ Thermal Series] with [4-1/2 inch] deep perimeter frame, [40 mm polyamide thermal break] and 1-inch thick (low-e) insulated glazing units.
  - 2. Frame Depth: [4-1/2 inches].
  - 3. Typical Material Thickness: [0.094 inch].
  - 4. Thermal Barrier: Continuously extruded, multi-directional 25% glass fiber reinforced 6/6 polyamide nylon (strip).
    - a. Thermal barrier assembly structural values shall meet minimum certified testing criteria and procedures as described by the AAMA TIR-A8 performance standards unless more stringent specific product/project design criteria are specified herein.
  - 5. Finish: [Clear anodized].

#### 2.2 MATERIALS, GENERAL

- A. Aluminum Extrusions: Alloy and temper recommended by aluminum window manufacturer for strength, corrosion resistance, and application of required finish, but not less than 22,000-psi (150-MPa) ultimate tensile strength, not less than 16,000-psi (110-MPa) minimum yield strength, and not less than 0.094-inch thickness at any location for the main frame and sash members.
  - 1. Aluminum Extrusions: 6063 T-5 alloy with minimum tensile strength of 22,000 PSI.
  - 2. Sheet Aluminum: ASTM B 209; 5005 alloy, H15 or H34 temper.
- B. Fasteners: Aluminum, nonmagnetic stainless steel, epoxy adhesive, or other materials warranted by manufacturer to be noncorrosive and compatible with aluminum window members, trim, hardware, anchors, and other components.
  - 1. Reinforcement: Where fasteners screw-anchor into aluminum less than 0.125 inch (3.2 mm) thick, reinforce interior with aluminum or nonmagnetic stainless steel to receive screw threads, or provide standard, noncorrosive, pressed-in, splined grommet nuts.
  - 2. Exposed Fasteners: Unless unavoidable for applying hardware, do not use exposed fasteners. For application of hardware, use fasteners that match finish of member or hardware being fastened, as appropriate.
- C. Anchors, Clips, and Accessories: Aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated. [Cadmium-plated steel anchors, clips, and accessories are not permitted.]
- D. Reinforcing Members: Aluminum, nonmagnetic stainless steel, nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.

E. Sealant: For sealants required within fabricated windows, provide window manufacturer's standard, permanently elastic, nonshrinking, and nonmigrating type recommended by sealant manufacturer for joint size and movement.

#### 2.3 GLAZING

- A. Glass and Glazing Materials: Refer to Division 8 Section "Glazing" for glass units and glazing requirements applicable to glazed aluminum window units.
- B. Glazing System: Manufacturer's standard [factory-installed] glazing system. Glass as indicated in Division 8 Section "Glazing."

#### 2.4 FABRICATION

- A. General: Fabricate aluminum windows, in sizes indicated, that comply with AAMA/NWWDA 101/I.S.2 for performance class and performance grade indicated. Include a complete system for assembling components and anchoring windows.
- B. Fabricate aluminum windows that are reglazable without dismantling sash or ventilator framing.
- C. Thermally Improved Construction: Fabricate aluminum windows with an integral, concealed, lowconductance thermal barrier; located between exterior materials and window members exposed on interior side; in a manner that eliminates direct metal-to-metal contact.
  - 1. Provide thermal-break construction that has been in use for not less than three years and has been tested to demonstrate resistance to thermal conductance and condensation and to show adequate strength and security of glass retention.
  - 2. Provide thermal barriers tested according to AAMA 505; determine the allowable design shear flow per the appendix in AAMA 505.
  - 3. Provide hardware with low conductivity or nonmetallic material for hardware bridging thermal breaks at frame or vent sash.
- D. Weep Holes: Provide weep holes and internal passages to conduct infiltrating water to exterior.
- E. Mullions: Provide mullions and cover plates as shown, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections, as indicated. Provide mullions and cover plates capable of withstanding design loads of window units.
- F. Glazing Stops: Provide snap-on glazing stops coordinated with Division 8 Section "Glazing" and glazing system indicated. Provide glazing stops to match sash and ventilator frames.

#### 2.5 FINISHES

- A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

C. Class II, Clear Anodic Finish: AA-M12C22A31 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.010 mm or thicker) complying with AAMA 611.

#### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances; rough opening dimensions; levelness of sill plate; coordination with wall flashings, vapor retarders, and other built-in components; operational clearances; and other conditions affecting performance of work.
  - 1. Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
  - 2. Metal Surfaces: Dry; clean; free of grease, oil, dirt, rust, corrosion, and welding slag; without sharp edges or offsets at joints.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 INSTALLATION

- A. General: Comply with manufacturer's written instructions and approved Shop Drawings for installing windows, hardware, accessories, and other components.
- B. Install windows level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.
- C. Set sill members in bed of sealant or with gaskets, as indicated, for weathertight construction.
- D. Install windows and components to drain condensation, water penetrating joints, and moisture migrating within windows to the exterior.
- E. Metal Protection: Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials by complying with requirements specified in "Dissimilar Materials" Paragraph in Appendix B in AAMA/NWWDA 101/I.S.2.

#### 3.3 PROTECTION AND CLEANING

- A. Protect window surfaces from contact with contaminating substances resulting from construction operations. In addition, monitor window surfaces adjacent to and below exterior concrete and masonry surfaces during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written recommendations.
- B. Clean aluminum surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.

#### END OF SECTION 085113

#### SECTION 107000 – EXTERIOR SUN CONTROL DEVICES

#### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

#### A. Section Includes:

- 1. Stationary [vertical] exterior sun control devices fabricated from extruded-aluminum and perforated aluminum screening; [factory-finished].
- B. Related Requirements:
  - 1. Section 055000 "Metal Fabrications."
  - 2. Division 8 Sections "Aluminum Entrances and Storefronts" and "Glazed Aluminum Curtain Walls" for coordinating finishes between sunshades and aluminum [storefront] [and] [curtain wall] framing.
  - 3. Section 084413 "Glazed Aluminum Curtain Walls" for sun control devices installed integrally with aluminum curtain wall assemblies.
    - a. Aluminum sun control devices installed at/adjacent aluminum [**curtain wall**] locations shall be furnished and installed by Section 084413 "Glazed Aluminum Curtain Walls."

#### 1.3 COORDINATION

A. Coordinate installation of metal fabrications that are anchored to or that receive other work. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

#### 1.4 QUALITY ASSURANCE

- A. Fabricator Qualifications: A fabricator who is qualified to engineer and manufacture aluminum sun control devices according to the following:
  - 1. National Association of Architectural Metal Manufacturers (NAAMM).
  - 2. American Architectural Manufacturers Association (AAMA).

#### 1.5 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design aluminum sunshades, including comprehensive engineering analysis by a qualified professional engineer licensed in the State of South Dakota, using performance requirements and design criteria indicated.

- B. Structural Performance: Aluminum sunshades shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated.
  - 1. Uniform Load: 100 lbf/sq. ft. (4.79 kN/sq. m).
  - 2. Concentrated Load: 300 lbf (1.33 kN) applied on an area of 4 sq. in. (2580 sq. mm).
  - 3. Uniform and concentrated loads need not be assumed to act concurrently.
  - 4. Limit deflection of framing members to [L/360] or 1/4 inch (6.4 mm), whichever is less.

#### 1.6 ACTION SUBMITTALS

- A. Product Data: Submit specifications, technical and descriptive data, and installation instructions from the manufacturer of the sunshades.
- 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.] Provide Shop Drawings for the following:
  - 1. Show anchorage, details and connections for all the component parts, including connection of mounting clip to structure and adjacent construction.
  - 2. Drawings shall include plans, sections, and specific details for each unit.
  - 3. Drawings shall detail appropriate materials, alloys, and finishes of all parts including installation hardware.
- C. Structural Calculations: Submit analysis of shade connection to mounting bracket, signed and sealed by a professional engineer licensed to practice in the State of South Dakota, considering design loads such as dead, live, snow, wind, thermal movement, and any collateral loads (e.g. light fixtures or signage) that my be mounted to sunshade.
  - 1. Engineer of record to verify and analyze sunshade clip attachment to structure for local code and loads such as dead, live, snow, wind, thermal movement, and any collateral loads (e.g. light fixtures or signage) that my be mounted to sunshade.
- A. Samples: For items indicated to receive factory-applied finishes. Include color charts indicating manufacturer's range of standard color selections.
- B. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer, licensed in the State of South Dakota, responsible for their preparation.
- C. Warranty: Provide written warranty to the owner that all screen products will be free of defective materials or workmanship for a period of one (1) year from date of Substantial Completion.

#### 1.7 QUALITY ASSURANCE

- A. Welding: Qualify procedures and personnel according to the following:
  - 1. AWS D1.1, "Structural Welding Code--Steel."
  - 2. AWS D1.2, "Structural Welding Code--Aluminum."
  - 3. AWS D1.3, "Structural Welding Code--Sheet Steel."

#### 1.8 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication.

#### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. Provide sun control devices which have been manufactured, fabricated and installed to withstand loads from ASCE 7, or local requirements of Authority Having Jurisdiction.
- B. Sun control devices shall be designed to perform under conditions herein or required by site conditions with no permanent damage to or deforming of the sunshade blades or assembly, noise or metal fatigue caused by sunshade blade rattle or flutter, or permanent damage to fasteners or anchors.
- C. 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].

#### 2.2 METALS, GENERAL

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.

#### 2.3 NONFERROUS METALS

- A. Fabricate products from alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with strength and durability properties for each aluminum form required not less than that of alloy and temper designated below.
- B. Aluminum Plate and Sheet: ASTM B 209 (ASTM B 209M), Alloy 6061-T6.
- C. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), Alloy 6063-T5.
- D. Bars and Shapes: ASTM B 221 (ASTM B 221M), Alloy 6063-T5/T52.
- E. [Pipe] [and] [Round Tubing]: ASTM B 429/B 429M, Alloy 6063-T6.
- F. Tubing: ASTM B 210 (ASTM B 210M), Alloy 6063-T832.
- G. Forgings: ASTM B 247 (ASTM B 247M), Alloy 6061-T6.
- H. Castings: ASTM B 26/B 26M, Alloy A356.0-T6.
- 2.4 FASTENERS

- A. General: Unless otherwise indicated, provide [**Type 304**] stainless-steel fasteners for exterior use. Select fasteners for type, grade, and class required.
- B. Stainless-Steel Bolts and Nuts: Regular hexagon-head annealed stainless-steel bolts, ASTM F 593 (ASTM F 738M); with hex nuts, ASTM F 594 (ASTM F 836M); and, where indicated, flat washers; Alloy [Group 1 (A1)].
- C. Anchors and Inserts: Use non-Ferrous metal or hot dip galvanized anchors and inserts for installation and elsewhere as required for corrosion resistance. Use stainless steel or zinc galvanized expansion bolt devices for drill-in place anchors. Furnish inserts, as required, to be set into concrete or masonry work. Field weld clips.
  - 1. Anchor Bolts: ASTM F 1554, Grade 36, of dimensions indicated; with nuts, ASTM A 563 (ASTM A 563M); and, where indicated, flat washers.

#### 2.5 MISCELLANEOUS MATERIALS

A. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.

#### 2.6 FABRICATION, GENERAL

- A. Provide fixed sunshades and accessories of design, material, sizes, depth, arrangement, and thickness as indicated or as required for optimal performance with respect to strength; durability; and uniform appearance.
  - 1. Include supports, anchorage, and accessories required for complete assembly, including all attachment clips and necessary hardware for attachment to structure.
  - 2. Manufacturer shall allow +/- 1/8" thermal expansion room at each shade to compensate for dissimilar movement between building structure and aluminum sunshade structure. This design shall be incorporated as to not induce self destructing loads onto either shade or building veneer.
  - 3. No blade fasteners shall be visible after installation of sections. Provide cover plates at each outrigger end to conceal fasteners. Only mounting hardware shall be visible after installation.
- B. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm) unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- D. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- E. Form exposed work with accurate angles and surfaces and straight edges.
- F. 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 so no roughness shows after finishing [and contour of welded surface matches that of adjacent surface].
- G. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.
- H. Fabricate seams and other connections that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- I. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- J. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
  - 1. Anchoring system shall be designed and furnished by the aluminum sunshade manufacturer.

#### 2.7 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide framing and supports not specified in other Sections as needed to complete the Work.
- B. Fabricate units from [aluminum] [stainless 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.

#### 2.8 ALUMINUM EXTRIOR SUN CONTROL DEVICES

- A. Fabricate units from [aluminum] sheet, shapes, plates, and bars of welded construction, unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction retained by framing and supports.
- B. Assembly: Components to be shop assembled in sections as large as practical to allow for immediate installation. Sections indicated on shop drawings to be assembled and shipped as units with cover plates and support arms, if required, shipped loose.
  - 1. Fasteners shall be bagged in groups clearly identifying bolt locations and bag contents for easy installation. Manufacturer to provide anti-seize compound for any field bolted stainless hardware to facilitate proper erection.
- C. Manufacturers:
  - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Construction Specialties.
    - b. Firestone Metal Products.
    - c. Industrial Louvers, Inc.
    - d. Kawneer North America.
    - e. Approved Equal.

- 2. Aluminum Sun Control Devices Basis-of-Design: Based on [vertical] sun control devices manufactured by *Industrial Louvers, Inc.*
- 1. Perforated Metal Blade Design: [As indicated on drawings].
  - a. Overall Depth: [Varies]; see plans.
  - b. Outrigger Style: [Straight-Square].
  - c. Aluminum Sheet:
    - 1) Aluminum Sheet Thickness: [0.250 inch].
    - 2) Pattern Type: Based on [Round Staggered RS096] pattern by Accurate Perforating.
    - 3) Perforation Size: [0.500 inch] diameter.
    - 4) Center-to-Center Spacing: [0.687 inch].
    - 5) Open Area: [48%].
  - d. Attachment System: [Mechanically-attached aluminum mounting brackets or clips], as designed by sunscreen manufacturer; finished to match sunscreen.
  - e. Factory-finish sunscreens, as specified.
    - 1) Finish: [Clear anodized].
- 2. All sunshades shown on the Drawings shall be furnished and installed by Section 084413 "Glazed Aluminum Curtain Walls."
  - a. Unless indicated otherwise, provide sunshade units that are integral with glazed aluminum [curtain wall] systems, as indicated on Drawings.
  - b. Sunshade fabricator shall assume responsibility for designing and providing means of attachment to glazed aluminum [curtain wall] systems.

#### 2.9 FINISHES, GENERAL

- A. Finish metal fabrications after assembly.
- B. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

#### 2.10 ALUMINUM FINISHES

- A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
- B. Clear Anodic Finish: AAMA 611, [AA-M12C22A31, Class II, 0.010 mm] or thicker.

#### PART 3 - EXECUTION

#### 3.1 INSTALLATION, GENERAL

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing aluminum sunshades. Set aluminum sunshades 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. Fastening to In-Place Construction: Provide anchorage devices and fasteners where aluminum sunshades are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.
- D. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

#### 3.2 INSTALLING ALUMINUM SUNSHADES

- A. General: Comply with manufacturer's instructions and recommendations for installation of the work, including manufacturers' written instructions and requirements indicated on Shop Drawings.
- B. Verify dimensions of supporting structure at the site by accurate field measurements so that the work will be accurately designed, fabricated, and fitted to the structure.
- C. Anchor Sunscreen to [building substructure] [curtain wall framing] as indicated on the sunshade shop drawings.
- D. Erection Tolerances:
  - 1. Clips or Mounting Brackets:
    - a. Elevation clip Variation from level: 1/8" maximum in any column to column space or 20'-0" runs, non-cumulative.
    - b. Offsets in projection of clips front leading edge 1/16"+/-.
    - c. Veneer or Wall construction tolerance around clip projection. 1/4"+ outward.
    - d. Clip Plumbness: 1/16" in 6".
    - e. Clip projection level: 1/16" in 12".
  - 2. Shade Sections:
    - a. Projection Level: 1/8" in 4'-0".
    - b. Horizontal Level: 1/8" max in any column to column space or in 20'-0" runs, noncumulative.
    - c. Shade section to section variation 1/32" at adjoining sections.
- E. Cut and trim component parts during erection only with the written approval of the manufacturer, and in accordance with manufacturer's recommendations. Restore finish completely. Remove and replace members where cutting and trimming has impaired the strength or appearance of the assembly as directed by manufacturer.

- F. Do not erect warped, bowed, deformed or otherwise damaged or defaced members. Remove and replace any members damaged in the erection process as directed by Architect.
- G. Set units level, plumb and true to line, with uniform joints.
- H. Erect sunshade sections after all adjacent painting, masonry (including chemical treatments), roofing, electrical, glazing, and other similar work is completed above and below the shade sections.

#### 3.3 CLEANING AND PROTECTION

- A. Clean exterior sunshades surfaces to prevent buildup of dust and debris. Clean sunshades as outlined in AAMA 609/610-02. "Cleaning and Maintenance Guide for Architecturally Finishes Aluminum" or NAAM Metal Finishes Manual "Cleaning Procedures" 1-13/1-14.
- B. Protect Sunshade materials after installation to prevent damage by other trades. Special attention shall be taken to ensure no equipment or personnel stands on top of sunshade system, nor sunshade system is used to hang any type of tarp or similar barricade or signage other than the design intent.

END OF SECTION 107000

#### SECTION 116600 – ATHLETIC EQUIPMENT (ADD ALTERNATE NO. 2)

#### PART 1 - GENERAL

#### 1.1 WORK INCLUDED

- A. Provide all equipment and materials, and do all work necessary to furnish and install the athletic equipment, as indicated on the drawings and as specified herein. Athletic equipment shall comply with NFHS and SDHSAA requirements. Athletic equipment shall include, but not be limited to:
  - 1. FB28120CXX Football Goal 8' Offset, 20' Uprights w/mounting plate (Qty = 2 Each)
  - 2. F302 Football Goal Post Pad w/Graphic Vinyl Cover -72" Tall (Qty = 2 Each)
  - 3. 296801 Weighted Football Pylons Set of 4 (Qty = 2 Sets)

#### 1.2 RELATED WORK

- A. Examine contract documents for requirements that affect work of this section. Other specification sections that directly relate to the work of this section include, but are not limited to:
  - 1. Section 312000 Earthwork Moving
  - 2. Section 321213 Asphalt Pavement and Aggregate Base
  - 3. Section 033000 Cast-in-Place Concrete
  - 4. Section 323113 Chain-link Fences and Gates

#### 1.3 REFERENCES

- A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.
  - 1. National Federation of State High School Associations (NFHS)
  - 2. South Dakota High School Athletic Association (SDHSAA)
  - 3. American Sports Builders Association (ASBA)
  - 4. Manufacturers Data and Recommended Installation Requirements

#### 1.4 SUBMITTALS

- A. Manufacturers Product Data
  - 1. Provide manufacturers product data prior to actual field installation work, for Architects or Owners representatives review.
- B. Shop Drawings
  - 1. Provide drawings of the manufacturers recommended installation and foundation requirements prior to actual field installation work, for Architects or Owners representative's review.

#### 1.5 QUALITY ASSURANCE

A. Manufacturers warranties shall pass to the Owner and certification made that the product materials meet all applicable grade trademarks or conform to industry standards and inspection requirements.

#### 1.6 PRODUCT DELIVERY AND STORAGE

A. Materials delivered to the site shall be examined for damage or defects in shipping. Any defects shall be noted and reported to the Owners representative. Replacements, if necessary, shall be immediately reordered, so as to minimize any conflict with the construction schedule. Sound materials shall be stored above ground under protective cover or indoors so as to provide proper protection.

#### PART 2 - PRODUCTS

- 2.1 Football Goal, Post Pad, Pylons
  - Model FB28120CXX Football Goal 8' Offset, 20' Uprights w/mounting plate or approved equal Model F302 Football Goal Post Pad w/Graphic Vinyl Cover or approved equal Model 296801 Weighted Football Pylons or approved equal

#### B. COMPONENTS:

- 1. Offset Pole: 6" Sch. 40 Aluminum Pole (6.625" O.D.) w/durable powder coat finish (yellow)
- 2. Crossbar: 6" Sch. 40 Aluminum Pole (6.625" O.D.) w/durable powder coat finish (yellow)
- 3. Upright: 4" O.D. x 1/8" wall Aluminum Tube w/durable powder coat finish (yellow)
- 4. Mounting plate
- 5. 6" thick high-density polyurethane foam core padding covered in 19 oz vinyl (6' tall)
- 6. 18" tall x 4" width flexible foam core pylon with fluorescent orange vinyl cover UV treated.
- 7. The pylon shall have a weighted bottom.

#### PART 3 - EXECUTION

#### 3.1 INSTALLATION OF EQUIPMENT

A. All athletic equipment shall be installed as recommended with manufacturer's written directions, and as indicated on the drawings.

END OF SECTION 116600













# C SOUTH ELEVATION - AREA D - MEDIA CENTER 5.13 SCALE: 1/8" = 1'-0"

# E WEST ELEVATION - AREA D 5.13 SCALE: 1/8" = 1'-0"

\_\_\_\_





e de la companya de l				
0"2"	7'-0"	2",1'-10",	2" 7'-0 1/2"	L
		1 1		





















5.21 STOREFRONT 5.21 SCALE: 1/8" = 1'-0"







/6/2021 5:37:41 PM





2/6/2021 5:37:45 PN

![](_page_37_Figure_0.jpeg)

![](_page_37_Picture_4.jpeg)

- STRUCTURAL DRAWINGS FOR

![](_page_38_Figure_0.jpeg)

%2021 5:37:49 PM

![](_page_39_Figure_0.jpeg)

![](_page_39_Picture_1.jpeg)

![](_page_39_Picture_2.jpeg)

![](_page_40_Figure_0.jpeg)

![](_page_40_Picture_1.jpeg)

project_HARRISBURG HS - 9TH GRADE ACADEMY	DRAWING
number 1002.2904.20 drawn PEM checked SRJ	0.00
date12-6-2021 revision	SD2
Architecture Incorporated	
415 South Main Ave., P.O. Box 2140 Sioux Falls, SD (605) 339-1711	

![](_page_41_Figure_0.jpeg)

![](_page_41_Figure_1.jpeg)

project_HARRISBURG HS - 9TH GRADE ACADEMY	DRAWING
number 1002.2904.20 drawn ZJG checked SRJ	0.00
date12-6-2021 revision	SD3
Architecture Incorporated	
415 South Main Ave., P.O. Box 2140 Sioux Falls, SD (605) 339-1711	

![](_page_42_Figure_0.jpeg)

![](_page_42_Figure_1.jpeg)

![](_page_42_Picture_2.jpeg)

	project HARRISBURG HS - 9TH GRADE ACADEMY	DRAWING
	number 1002.2904.20 drawn PEM checked SRJ	
	date12-6-2021 revision	SD4
	Architecture Incorporated	
	415 South Main Ave., P.O. Box 2140 Sioux Falls, SD (605) 339-1711	

![](_page_43_Figure_0.jpeg)

 projectHARRISBURG HS - 9TH GRADE ACADEMY	DRAWING
number 1002.2904.20 drawn PEM checked SRJ	
date12-6-2021 revision	SD5
Architecture Incorporated	
415 South Main Ave., P.O. Box 2140 Sioux Falls, SD (605) 339-1711	

![](_page_44_Figure_0.jpeg)

![](_page_44_Figure_1.jpeg)

![](_page_44_Picture_2.jpeg)

	project_HARRISBURG HS - 9TH GRADE ACADEMY	DRAWING
	number 1002.2904.20 drawn ZJG checked SRJ	000
	date 12-6-2021 revision	2D0
	Architecture Incorporated	
	415 South Main Ave., P.O. Box 2140 Sioux Falls, SD (605) 339-1711	

#### TABLE OF CONTENTS - MECHANICAL

#### **DIVISION 21 – FIRE SUPPRESSION**

<u>SECTION</u>	<u>TITLE</u>	NO. OF <u>PAGES</u>
210100	GENERAL PROVISIONS	11
210500	FIRE SUPPRESSION	4

PROJECT: HARRISBURG HS – 9<sup>th</sup> Grade Academy SIOUX FALLS, SOUTH DAKOTA

ACEI PROJECT NO.: 120085

DATE: November 19, 2021

Project Manual sections prepared by or under the supervision of Steven Gugel, Reg. No. 13638, include all sections of Division 21.

![](_page_45_Picture_7.jpeg)

A			AH019GD0	GM 9,40	0 3,78	0 1.5	5 3.7 5 3.7	10	7.6		460	3	DD, PLE	NUM / 27"	1375	385	.5 8	2.1/67.0	54.3/53.8	3 500	0
A	\HU-3 [ \HU_4 ''		AH030GD	GM 10,0	00 6,90	0 1.5	5 3.5	10	7.7		460	3	DD, PLE	NUM / 27"	1380 5" 1620	511 194	.2 8	7.1/69.8	54.3/53.8	3 500	0 0
A	AHU-5 [	DAIKIN C	AH013GD0	GM 2,50	0 1,10	0 1.5	5 <u>3.4</u> 5 3.7	3	2.3		460	3	DD, PLE	NUM / 14"	2895	105	.1 7 .1 8	2.3/67.3	54.3/53.8	3 500 3 500	0
A	\HU-6 [		AH038GD	GM 17,1	00 6,41	0 2.5	5 4.5	15(X2	) 8.5(	X2)	460	3	DD, PLE	NUM / 24.5	" 1675	680	.1 8	1.6/66.7	54.3/53.8	3 500	0
A	AHU-7 [ AHU-8 [	DAIKIN C DAIKIN C	AH016GD0 AH043GD0	JM 7,70 GM 19.7	υ 1,35 00 6,84	U 2.5 0 2.5	4.6   5 4.6	10 15(X2	7.9 ) 10.2	2(X2)	460 3 460 3	5 }	DD, PLE DD, PLE	NUM / 24.5 NUM / 24.5	" 1641 " 1780	248 760	.1 7 .1 8	ช.1/64.5 1.1/66.4	54.3/53.8	500 500 500	υ 0
A	NHU-9 [	DAIKIN C	AH066GD0	GM 29,8	00 10,2	10 2.5	5 46	20(X2	) 15.6	6(X2)	460	3	DD, PLE	NUM / 30"	1475	1,15	50.1 8	1.0/66.3	54.3/53.8	3 500	0
A	AHU-10 [	DAIKIN C	AH009GD0	GM 4,25	0 1,99 0	0 1.5	5 3.7 75 1.17	5	3.5	, ;	460 3	3	DD, PLE	NUM / 18.2	5" 2050 1670	183	.5 8	3.3/67.6	54.3/53.8	3 500	0
F 1 2 3 4 5	REMARKS: 1. HEATI 2. DIREC 3. ESP IN 4. ACCES DOOR 5. AIR HA PROVI	NG AND CO T DRIVE PI NCLUDES A SS SHALL E S AND 18 II ANDLER MA IDE AND IN	DOLING CO LENUM FA IN ALLOW/ BE PROVIE NCH (MIN. ANUFACTU ISTALL A S	DIL CAPAC N CONTRO ANCE OF 0 DED INTO 1 ) SPACE BI JRER SHAL SINGULAR 1	ITIES AR DLLED BY .5" FOR I THE FILTE TWEEN L PROVI VFD FOR	E BASED VFD. DIRTY FIL ER SECTI COILS. F DE AND I DUAL FA	O ON 70% TERS. ION, BLEN PROVIDE H MOUNT CI AN ARRAN	WATER/ IDER SE HEAVY D ONDUIT IGEMEN	30% PRC CTION, E DUTY 18 ( AND WIF T CONTF	DPYLEN BETWEI GAUGE RING FF ROL.	NE GLYCC EN THE H STAINLE ROM EAC	L. EATI SS S H FA	ING AND STEEL DR N TERMII	COOLING AIN PANS NATED AT	COILS AN FOR CON AN EXTE	ID FAN IPLETE RNAL J	SECTIO E DRAIN UNCTIO	on. Pro Iage Ani On Box.	VIDE 15 II D WALKIN TC CONT	NCH ( IG TR RACT	(mi Raf Tof
		POW					TERM.	L S(		DU		R M	IOTOR		HEATIN	NG COI	L				
	10	MANUF.	NO	SIZE	CFM	CFM	SP.	SP.	NC	NC		$\checkmark$				MBH	GPM	WPD		WI	R
F	P-B101	PRICE	FDVLP	10	990 1400	300 420	0.25"	0.5"	33	34	1/2	2	77 1 77 1	2.9	64	28.8 49.7	4.4	5	160 1 160 <sup>7</sup>	130	1, 1,
F	P-C105	PRICE	FDV	12	1130	340	0.25	0.5"		34	1/2	~	77 1	4.0		46.5	3.2			30	Υ,
F	P-C109	PRICE	FDV FDV	16 14	1730 1700	520 510	0.25"	0.5" 0.5"	40 33	35 39	1	2	77 1 77 1	5.9 5.9	64 64	59.8 29.3	4.2	5	160 1 160 /	130 130	1,   1
F	P-C116B	PRICE	FDV	14	1700	510	0.25"	0.5"	33	39	1	2	77 <u>1</u>	5.9	64	29.3	2.0	5	160 <sup>7</sup>	130	1
F	P-C120	PRICE	FDV	10	880	270	0.25"	0.5"	29	26	1/2	2	77 1	4.0	64	21.5	1.5	5	160 ´	30	1
F	P-C126	PRICE	FDV	16	2740	830	0.25"	0.5"	40	35	1	2	77 1	5.9	64	110.9	7.7	5		30	1
F F	P-C127	PRICE	FDV	12 16	1170	360	0.25"	0.5"	33	34	1/2	2	/7 1 77 ₄	4.0	64 64	52.9	3.7	5	160 1	130 130	1
⊆ F	P-D137B	PRICE	FDV	16	1930	580	0.25	0.5"	40	35	1	2	77 1	5.9	64	57.4 57.4	4.0	5		130	
F	P-D137C	PRICE	FDV	16	1930	580	0.25"	0.5"	40	35	1	2	77 1	5.9	64	57.4	4.0	5	160	30	1
F	P-D137D	PRICE	FDV	16	1930	580	0.25"	0.5"	40	35	1	2	77 1	5.9	64	57.4	4.0	5	160 ŕ	30	1
F	P-D138	PRICE	FDV	14	1690	510	0.25"	0.5"	33	39	1/2	2	77 1	4.0	64	39.9	2.8	5	160	130	1
F	P-D141			10 12	825 1285	250 390	0.25"	0.5"	29 33	26 34	1/2	2	// 1 77 1	4.0 4 0	64 64	20.1 34 2	1.4 21	5	160 1	130  30	1   ,
F	P-D143	PRICE	FDV	6	260	80	0.25"	0.5"	25	20	1/2	2	77 1	2.1	64	7.4	0.5	5	160	130	
=	P-D200	PRICE	FDV	12	1340	410	0.25"	0.5"	33	34	1/2	2	77 1	4.0	64	29.2	2.0	5	160 -	30	ŀ
-	P-D201	PRICE	FDV	8	680	210	0.25"	0.5"	28	22	1/3	2	77 1	2.1	64	17.0	1.2	5	160 2	30	ŀ
-	P-D205	PRICE	FDV	8	670	210	0.25"	0.5"	28	22	1/3	2	77 1	2.1	64	17.0	1.2	5	160	30	1  -
	P-D208	PRICE		1∠ 10	750	350 230	0.25"	0.5"	29 33	∠0 34	1/2	2	// 1 77 1	4.0	64	40.5 18⊿	2.8	5 5	160 1 160 .	130  30	
-	P-D211	PRICE	FDV	12	1370	420	0.25"	0.5"	33	34	1/2	2	77 1	4.0	64	29.7	2.1	5	160	130	+
-	P-D212	PRICE	FDV	10	865	260	0.25"	0.5"	29	26	1/2	2	77 1	4.0	64	20.5	1.4	5	160 -	130	
=	P-D213	PRICE	FDV	10	750	230	0.25"	0.5"	29	26	1/2	2	77 1	4.0	64	19.6	1.4	5	160 7	30	
=	P-E108	PRICE	FDV	8 9	665	200	0.25"	0.5"	28	22	1/3	2	77 1	2.1	64	18.6	1.3	5	160	30	ŀ
۲́ F	P-E109	PRICE		8 8	005 665	200 200	0.25"	0.5"	28 28	22 22	1/3	2	// 1 77 1	2.1	64	18.6 18.6	1.3	5 5	160 1	130  30	f
F	P-E111	PRICE	FDV	8	665	200	0.25"	0.5"	28	22	1/3	2	77 1	2.1	64	18.6	1.3	5	160	130	$\dagger$
F	P-E112	PRICE	FDV	10	745	230	0.25"	0.5"	29	26	1/2	2	77 1	4.0	64	22.7	1.6	5	160 -	130	ļ.
F	P-E114	PRICE	FDV	10	830	250	0.25"	0.5"	29	26	1/2	2	77 1	4.0	64	31.1	2.2	5	160	130	ļ
F F	P-E115A		FDV	14 14	1990	600 540	0.25"	0.5"	33	39 30	1	2	/7 1 77 1	5.9	64 64	44.4	3.1 2.2	5	160 1	130 130	╞
F	P-E115C	PRICE	FDV	14	1790	540	0.25"	0.5"	33	39	1	2	77 1	5.9	64	31.2	2.2	5	160	130	$\dagger$
F	P-E118	PRICE	FDV	10	950	290	0.25"	0.5"	29	26	1/2	2	77 1	4.0	64	31.3	2.2	5	160 -	30	ţ
F	P-E122	PRICE	FDV	10	985	300	0.25"	0.5"	29	26	1/2	2	77 1	4.0	64	28.3	2.0	5	160 -	130	ļ
F	P-E125	PRICE	FDV	10	1015	310	0.25"	0.5"	29	26	1/2	2	77 1	4.0	64	22.9	1.6	5		130	ļ
F F	P-F127	PRICE		12 10	1060 885	320 270	0.25"	0.5"	33 29	34 26	1/2	2	// 1 77 1	4.0 4.0	64 64	29.1 21 3	2.0	5	160 1	130  30	ŀ
F	P-E130	PRICE	FDV	8	665	200	0.25"	0.5"	28	22	1/3	2	77 1	2.1	64	17.8	1.2	5	160	130	╞
F	P-E208	PRICE	FDV	8	700	210	0.25"	0.5"	28	22	1/3	2	77 1	2.1	64	18.7	1.3	5	160 -	30	ļ
F	P-E209	PRICE	FDV	8	700	210	0.25"	0.5"	28	22	1/3	2	77 1	2.1	64	18.7	1.3	5	160 2	30	.  -
F	P-E210	PRICE	FDV	8 9	700	210	0.25"	0.5"	28	22	1/3	2	77 1	2.1	64	18.7	1.3	5	160	30	ŀ
=	⊏211 P-E212	PRICE	FDV	10	785	≥10 240	0.25 <sup>°</sup>	0.5"	20 29	22 26	1/3	2	77 1	4.0	04 64	10./ 22.7	1.3	5 5		130 130	$\left  \right $
F	P-E214	PRICE	FDV	10	860	260	0.25"	0.5"	29	26	1/2	2	77 1	4.0	64	30.9	2.2	5	160	130	t
=	P-E215A	PRICE	FDV	16	2310	700	0.25"	0.5"	40	35	1	2	77 1	5.9	64	65.4	4.6	5	160 ′	30	ţ
Ē	P-E215B	PRICE	FDV	16	2310	700	0.25"	0.5"	40	35	1	2	77 1	5.9	64	65.4	4.6	5	160 1	130	ļ,
F F	P-E215C	PRICE	FDV	16	2310	700	0.25"	0.5"	40	35 26	1/2	2	77 1	5.9	64	65.4	4.6	5	160	130	
۲	P-E220	PRICE	FDV	10	1050	320	0.25"	0.5"	29	26	1/2	2	77 1	4.0	64	29.1 26.2	2.1 1.8	5	160 /	130	+
F	P-E223	PRICE	FDV	10	1010	310	0.25"	0.5"	29	26	1/2	2	77 1	4.0	64	25.2	1.8	5	160 ć	30	ŀ
F	P-E225	PRICE	FDV	12	1100	330	0.25"	0.5"	33	34	1/2	2	77 1	4.0	64	29.3	2.0	5	160 2	30	
F	P-E226	PRICE	FDV	10 9	900	270	0.25"	0.5"	29	26	1/2	2	77 1	4.0	64	21.0	1.5	5		30	
- F 1 2 3 4 5	REMARKS: . SOUNI 2. NC RA 3. EXT. S COIL C 5. PROVI	D DATA SH TING INCL D. INCLUE CAPACITIES	IALL BE TA UDE A RE DES A COIL S ARE BAS OTOR CAR	KEN FROM TURN INLE APD. PABLE OF A	ARI STA T ATTEN WATER	NDARDS UATOR. I NG A 0-1	S 880 (LAT PROVIDE OPYLENE				@ 1.5" DE JATOR. FAN FOR	⊥∠ ELTA	P.)	MAX CFM.	<b>}</b>						1
					HOOD S		THROAT	SIZE	THROA	T AREA		1		DAT FPM	PD I	N. WG	OP (LB	ER. WT. SS)	REMAI	RKS	
R	кн-1 G кн-2 С		K FGF	र २	51/34 51/34		30/20 30/20		4		209	) ר	502		0.06		75		1		
P		GREENHEC	K FGF	२	51/49		36/30		8	_	364	, )	485		0.06		100	)	1		
R R	RH-3 ∣G								1												
R R R	RH-3 G RH-4 G	REENHEC	K FGF	र	51/49		36/30		8		364	)	485		0.06		100	)	1		

DUCTLESS SPLIT SYSTEM SCHEDULE									
JNIT		MODEL	TOTAL	MOTOR			COOLING COIL	OPERATING	
NO.	MANUF.	NO.	CFM	VOLT	PH	MCA	MBH	WEIGHT (LBS)	REMARKS
DSS-C121A	MITSUBISHI	PKA-A18KA7	425	208	1	1	18		1,2,3
REMARKS:	EMARKS:								
. PROVIDE WATER LEVEL DETECTION DEVICE THAT WILL SHUT OFF RESPECTIVE UNIT IN THE EVENT THAT THE PRIMARY DRAIN IS BLOCKED.									
	PROVIDE WIRED THERMOSTAT								

2. PROVIDE WIRED THERMOSTAT 3. UNIT POWERED FROM CONDENSING UNIT.

CONDENSING L									
UNIT		M							
NO.	MANUF.	N							

REMARKS:

DU	ST COLL	ECTOF	R SCHEI	DULE					
UNIT					FAN MC	TOR		OPER. WT.	
NO.	MANUF.	MODEL NO.	CFM	S.P.	HP	VOLT	PH	(LBS)	REMARKS
DC-1	AGET	70SN70-D2	3200	13.5	15	460	3	650	1,2,3
REMAR	KS:								
1. PR	OVIDE SAFETY MC	NITORING FILTE	ER. SEE SPEC F	OR MORE DETAIL					
2. PR	OVIDE 12" INTEGR	ATED DUST COL	LECTOR INLET I	BACK DRAFT DAM	IPER & EX	PLOSION	VENT.		
3. PR	OVIDE MODEL FT4	0 AFTER FILTER	R. SEE SPEC FOR	R MORE DETAIL.					

# AIR HANDI ING LINIT SCHEDUI E

וואונ	201	HEL	JUL	.E																														
	MIN O/A	\		FAN		ELEC		FAN		COOLING	G COIL CAF	PACITY							HEATIN	G COIL CA	PACITY							FILTER					OPER.	
CFM	CFM	ESP	TSP	HP	BHP	VOLTS	PH	TYPE/SIZE	RPM	MBH	EAT	LAT	FV	APD	EWT	LWT	GPM	WPD	MBH	EAT	LAT	FV	APD	EWT	LWT	GPM	WPD	TYPE	AREA(SF)	MAX FV	APD	THICK	WT(LBS)	REMARKS
6,500	1,350	1.5	3.7	7.5	5.4	460	3	DD, PLENUM / 22.25"	1705	216.8	78.6/64.9	54.3/53.8	500	0.77	44	56	37	10	335.1	52.5	104	500	0.4	160	130	25	6	MERV 8	21.5	300	0.56	2	3,040	1,2,3,4
9,400	3,780	1.5	3.7	10	7.6	460	3	DD, PLENUM / 27"	1375	385.5	82.1/67.0	54.3/53.8	500	0.80	44	56	65	16	586.1	32.0	92.2	500	0.3	160	130	42	8	MERV 8	37.7	300	0.55	2	3,945	1,2,3,4
10,000	6,900	1.5	3.5	10	7.7	460	3	DD, PLENUM / 27"	1380	511.2	87.1/69.8	54.3/53.8	500	0.90	44	56	89	6	950.4	9.6	103	500	0.3	160	130	68	10	MERV 8	52.9	300	0.53	2	5,050	1,2,3,4
6,300	600	1.5	3.4	7.5	4.8	460	3	DD, PLENUM / 22.25"	1630	184.1	76.7/53.6	54.3/53.8	500	0.60	44	56	26	6	215.1	65.0	98	500	0.3	160	130	16	5	MERV 8	20.2	300	0.56	2	2,850	1,2,3,4
2,500	1,100	1.5	3.7	3	2.3	460	3	DD, PLENUM / 14"	2895	105.1	82.3/67.3	54.3/53.8	500	1.00	44	56	19	7	190.1	31.0	105	500	0.3	160	130	14	9	MERV 8	13.9	300	0.53	2	1,800	1,2,3,4
17,100	6,410	2.5	4.5	15(X2)	8.5(X2)	460	3	DD, PLENUM / 24.5"	1675	680.1	81.6/66.7	54.3/53.8	500	0.80	44	56	98	8	525.1	37.0	65	500	0.2	160	130	35	9	MERV 8	62.9	300	0.55	2	6,640	1,2,3,4,5
7,700	1,350	2.5	4.6	10	7.9	460	3	DD, PLENUM / 24.5"	1641	248.1	78.1/64.5	54.3/53.8	500	0.90	44	56	44	9	122.1	50.0	65	500	0.2	160	130	9	5	MERV 8	34.1	300	0.54	2	3,260	1,2,3,4
19,700	6,840	2.5	4.6	15(X2)	10.2(X2)	460	3	DD, PLENUM / 24.5"	1780	760.1	81.1/66.4	54.3/53.8	500	0.90	44	56	134	12	550.1	40.0	65	500	0.2	160	130	38	14	MERV 8	65.5	300	0.56	2	7,200	1,2,3,4,5
29,800	10,210	2.5	46	20(X2)	15.6(X2)	460	3	DD, PLENUM / 30"	1475	1,150.1	81.0/66.3	54.3/53.8	500	0.90	44	56	200	12	813.6	40.0	65	500	0.2	160	130	57	6	MERV 8	104.1	300	0.55	2	10,300	1,2,3,4,5
4,250	1,990	1.5	3.7	5	3.5	460	3	DD, PLENUM / 18.25"	2050	183.5	83.3/67.6	54.3/53.8	500	1.0	44	56	32	7	270.1	26.0	85	500	0.3	160	130	19	5	MERV 8	17.6	300	0.54	2	2,450	1,2,3,4
6,000		0.75	1.17	7.5	2.45	460	3	DD, PLENUM / 20"	1670										376.6	25.0	85.5	500	0.2	160	130	22	2	MERV 8	16.9	300	0.22	2	900	1,2,3,4

#### UNIT SCHEDULE MATCHED CAPACITY AMB AIR ELECTRICAL MODEL OPERATING VOLT PH MCA MOCP EER WEIGHT (LBS) TEMP UNIT MBH REMARKS CU-C121A MITSUBISHI PUY-A18NHA7 DSS-C121A 18 11 20 10 175 208 95 1,2

1. PROVIDE LOW AMBIENT KIT DOWN TO -20°F. AND ALL MANUFACTURERS RECOMMENDED ACCESSORIES. COMPRESSOR SHALL BE INVERTER DRIVEN. 2. PROVIDE REFRIGERANT LINES AND ROUTING PER MANUFACTURERS RECOMMENDATIONS. REF. R-410A.

# VAV TERMINAL SCHEDULE

UNIT			INLET	CLG CFM	CLG CFM	HTG CFM	TERM	RAD	DISCH	HEATI						
NO.	MANUF.	MODEL NO.	SIZE	MAX	MIN	MAX	S.P.	NC	NC	EAT	MBH	GPM	WPD	EWT	LWT	REMARKS
VAV-C111	PRICE	SDV	6	135	50	50	0.5"	20	21	55	1.4	0.5	5	160	130	1,2,3
VAV-C121	PRICE	SDV	8	395	120	120	0.5"	24	25	55	4.2	0.5	5	160	130	1,2,3
VAV-D100	PRICE	SDV	10	730	220	220	0.5"	23	24	55	15.0	1.0	5	160	130	1,2,3
VAV-D101	PRICE	SDV	6	290	90	90	0.5"	20	21	55	2.6	0.5	5	160	130	1,2,3
VAV-D103	PRICE	SDV	6	300	90	90	0.5"	20	21	55	2.1	0.5	5	160	130	1,2,3
VAV-D111	PRICE	SDV	6	275	90	90	0.5"	20	21	55	3.0	0.5	5	160	130	1,2,3
VAV-D112	PRICE	SDV	6	250	80	80	0.5"	20	21	55	2.4	0.5	5	160	130	1,2,3
VAV-D113	PRICE	SDV	8	450	140	155	0.5"	24	25	55	10.7	0.7	5	160	130	1,2,3
VAV-D114	PRICE	SDV	8	410	130	165	0.5"	24	25	55	11.5	0.8	5	160	130	1,2,3
VAV-D116	PRICE	SDV	8	420	130	175	0.5"	24	25	55	12.2	0.9	5	160	130	1,2,3
VAV-D121	PRICE	SDV	6	225	70	70	0.5"	20	21	55	1.9	0.5	5	160	130	1,2,3
VAV-D122B	PRICE	SDV	6	250	80	130	0.5"	20	21	55	9.0	0.6	5	160	130	1,2,3
VAV-D124	PRICE	SDV	6	300	90	90	0.5"	20	21	55	2.6	0.5	5	160	130	1,2,3
VAV-D126	PRICE	SDV	6	240	80	80	0.5"	20	21	55	2.4	0.5	5	160	130	1,2,3
VAV-D127	PRICE	SDV	10	960	290	290	0.5"	23	24	55	14.2	1.0	5	160	130	1,2,3
VAV-D131	PRICE	SDV	6	160	50	50	0.5"	20	21	55	1.3	0.5	5	160	130	1,2,3
VAV-D133	PRICE	SDV	6	100	30	30	0.5"	20	21	55	0.8	0.5	5	160	130	1,2,3
VAV-D135	PRICE	SDV	6	330	100	100	0.5"	24	25	55	2.5	0.5	5	160	130	1,2,3
VAV-D136	PRICE	SDV	6	175	60	60	0.5"	20	21	55	1.7	0.5	5	160	130	1,2,3
VAV-D147	PRICE	SDV	10	760	230	230	0.5"	23	24	55	12.7	0.9	5	160	130	1,2,3
VAV-D202	PRICE	SDV	6	170	60	60	0.5"	20	21	55	3.9	0.5	5	160	130	1,2,3
VAV-D203	PRICE	SDV	6	105	40	40	0.5"	20	21	55	1.1	0.5	5	160	130	1,2,3
VAV-D204	PRICE	SDV	6	75	30	30	0.5"	20	21	55	0.9	0.5	5	160	130	1,2,3
VAV-E101	PRICE	SDV	6	175	60	60	0.5"	20	21	55	1.5	0.5	5	160	130	1,2,3
VAV-E116	PRICE	SDV	6	110	40	40	0.5"	20	21	55	1.0	0.5	5	160	130	1,2,3
VAV-E117	PRICE	SDV	6	110	40	40	0.5"	20	21	55	1.0	0.5	5	160	130	1,2,3
VAV-E129	PRICE	SDV	6	190	60	60	0.5"	20	21	55	1.5	0.5	5	160	130	1,2,3
VAV-E201	PRICE	SDV	6	175	60	60	0.5"	20	21	55	1.8	0.5	5	160	130	1,2,3
VAV-E216	PRICE	SDV	6	115	40	40	0.5"	20	21	55	1.2	0.5	5	160	130	1,2,3
VAV-E217	PRICE	SDV	6	115	40	40	0.5"	20	21	55	1.2	0.5	5	160	130	1,2,3
VAV-E227	PRICE	SDV	6	140	50	50	0.5"	20	21	55	1.5	0.5	5	160	130	1,2,3

REMARKS:

2. EXT. S.P. INCLUDES A COIL APD. 3. COIL CAPACITIES ARE BASED ON 70% WATER/30% PROPYLENE GLYCOL.

## FAN SCHEDULE

FAN							TIP	мото	R	ELEC.			OPER. WT.	
NO.	MANUF.	MODEL NO.	ТҮРЕ	CFM	S.P.	RPM	SPEED	HP	BHP	VOLTS	PH	SONES	(LBS)	REMARKS
EF-A103	GREENHECK	GB-220	BELT DRIVE, PRV	3,885	0.75	741		1	0.88	460	3	12.7	130	1,2,3
EF-B104	GREENHECK	GB-120	BELT DRIVE, PRV	1,000	0.3	1033		1/4	0.13	115	1	6.9	60	1,2,8
EF-B106	GREENHECK	GB-120	BELT DRIVE, PRV	1,000	0.3	1033		1/4	0.13	115	1	6.9	60	1,2,3
EF-B115	GREENHECK	SP-B90	DD, CEILING	75	0.25	700		20W	0.01	115	1	1.3	10	7
EF-B120	GREENHECK	GB-180	BELT DRIVE, PRV	2,780	0.5	894		3/4	0.51	115	1	10.1	100	1,2,3
EF-C105	GREENHECK	GB-130-4	BELT DRIVE, PRV	1,000	0.35	961	3301	1/4	0.12	115	1	6.9	86	1,2,3
EF-C112	GREENHECK	FJI-12-BI-X	UTILITY SET, FUME	1,600	0.5	1744	5594	3/4	0.4	115	1	13.6	273	1,2,6
EF-C113	GREENHECK	FJI-24-BI-X	UTILITY SET, FUME	7,700	3.85	1445	9269	15	12.1	460	3	31	1074	1,2,6,9
EF-C113B	GREENHECK	GB-140-5	BELT DRIVE, PRV	1,750	0.35	1118	4281	1/2	0.31	115	1	9.7	145	1,2,3
EF-C116	GREENHECK	GB-200-10	BELT DRIVE, PRV	3,600	0.35	785	4396	1	0.6	460	3	11.0	184	1,2,3
EF-C123	GREENHECK	GB-120	BELT DRIVE, PRV	1,000	0.3	1033		1/4	0.13	115	1	6.9	60	1,2,3
EF-D110	GREENHECK	GB-098	BELT DRIVE, PRV	300	0.35	1029		1/6	0.06	115	1	4.7		1,2,3
EF-E122	GREENHECK	GB-130-4	BELT DRIVE, PRV	1,200	0.35	1061	3645	1/4	0.16	115	1	8.1	90	1,2
EF-E124	GREENHECK	FJI-12-BI-X	UTILITY SET, FUME	1,085	0.85	1525	4892	1/2	0.29	115	1	10.4	286	1,2,6
EF-E125	GREENHECK	GB-130-4	BELT DRIVE, PRV	1,200	0.35	1061	3645	1/4	0.16	115	1	8.1	90	1,2
EF-E127	GREENHECK	GB-130-4	BELT DRIVE, PRV	1,200	0.35	1061	3645	1/4	0.16	115	1	8.1	90	1,2
EF-E205	GREENHECK	GB-160-5	BELT DRIVE, PRV	2,000	0.5	956	4162	1/2	0.37	115	1	10.8	145	1,2,3
EF-E220	GREENHECK	GB-130-4	BELT DRIVE, PRV	1,200	0.35	1061	3645	1/4	0.16	115	1	8.1	90	1,2
EF-E222	GREENHECK	FJI-12-BI-X	UTILITY SET, FUME	1,085	0.85	1525	4892	1/2	0.29	115	1	10.4	286	1,2,6
EF-E223	GREENHECK	GB-130-4	BELT DRIVE, PRV	1,200	0.35	1061	3645	1/4	0.16	115	1	8.1	90	1,2
EF-E225	GREENHECK	GB-130-4	BELT DRIVE, PRV	1,200	0.35	1061	3645	1/4	0.16	115	1	8.1	90	1,2
EF-KH-1A	GREENHECK	CUBE-180-15	BELT DRIVE, PRV UPBLAST	3,100	1.0	1162		1.5	0.98	460	3		135	1,2,5
EF-KH-1B	GREENHECK	CUBE-180-15	BELT DRIVE, PRV UPBLAST	3,100	1.0	1162		1.5	0.98	460	3		135	1,2,5
TF-1A	GREENHECK	BSQ-140-15	BELT DRIVE, IN-LINE	2,790	0.75	1717		1.5	1.05	460	3		155	1,2,4
TF-1B	GREENHECK	BSQ-140-15	BELT DRIVE, IN-LINE	2,790	0.75	1717		1.5	1.05	460	3		155	1,2,4
TF-A103A	GREENHECK	BDF-100	BELT DRIVE, IN-LINE	1,400	0.35	656		1/3	0.24	115	1	6.6	100	1,2,3,4
TF-A103B	GREENHECK	BDF-100	BELT DRIVE, IN-LINE	1,550	0.35	680		1/3	0.29	115	1	7.2	100	1,2,3,4
TF-C113	GREENHECK	BSQ-300-20	BELT DRIVE, IN-LINE	7,700	0.5	568	4536	2	1.59	460	3	14.4	751	1,4
RF-6	GREENHECK	GB-420-VG-30	BELT DRIVE, PRV	12,000	0.5	388	4297	3	2.12	460	3	13.1	418	1,2,3,11
RF-7	GREENHECK	GB-330-VG-20	BELT DRIVE, PRV	6,600	0.5	408	3848	2	1.02	460	3	9.5	266	1,2,3,11
RF-8	GREENHECK	GB-540-VG-30	BELT DRIVE, PRV	14,000	0.5	274	3879	3	2.34	460	3	12.9	613	1,2,3,11
RF-9	GREENHECK	GB-540-VG-30	BELT DRIVE, PRV	21,000	0.25	280	3962	3	2.65	460	3	13.9	613	1,2,3,11
RF-10	GREENHECK	G-240-VG	DIRECT DRIVE, PRV	3,600	0.5	597	3828	2	0.53	208	1	8.6	250	2,3,10

REMARKS:

1. BELT DRIVE FAN, PROVIDE PREMIUM EFF. MOTOR, INTEGRAL ELECTRICAL DISCONNECT. 2. PROVIDE INSULATED ROOF CURB WITH BACKDRAFT DAMPER, BIRDSCREEN.

3. FAN CONTROLLED BY BAS. 4. PROVIDE ANTI-VIBRATION HANGING KIT.

5. PROVIDE GREASE CUP AND EXTENDED ROOF CURB WITH HINGED FAN BASE. CURB SHALL BE NON-VENTED. SEE DETAIL. 6. FAN SHALL BE EXPLOSION PROOF, HAVE A NON SPARKING WHEEL AND HI-PRO-Z COATING. PROVIDE DISCHARGE STACK WITH LOW PRESSURE DROP FLIP UP RAIN CAP. EXTEND 60" ABOVE ROOF.

7. PROVIDE SINGLE POINT POWER CONNECTION AND INTEGRAL ELECTRICAL DISCONNECT. ROUTE EXHAUST DUCT THRU ROOF TO GOOSENECK.

8. FAN CONTROLLED THERMOSTAT WITH MANUAL OVERRIDE SWITCH. 9. FAN CONTROLLED BY VFD.

10. DIRECT DRIVE FAN, PROVIDE ECM MOTOR, SINGLE POINT POWER CONNECTION AND INTEGRAL ELECTRICAL DISCONNECT. 11. PROVIDE ECM MOTOR.

# KITCHEN HOOD SCHEDUI E

		000 30		JULE										
HOOD								STATIC	EXHAUST		UL	MATCHED	OPER. WT.	
NO.	MANUF.	MODEL NO.	TYPE	LENGTH	WIDTH	HEIGHT	CFM	(IN. W.C.)	COLLAR	MATERIAL	LISTING	FAN	(LBS)	REMARKS
KH-1A	GREENHECK	GXEW-186-S	I	186	66	24	3100	0.541	2(9X15)	430 S.S.	710	EF-KH-1A	550	ALL
KH-1B	GREENHECK	GXEW-186-S	I	186	66	24	3100	0.541	2(9X15)	430 S.S.	710	EF-KH-1B	550	ALL
REMARK	S:													

1. PROVIDE X-TRACTOR STAINLESS STEEL FILTER OR EQUAL, LEDLIGHT FIXTURES, 3" BACK AIR SPACE, GREASE GUTTER AND DRAIN. 2. PROVIDE WET CHEMICAL FIRE SUPPRESSION SYSTEM. SEE SPEC FOR MORE DETAIL.

3. PROVIDE 14"X198" STAINLESS STEEL FRONT MOUNTED PLENUM WITH PERFORATED GRILLE, 2790 CFM MAX CFM.

4. PROVIDE STAINLESS STEEL CEILING ENCLOSURE. 5. HOOD SHALL BE MOUNTED 80" AFF.

7. PROVIDE EXHAUST AIR BALANCING BAFFELS. 8. PROVIDE MOTOR CONTROL CENTER THAT CONTROLS EXHAUST FAN AND TRANSFER FAN. PROVIDE TEMPERATURE INTERLOCKS THAT ARE COMPLIANT WITH THE IMC FOR AUTOMATIC OPERATION OF FANS.

1. SOUND DATA SHALL BE TAKEN FROM ARI STANDARDS 880 (LATEST PUBLISHED DATA @ 1.5" DELTA P.)

6. PROVIDE 12" UTILITY CABINET WITH ANSUL WET CHEMICAL ANSUL SYSTEM FIRE SUPPRESSION SYSTEM.

![](_page_46_Picture_46.jpeg)

![](_page_47_Figure_0.jpeg)

![](_page_47_Figure_1.jpeg)

![](_page_47_Figure_2.jpeg)

![](_page_47_Picture_3.jpeg)

![](_page_48_Figure_0.jpeg)

QTY	DESCRIPTION	COLD WATER SIZE (IN)	HOT WATER SIZE (IN)	WATER ROUGH-IN HEIGHT (IN)	INDIRECT DRAIN SIZE (IN)	DIRECT DRAIN SIZE (IN)	DRAIN ROUGH-IN HEIGHT (IN)	GAS CONNECTION SIZE (IN)	GAS SUPPLY BTU'S	GAS ROUGH-IN HEIGHT (IN)	EQUIPMENT REMARKS
1	HOT FOOD SERVING COUNTER	-	-	-	1	-	-	-	-	-	EXTEND INDIRECT DRAIN TO FLOOR SINK
1	HOT FOOD SERVING COUNTER	-	-	-	1	-	-	-	-	-	EXTEND INDIRECT DRAIN TO FLOOR SINK
2	HOT AND COLD PAN SERVING COUNTER	-	-	-	1	-	-	-	-	-	EXTEND INDIRECT DRAIN TO FLOOR SINK
3	DOUBLE DECK CONVECTION OVEN	-	-	-	-	-	-	3/4	144,000 EA.	32	UTILITIES LISTED ARE FOR ONE DOUBLE DECK OVEN, THERE ARE 3 DOUBLE DECK OVENS TOTAL, GAS HOSES BY SECTION 11400
1	FUTURE, DOUBLE DECK CONVECTION OVEN	-	-	-	-	-	-	3/4	144,000 EA.	32	FUTURE ITEM, UTILITIES LISTED ARE FOR ONE DOUBLE DECK OVEN
1	DOUBLE STACKED COMBIOVENS W/ INSTALLATION KIT	2@3/4	-	-	2 @ 2	-	-	2 @ 3/4	2 @ 106,500	32	ONE DOUBLE STACKED COMBIOVEN, EXTEND FILTERED WATER FROM ITEM 27.B FOR ONE WATER CONNECTION PER DECK, EXTEND INDIRECT COPPER DRAIN TO
1	WATER TREATMENT SYSTEM	3/4	-	48	-	-	-		-	-	EXTEND FILTERED WATER TO WATER INLET ON ITEM 27.A. ONE CONNECTION PER DECK.
4	(BY OTHERS) HAND SINKS	1/2	1/2	18	-	2	24	-	-	-	VERIFY REQUIREMENTS WITH SUPPLIER
1	KETTLE WITH DOUBLE PANTRY FAUCET AND STAND WITH DRAIN DRAWER	1/2	1/2	24	1-1/4	-	-		-	-	EXTEND INDIRECT DRAIN FROM DRAWER DRAIN PAN TO FLOOR SINK
1	BRAISING PAN WITH DOUBLE PANTRY FAUCET	1/2	1/2	24	-	-	-	3/4	200,000	32	GAS HOSE BY SECTION 11400
1	FLOOR TROUGH	-	-	-	-	4	UFB		-	-	SEE FSEC SPEC. SHEET FOR DRAIN CONNECTION AND INSTALLATION REQUIREMENTS FOR RECESSED FLOOR TROUGH
(1 LOT)	(BY OTHERS) EXHAUST HOOD, FANS, MAKE-UP AIR AND FIRE SUPPRESSION SYSTEM	-	-	-	-	-	-		-	-	REVIEW UTILITY REQUIREMENTS WITH SUPPLIERS
1	WORK TABLE WITH DOUBLE SINK, FAUCET, LEVER DRAIN & WALL MOUNTED SHELF	1/2	1/2	16	2	-	-	-	-	-	EXTEND INDIRECT DRAIN TO FLOOR SINK
1	2HP DISPOSER FOR SINK AND CONTROL BOX. ALL MOUNTED ON ITEM 38	1/2	-	16	-	3	10	-	-	-	DISPOSER MOUNTED ON ITEM 38
1	PRE-RINSE UNIT	1/2	1/2	16	-	-	-	-	-	-	· · · · · · · · · · · · · · · · · · ·
1	THREE COMPARTMENT SINK WITH TWO FAUCETS & THREE LEVER DRAINS	(2) 1/2	(2) 1/2	16	-	(3) 2	-		-	-	TWO FAUCETS. P.C. TO MANIFOLD THREE DRAINS AND EXTEND TO GREASE TRAP SUPPLIED AND INSTALLED BY PLUMBING CONTRACTOR
1	SOILED DISHTABLE WITH SINK AND CROSS DRAIN	-	-	-	1-1/2	-	-	-	-	-	EXTEND INDIRECT DRAIN TO FLOOR SINK
1	2 H.P. DISPOSER W/ CONTROL PANEL	1/2	-	16	-	3	10	-	-	-	DISPOSER MOUNTED ON ITEM 52
1	CONVEYOR DISHWASHER MOTORS, CONTROLS, BOOSTER AND TANK HEAT	1/2	1/2	12	2	-	-	-	-	-	PROVIDE HOT WATER TO DISHMACHINE, COLD WATER TO INTEGRAL DRAIN WATER TEMPERING KIT. EXTEND INDIRECT COPPER DRAIN TO FLOOR SINK.
2	WALK-IN COOLER EVAPORATORS	-	-	-	1	-	-	-	-	-	TWO UNITS IN WALK-IN. STUB DOWN FROM ABOVE TO TWO EVAPORATORS INSIDE WALK-IN. FSEC TO EXTEND INDIRECT COPPER DRAIN TO FLOOR SINK.
2	WALK-IN FREEZER EVAPORATORS	-	-	-	1 EA.	-	-	-	-	-	TWO UNITS IN WALK-IN. STUB DOWN FROM ABOVE TO TWO EVAPORATORS INSIDE WALK-IN. FSEC TO EXTEND INDIRECT COPPER DRAIN TO FLOOR SINK. FSEC TO
1	CLEAN DISHTABLE WITH CROSS DRAIN, LIMIT SWITCH AND DISH RACK SHELF	-	-	-	1-1/2	-	-	-	-	-	EXTEND INDIRECT DRAIN TO FLOOR SINK
STA	INLESS STEEL PC = PLUMBING CONTRACTOR GC = GENER	AL CONTR	ACTOR	DFA =	DOWN FRO	MABOVE	C.P.	= HOOD	CONTROL CENT	FER PANEL	FSEC = FOOD SERVICE EQUIPMENT CONTRACTOR

OLNLIAL SHELT NOTES
IG SPACE AVAILABLE REQUIRES COORDINATION WITH OTHER HE CONTRACTORS SHALL PROVIDE ALL OFFSETS AND RELOCATE RED TO COORDINATE THE INSTALLATION OF ALL MATERIALS AND T WITH OTHER TRADES.

![](_page_49_Figure_0.jpeg)

![](_page_50_Figure_0.jpeg)

GENERAL SHEET NUTES
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THE CEILING SPACE AVAILABLE REQUIRES COORDINATI
TRADES. THE CONTRACTORS SHALL PROVIDE ALL OFFS
AS REQUIRED TO COORDINATE THE INSTALLATION OF A
EQUIPMENT WITH OTHER TRADES.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

![](_page_50_Figure_5.jpeg)