

**ADDENDUM  
NO. 1**

**May 26th, 2023**

**Carmel High School Stadium South Support Building**

E. 136<sup>th</sup> Street  
Carmel, IN 46032

**TO: ALL BIDDERS OF RECORD**

This Addendum forms a part of and modifies the Bidding Requirements, Contract Forms, Contract Conditions, Specifications, and Drawings dated December 13, 2022, by Fanning Howey. Acknowledge receipt of the Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of Pages ADD. 1-1 through 1-2 and attached Fanning Howey Associates, Inc. Addendum No. 1 dated May 25, 2023 consisting of 1 page, revised Specification Section 10 82 13 – Rooftop Equipment Screens, and revised drawings M5.01 and E1.1.

**A. SPECIFICATION SECTION 00 00 10 – TITLE PAGE**

- a. Replace sheet in its entirety

**B. SPECIFICATION SECTION 01 12 00 – MULTIPLE CONTRACT SUMMARY**

1. Paragraph 3.03 Bid Categories

**A. Bid Category No. 1 – General Trades**

Add the following Clarifications

21. All top of wall mineral insulation around steel joist or beams at masonry walls by the Bid Category No. 1 General Trades contractor
22. All work shown in the west parking lot on sheet GD1.6 and sheet G1.06. Reference the attached sheet.

**B. Bid Category No. 2 – Masonry**

Add the following Clarifications

7. All CMU to be Normal Weight regardless of being below grade or above grade
8. All top of wall mineral insulation around steel joist or beams at masonry walls is by the Bid Category No. 1 General Trades contractor
9. All air barrier is by Bid Category No. 2 Masonry contractor.
10. All masonry wall panels not called out on sheet S1.02 are to be “P1”

**F. Bid Category No. 6 – Electrical and Technology**

Add the following Clarifications

12. Utilize existing underground conduit back to

**C. SPECIFICATION SECTION 01 21 00 -ALLOWANCES**

1. Paragraph 3.01 Product Allowance

Add the following Product Allowances

- A. Bid Category No. 1 General Trades Exterior Signage \$120,000
- B. Bid Category No. 1 General Trades Interior Signage \$5,000

**PROJECT:** Carmel High School Stadium South Support Building  
East 136<sup>th</sup> Street  
Carmel, IN 46032

**TSC PROJECT NO.:** 220120.04

**A/E PROJECT NO.:** 220136.00

**OWNER:** Carmel Clay Schools  
5201 E. Main Street  
Carmel, IN 46033

**ARCHITECT/ENGINEER:** Fanning Howey Associates

**DATED:** May 8, 2023

**PRE-BID CONFERENCE/SITE EXAMINATION:** May 23, 2023  
9:00 a.m.  
Microsoft TEAMS

**BIDS RECEIVED:** June 6, 2023  
3:00 p.m.

**BIDDERS' CONTACTS:**

**ARCHITECT/ENGINEER:**  
Fanning Howey Associates  
350 East New York Street  
Indianapolis, In 46204  
Mary Krupinski  
Phone: 317-848-0966 ex: 10317

**CONSTRUCTION MANAGER:**  
The Skillman Corporation  
3834 S. Emerson Ave Building A  
Indianapolis, In 46203  
Project Manager: Tyler Barker  
Phone: 317-474-2288



**GENERAL NOTES**

- SEE DRAWING G00.1 FOR GENERAL NOTES AND ADDITIONAL LEGEND.
- TOPOGRAPHIC CONDITIONS AND EXISTING UTILITIES SHOWN WERE PROVIDED BY CEC CIVIL & ENVIRONMENTAL CONSULTANTS DATED MAY 17, 2022. THE ENGINEER MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED.
- CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE PROJECT AREA INCLUDING UNDERGROUND UTILITY CONDITIONS, LOCATION AND DEPTH PRIOR TO ANY OTHER SITE CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER.

**SITE KEYNOTES (SOUTH BUILDING)**

- 1 ADA ACCESSIBLE PARKING SIGN - SEE DETAIL PG4.11
- 7 CONCRETE STRAIGHT CURB - SEE DETAIL HG4.11
- 8 CURB TO CURB CONNECTION - SEE DETAIL JG4.11
- 10 PARKING BUMPER - PER DETAIL QG4.11
- 12 LAWN AREA - SEE LANDSCAPE PLANS
- 17 4" WIDE WHITE PAVEMENT MARKING - PER SPECIFICATIONS
- 18 4" WIDE BLUE PAVEMENT MARKING - PER SPECIFICATIONS
- 20 ASPHALT PAVEMENT - PER DETAIL LG4.11
- 21 4" WIDE BLUE PAVEMENT STRIPE @ 3"-0" AT 45 DEGREES - PER DETAIL NG4.11
- 22 WHITE ADA LOGO ON BLUE BACKGROUND - PER DETAIL OG4.11
- 25 SLOPE NEW PAVEMENT AWAY FROM CURB AND MATCH EXISTING EDGE OF PAVEMENT GRADE, SLOPE AT 1.5% MIN. / 2.0% MAX.
- 30 4" WIDE WHITE PAVEMENT STRIPE AT 3'-0" O.C. AT 45° ANGLE

**PROPOSED SITE LEGEND**

- APPROXIMATE LIMITS OF CONSTRUCTION
- BUILDING
- CONCRETE SIDEWALK/PAVEMENT
- ASPHALT PAVEMENT
- SEEDED LAWN

**CARMEL STADIUM SOUTH SUPPORT BUILDING**

E 136th St, Carmel, IN 46032

CARMEL CLAY SCHOOLS



ARCHITECT

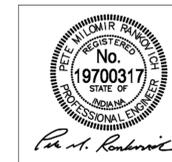


317.848.0966 WWW.FHAI.COM  
380 E NEW YORK ST #200, INDIANAPOLIS, IN 46204

CONSULTANT



**CONSTRUCTION DOCUMENTS**

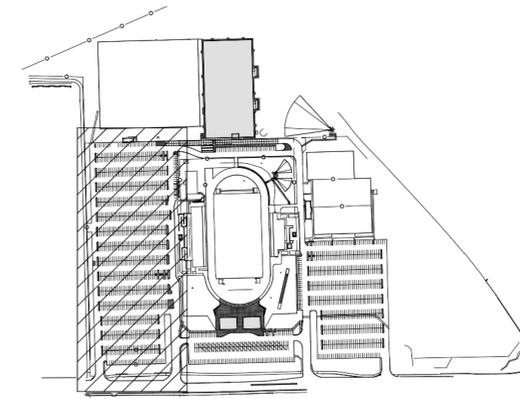
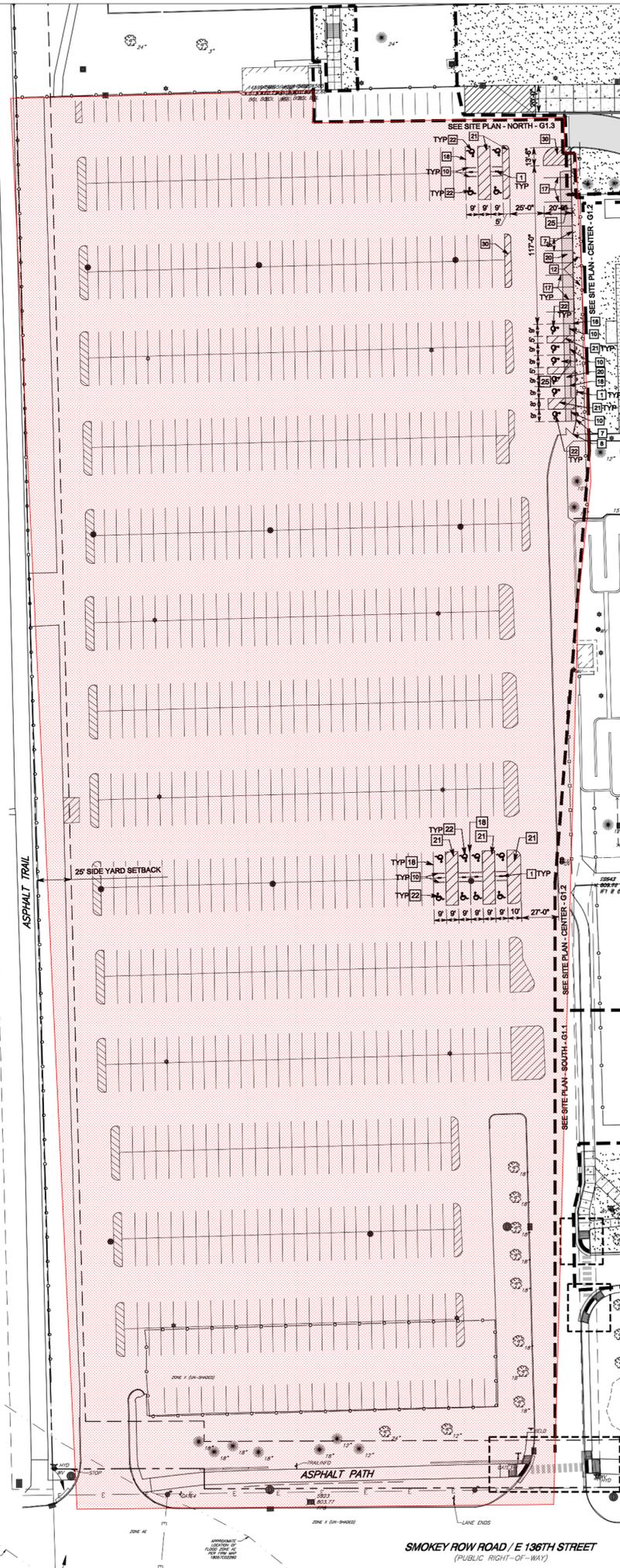


PROJECT MANAGER: PMR  
DRAWN BY: ARS  
PROJECT NUMBER: 220138.00  
REV. ISSUE DATE: 04.28.2023

REV. NO.	DESCRIPTION	DATE

SITE PLAN - WEST

**G1.6**



LEGEND

Drawing Date: 04/28/23, 10:11 AM, C:\Users\arshah\OneDrive - FanningHowey Associates, Inc. Desktop\220138.00 - G1.6 - Site Plan.dwg  
Plotted By: cadillac Time of Plot: 4/28/23 - 8:54am Last Edited: 4/25/23 - 5:00pm



**Know what's below. Call before you dig.**  
Call 811 or 1-800-380-6644 before you begin any digging project. Call 48 hours or 2 working days before you dig. It's Fast, It's Easy and It's the Law in the state of Indiana!

**CAUTION !!**

THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLAN ARE BASED UPON ABOVE GROUND EVIDENCE (INCLUDING, BUT NOT LIMITED TO, MANHOLES, INLETS, VALVES, AND MARKS MADE UPON THE GROUND BY OTHERS) AND ARE SPECULATIVE IN NATURE. THERE MAY ALSO BE OTHER EXISTING UNDERGROUND UTILITIES FOR WHICH THERE IS NO ABOVE GROUND EVIDENCE OR FOR WHICH NO ABOVE GROUND EVIDENCE WAS OBSERVED. THE EXACT LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHALL BE VERIFIED BY CONTRACTOR PRIOR TO ANY AND ALL CONSTRUCTION.

ADDENDUM NO. 1

Carmel Stadium South Support Building

Project No. 220136.00

Carmel Clay Schools  
Carmel, Indiana

Index of Contents

Addendum No. 1, 4 items, 1 page  
Revised Project Manual Sections: 10 82 13 – Rooftop Equipment Screens  
Revised Drawing Sheets: M5.01 and E1.1

Date: May 25, 2023

FANNING/HOWEY ASSOCIATES, INC.  
ARCHITECTS/ENGINEERS/CONSULTANTS



Paul A. Miller, License No. AR10800161  
Expiration Date: 12/31/2023

TO: ALL BIDDERS OF RECORD

ADDENDUM NO. 1 to Drawings and Project Manual, dated April 26, 2023 for Carmel High School South Support Building for Carmel Clay Schools, 5201 East Main Street, Carmel, Indiana 46033; as prepared by Fanning/Howey Associates, Inc., Indianapolis, Indiana.

This Addendum shall hereby be and become a part of the Contract Documents the same as if originally bound thereto.

The following clarifications, amendments, additions, revisions, changes, and modifications change the original Contract Documents only in the amount and to the extent hereinafter specified in this Addendum.

Each bidder shall acknowledge receipt of this Addendum in his proposal or bid.

NOTE: Bidders are responsible for becoming familiar with every item of this Addendum. (This includes miscellaneous items at the very end of this Addendum.)

RE: ALL BIDDERS

ITEM NO. 1. REVISED PROJECT MANUAL SECTIONS

- A. Section 10 82 13 – Rooftop Equipment Screens has been revised, dated 5/25/23, and is included with and hereby made a part of this Addendum.

ITEM NO. 2. PROJECT MANUAL, SECTION 07 54 00 – THERMOPLASTIC MEMBRANE ROOFING

- A. Add 2.4, K., as follows:

- “K. Square PVC Roof Flashing: Fabricated from manufacturer’s standard single ply PVC sheet flashing. Provide with base flange that extends a minimum of 5 inches onto the main roof membrane on all four sides.  
1. Location: Rooftop Equipment Screen support structure.”

ITEM NO. 3. ACCEPTABLE MANUFACTURERS

The following manufacturers are to be considered acceptable manufacturers (suppliers and fabricators) for the Sections of the Specifications listed. Listed manufacturers are required to bid on products equal in type and design, size, function, and quality to that originally specified. Final decision as to equality of products specified versus those proposed shall be made by the Architect.

Section 09 67 23 – Decorative Resinous Flooring  
- APF Polymer Surfaces, Phoenix, Arizona

ITEM NO. 4. REVISED DRAWING SHEETS

- A. Drawing Sheets: M5.01 and E1.1 have been revised, dated 5/25/23, and are included with and hereby made a part of this Addendum. These Drawings supersede the original documents.

END OF ADDENDUM

## SECTION 10 82 13 – ROOFTOP EQUIPMENT SCREENS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes: Stand-alone rooftop equipment screens and supporting steel framework.
  - 1. Screens shall be designed to attach to the roof structure and not the equipment being screened.

#### 1.2 COORDINATION

- A. Coordinate work with other trades and installation of roofing materials to avoid damage to installed insulation and membrane materials.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product specified.
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- B. Shop Drawings: For screen units and accessories. Include plans; elevations; sections; and details showing profiles, angles, and spacing of elements. Indicate layout heights, component connection details, and details of interface with adjacent construction.
- C. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for units with factory-applied color finishes.
- D. Delegated-Design Submittal: For installed products indicated to comply with performance requirements and design criteria, including structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

#### 1.4 QUALITY ASSURANCE

- A. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of kind indicated. Engineering services are defined as those performed for installations of grilles and screens that are similar to those indicated for this Project in material, design, and extent.
- B. Welding Standards: As follows:
  - 1. Comply with AWS D1.2, "Structural Welding Code--Aluminum."
  - 2. Comply with AWS D1.1, "Structural Welding Code – Steel".
  - 3. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.
- C. Pre-Installation Meeting: Conduct meeting at Project site.
  - 1. Review structural load limitations.

#### 1.5 DELIVER, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly indicating manufacturer and material.

- B. Storage and Handling: Protect materials and finishes during handling and installation to prevent damage.
1. Handling: Use a forklift or crane to move material. Do not lift the bundles by metal bands.
    - a. Fork Lift: Spread the forks as far as possible to balance the load. Drive slowly when moving long bundles over uneven surfaces to avoid tipping the load.
    - b. Crane: Position the canvas sling straps so that the space between the straps is at least 1/3 the length of the bundle. Use sling straps with looped ends running one end of the strap through the loop at the other end to cinch the bundle when lifted. When setting the load on the roof, put wood blocks under to protect the roof and allow space to remove the sling straps.
    - c. Roof Placement: Spread the bundles and crates out as much as possible to avoid overloading the roof structure. Place the material directly over major supports such as beams or trusses.
    - d. Position bundles of tubing parallel to the slope of the roof and block prior to opening to prevent the tubing from rolling down the roof slope when unbundled.

## 1.6 FIELD CONDITIONS

- A. Field Measurements: Verify supports and adjoining construction by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
1. Established Dimensions: Where field measurements cannot be made without delaying the Work, guarantee dimensions and proceed with fabricating grilles and screens without field measurements. Coordinate construction to ensure that actual opening dimensions correspond to established dimensions.

## 1.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of framing system assemblies that fail in materials or workmanship within specified warranty period.
1. Failures include, but are not limited to, the following:
    - a. Structural failures, including rupturing, cracking, or puncturing.
    - b. Deterioration of metals and other materials beyond normal weathering.
  2. Warranty Period: Twenty (20) years from date of Substantial Completion.
- B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace wall panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
    - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
    - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
  2. Finish Warranty Period: 10 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.
  2. Basis-of-Design Product: The design for equipment screens is based on products named. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.

- B. Products of other manufacturers will be considered for acceptance provided they equal or exceed the material requirements and functional qualities of the specified product. The "Substitution Request Form" Sample sign, and complete technical data for evaluation must accompany requests for A/E's approval. All materials for evaluation must be received by the Project Manager and Specification Department at least 10 days prior to bid due date. Additional approved manufacturers will be issued by Addendum.

## 2.2 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design screens and attachment, including comprehensive engineering analysis by a qualified professional engineer, using structural performance requirements and design criteria indicated.
- B. Design Criteria
1. Manufacturer is responsible for the structural design of all materials, assembly and attachments to resist snow, wind, suction and uplift loading at any point without damage or permanent set.
  2. Design loads complying with Building Code for site location and building height.
  3. Design to resist ASCE-7 – Minimum Design Loads for Buildings and Other Structures, using the latest published ASCE version applicable in jurisdiction.
  4. Design all materials, assembly, and attachments to resist snow, wind, suction, and uplift loading at any point without damage or permanent set.
- C. All welds to be performed by an AWS certified welder.

## 2.3 ROOFTOP EQUIPMENT SCREEN ASSEMBLY

- A. Basis-of-Design: RoofScreen Manufacturing.
- B. Materials:
1. Square Base Supports: Weldments fabricated from cold rolled steel conforming to ASTM A 1008, fabricated with pre-punched holes in base plate for fastening to roof structure. After fabrication, apply minimum 2 to 4 mil baked on powder coat primer.
    - a. **Height of post supports to maintain 12 inch clearance from finished surface of roof, provide base support extensions as required.**
  2. Square Base Cap: Weldments fabricated from AISI Type 304 stainless steel with mill finish, and fabricated to overlap base support and flashing boot a minimum of 2 inches. Provide moment resisting adjustable connection to attach framing to base cap.
    - a. **Base Cap Gasket: EPDM with self-adhesive closed cell foam.**
  - ~~3. Square PVC Roof Flashing: Fabricated from 60 mil, white, singly ply PVC sheet conforming to ASTM D 4434. Provide with base flange that extends a minimum of 5 inches onto the roof surface on all four sides.
    - a. ~~Riser shall be tapered to allow easy fit over square base supports with minimal gap at top of flashing.~~
    - b. ~~Hot weld all seams for watertight installation.~~~~
  4. Framing: Carbon steel structural tubing in manufacturer's standard sizes as required to meet performance and structural requirements.
    - a. Provide galvanized coating conforming to ASTM A 1057.
    - b. Provide wall thickness as determined by structural calculations.
    - c. **Connectors for round tube steel fabricated from AISI Type 304 stainless steel with mill finish. Connectors for square tube steel fabricated from ASTM A36 Mild Steel, G90 Hot Dipped Galvanized.**
  5. Steel Z Sections: Steel sheet conforming to ASTM A653, Class SS, with a G90 hot-dip galvanized coating.
  6. Steel Hat Channel: Steel sheet conforming to ASTM A653, Class SS, with a G90 hot-dip galvanized coating.
  7. Hardware:
    - a. Bolts, nuts, and washers: 18-8 stainless steel.
    - b. Self-Drilling Screws: Carbon steel with factory applied protective coating conforming to ASTM B117 salt spray testing.

- C. Screen Panel:
1. Basis of Design: VisionGuard L20 Slatted Louver by RoofScreen Manufacturing.
    - a. Flat face blades, 90 degrees, continuous in horizontal orientation.
    - b. Louver Blade: 0.100 inch thick extruded aluminum, ASTM B 221, Alloy 6063-T6.
      - 1) Height: 5-1/2 inches.
      - 2) Spacing: 6 inches on center with a 1/2 inch gap.
    - c. Louver Clip: 0.125 thick extruded aluminum, ASTM B 221, Alloy 6063-T6.
    - d. Vertical Framing: 3 inch by 3 inch x 0.188 inch thick extruded aluminum, ASTM B 221, Alloy 6061-T6.
    - e. Self-Drilling screws and stainless steel rivets as required by manufacturer for assembly.
    - f. Mount vertical framing and screen panel assembly to roof mounted frame units.
      - 1) **Blades shall be horizontally oriented and along angle.**
    - g. Trim: Same material and finish as panel. Manufacturer's standard configuration for joints, seams, and terminations.
    - h. **Provide inside and outside corners fabricated from 6 inch by 6 inch by 0.100 inch thick aluminum trim, painted to match louver blades with exposed fasteners.**
  2. Finish:
    - a. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
      - 1) Color: As selected by Architect from PPG Corafon solid color color options.
- D. Fabrication
1. Fit and shop assemble items in largest practical sections.
  2. Fabricate items with joints tightly fitted and secured.
    - a. **Fabricate louver blades with close fitting, field-made splice joints in blades designed to permit expansion and contraction without deforming blades or framework.**
  3. Supply all components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted.
    - a. All components for anchorage and assembly of screen system are the responsibility of this Section. Specific components are not being supplied by others beyond the building roof and wall structure.
  4. Fabricate system components so that portions of screen can be dismantled for repairs to equipment and for future roof material replacement.
  5. **Trim and Closures: Fabricated from 24 gauge metal and finished with manufacturer's standard coating system.**

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Coordinate Setting Drawings, diagrams, templates, instructions, and directions for installation of anchorages that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best results for the substrate under the project conditions.

### 3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions. Provide brackets, anchors, and accessories necessary for a complete installation.
- B. Anchor fabrications to building structure as indicated on manufacturer's shop drawings.
- C. Locate and place screen units level, plumb, and at indicated alignment with adjacent work.
- D. Form closely fitted joints with exposed connections accurately located and secured.
- E. Provide for erection loads, and for sufficient temporary bracing to maintain indicated alignment until completion of erection and installation of permanent attachments.
- F. Repair finishes damaged by cutting, welding, soldering, and grinding. Restore finishes so no evidence remains of corrective work. Return items that cannot be refinished in the field to the factory, make required alterations, and refinish entire unit or provide new units.
  - 1. Do not cut or abrade finishes which cannot be restored. Return items with such finishes to shop for required alterations.
- G. Protect galvanized and nonferrous-metal surfaces from corrosion or galvanic action by applying a heavy coating of bituminous paint on surfaces that will be in contact with concrete, masonry, or dissimilar metals.
- H. Install flashing boots at base supports as required to provide a watertight connection and installation.

### 3.4 ADJUSTING, CLEANING, AND PROTECTING

- A. Periodically clean exposed surfaces of screens that are not protected by temporary covering to remove fingerprints and soil during construction period. Do not let soil accumulate until final cleaning.
- B. Before final inspection, clean exposed surfaces with water and a mild soap or detergent not harmful to finishes. Thoroughly rinse surfaces and dry.
- C. Protect screens from damage during construction. Use temporary protective coverings where needed and approved by screen manufacturer. Remove protective covering at the time of Substantial Completion.
- D. Restore screens damaged during installation and construction so no evidence remains of corrective work. If results of restoration are unsuccessful, as determined by A/E, remove damaged units and replace with new units.
  - 1. Clean and touch up minor abrasions in finishes with air-dried coating that matches color and gloss of, and is compatible with, factory-applied finish coating.

END OF SECTION 10 82 13

PACKAGED AIR HANDLING UNIT SCHEDULE																																				
MARK	MANUFACTURER DAKIN	FANS										DX COOLING COIL DATA (95 DEGREE AMBIENT)				COOLING				HOT GAS REHEAT COIL				GAS FIRED HEATING						ELECTRICAL			PRE FILTERS	FINAL FILTERS	WEIGHT, LBS	NOTES
		CFM	OA CFM	EXT. S.P.	TOTAL S.P.	BHP	HP	RPM	CFM	EXT. S.P.	HP	UNIT TOTAL MBH	UNIT SENS. MBH	EAT, DB °F	LAT, DB °F	MAX. VEL. FPM	ROWS	APD	EER/IEER	EAT DB °F	LAT DB °F	MBH	APD	EAT °F	LAT °F	INPUT MBH	OUTPUT MBH	MODULATING STAGES	APD	MCA	MOP	SERV				
RTU-1	DP8018A	3,300	2,220	0.75	1.20	0.99	13.0	827	0-3,300	0.50	(1)4.0	198.90	115.73	85.9 72.2	53.8 53.8	175	4 15	0.150	11.4/20.3	53.8	70.0	58.02	0.02	24.4	91.4	300.0	240.0	121 TURNDOWN	0.14	94.2	125	206/3	2-MERV 8	4-MERV 14	3,934	1,2,3,4,5,6,7,8,9,10,11,13,14,15,17,18,19,20
RTU-2	DP8015A	3,800	1,500	0.75	1.60	1.47	14.0	1,113	0-3,800	0.50	(1)4.0	171.92	117.44	81.4 67.8	53.1 53.1	246	6 15	0.280	10.8/17.5	53.1	70.0	69.53	0.06	42.2	100.4	300.0	240.0	10:1 TURNDOWN	0.07	77.5	100	206/3	2-MERV 8	4-MERV 14	2,676	1,2,3,4,5,7,8,9,10,12,13,14,15,16,17,18,19,20

NOTES

- REFER TO SPECIFICATION SECTION 23093 AND 237413.
- VARIABLE FREQUENCY CONTROLLER PROVIDED AND MOUNTED FOR SUPPLY FAN(S), AND RELIEF FAN(S) BY THE UNIT MANUFACTURER.
- UNIT SHALL HAVE FACTORY MOUNTED CONTROLS WITH LCD DISPLAY.
- UNIT TO BE FURNISHED WITH 14" (MIN.) INSULATED ROOF CURB SUPPLIED BY THE UNIT MANUFACTURER. COORDINATE CURB HEIGHT AND PITCH, DUCT CONNECTIONS AND ROOF PENETRATIONS. ROOF CURB TO BE PAINTED TO MATCH ROOF COLOR.
- SINGLE POINT POWER WITH NON-FUSED FACTORY MOUNTED DISCONNECT.
- UNIT SCOR RATINGS TO BE 10 KAIC MINIMUM.
- UNIT PROVIDED WITH FACTORY MOUNTED OUTSIDE AIR CONTROL DAMPERS, RETURN AIR CONTROL DAMPER(S) AND RELIEF FAN OUTLET BACK DRAFT DAMPER(S).
- RELIEF AIRFLOW TO BE VARIABLE VOLUME AIRFLOW WITH REMOTE SPACE PRESSURE SENSOR CONTROL.
- ECON MOTORS FOR SUPPLY FAN(S), RELIEF FAN(S) AND CONDENSER FAN(S) BY UNIT MANUFACTURER.
- REMOTE DISPLAY CONTROL PANEL BY THE UNIT MANUFACTURER.
- CONDENSING/COMPRESSOR(S) MODULATING CONTROL WITH 1 INVERTER COMPRESSOR.
- CONDENSING/COMPRESSOR MODULATING CONTROL WITH 1 INVERTER COMPRESSOR AND 1 FIXED COMPRESSOR.
- FIELD POWERED. UNIT PROVIDED GFI OUTLET.
- UNIT SCHEDULED AS MANUFACTURED BY DAKIN.
- TOTAL UNIT STATIC PRESSURE REFLECTS AVERAGE DIRTY FILTERS.
- UNIT SCOR RATING TO BE 5 KAIC MINIMUM.
- OUTSIDE AIR HOOD PROVIDED BY UNIT MANUFACTURER.
- UNIT PROVIDED WITH BACNET CARD FACTORY INSTALLED.
- UNIT PROVIDED WITH STAINLESS STEEL GAS HEAT EXCHANGER.
- SUMMER:  
INDOOR: 72° db/50% RH  
OUTDOOR: 91.3° db/75.0° wb  
WINTER:  
INDOOR: 70.0° db  
OUTDOOR: 2.6° db

DIFFUSER, REGISTER, AND GRILLE SCHEDULE									
MARK	TYPE	EXAMPLE MANUFACTURER MODEL NO.	NECK SIZE	OVERALL SIZE L"xW"	MAX CORE/NECK VEL.(FPM)	MAX. CFM	MAX. NOISE CRITERIA	FRAME/MOUNTING	REMARKS
A	RETURN/AIR TRANSFER GRILLE	TITUS 355-FL	6"x6"	8"x8"	500	100	20	REFER TO REFLECTED CEILING PLAN	PROVIDE ALUMINUM SURFACE MOUNT BORDER FOR DUCTED INSTALLATIONS.
B	RETURN/AIR TRANSFER GRILLE	TITUS 355-FL	10"x10"	12"x12"	500	300	20	REFER TO REFLECTED CEILING PLAN	PROVIDE ALUMINUM SURFACE MOUNT BORDER FOR DUCTED INSTALLATIONS.
C	RETURN/AIR TRANSFER GRILLE	TITUS 355-FL	12"x12"	14"x14"	500	425	20	REFER TO REFLECTED CEILING PLAN	PROVIDE ALUMINUM SURFACE MOUNT BORDER FOR DUCTED INSTALLATIONS.
D	RETURN/AIR TRANSFER GRILLE	TITUS 355-FL	14"x14"	16"x16"	500	600	20	REFER TO REFLECTED CEILING PLAN	PROVIDE ALUMINUM SURFACE MOUNT BORDER FOR DUCTED INSTALLATIONS.
E	RETURN/AIR TRANSFER GRILLE	TITUS 355-FL	16"x16"	18"x18"	500	800	20	REFER TO REFLECTED CEILING PLAN	PROVIDE ALUMINUM SURFACE MOUNT BORDER FOR DUCTED INSTALLATIONS.
F	RETURN/AIR TRANSFER GRILLE	TITUS 355-FL	22"x22"	24"x24"	500	1250	20	REFER TO REFLECTED CEILING PLAN	PROVIDE ALUMINUM SURFACE MOUNT BORDER FOR DUCTED INSTALLATIONS.
G	SQUARE PLAQUE CEILING DIFFUSER	TITUS OMNI	5"	12"x12"	800	100	18	REFER TO REFLECTED CEILING PLAN	4-WAY BLOW DIFFUSERS, UNLESS INDICATED OTHERWISE ON DRAWINGS.
H	SQUARE PLAQUE CEILING DIFFUSER	TITUS OMNI	6"	12"x12"	800	150	21	REFER TO REFLECTED CEILING PLAN	4-WAY BLOW DIFFUSERS, UNLESS INDICATED OTHERWISE ON DRAWINGS.
I	SQUARE PLAQUE CEILING DIFFUSER	TITUS OMNI	6"	24"x24"	900	175	17	REFER TO REFLECTED CEILING PLAN	4-WAY BLOW DIFFUSERS, UNLESS INDICATED OTHERWISE ON DRAWINGS.
J	SQUARE PLAQUE CEILING DIFFUSER	TITUS OMNI	8"	24"x24"	900	300	20	REFER TO REFLECTED CEILING PLAN	4-WAY BLOW DIFFUSERS, UNLESS INDICATED OTHERWISE ON DRAWINGS.
K	SQUARE PLAQUE CEILING DIFFUSER	TITUS OMNI	10"	24"x24"	800	425	20	REFER TO REFLECTED CEILING PLAN	4-WAY BLOW DIFFUSERS, UNLESS INDICATED OTHERWISE ON DRAWINGS.
L	SQUARE PLAQUE CEILING DIFFUSER	TITUS OMNI	12"	24"x24"	800	625	23	REFER TO REFLECTED CEILING PLAN	4-WAY BLOW DIFFUSERS, UNLESS INDICATED OTHERWISE ON DRAWINGS.
M	SQUARE PLAQUE CEILING DIFFUSER	TITUS OMNI	14"	24"x24"	700	750	20	REFER TO REFLECTED CEILING PLAN	4-WAY BLOW DIFFUSERS, UNLESS INDICATED OTHERWISE ON DRAWINGS.
N	RETURN/AIR TRANSFER GRILLE	TITUS 355-FL	SEE FLOOR PLANS FOR SIZE	-	500	PER PLANS	20	DUCT OR SIDEWALL	FIXED 35(DEGREE), 1/2" SPACING DEFLECTION BLADES
O	HEAVY DUTY RETURN GRILLE	TITUS 33-RL	SEE FLOOR PLANS FOR SIZE	-	PER PLANS	20	DUCT OR SIDEWALL	FIXED 38(DEGREE), 1/2" SPACING DEFLECTION BLADES	
P	SIDEWALL SUPPLY DIFFUSER	TITUS 300-FL	SEE FLOOR PLANS FOR SIZE	-	300	PER PLANS	20	DUCT OR SIDEWALL	DOUBLE DEFLECTION, ADJUSTABLE BLADES 1/2" FRONT SPACING, 3/4" REAR SPACING
Q	HEAVY DUTY SUPPLY DIFFUSER	TITUS 300RL-HD	SEE FLOOR PLANS FOR SIZE	-	400	PER PLANS	20	DUCT OR SIDEWALL	DOUBLE DEFLECTION, ADJUSTABLE BLADES 1/2" FRONT SPACING, 3/4" REAR SPACING
R	LINEAR SLOT DIFFUSER	TITUS FL-20-HT	SEE FLOOR PLANS FOR SIZE	2-SLOT X 48"L	PER PLANS	20	REFER TO REFLECTED CEILING PLAN	HIGH THROW WITH INSULATED PLENUM 2-2" SLOT WITH DIA." INLET	
S	LINEAR SLOT DIFFUSER	TITUS FL-10-JT	SEE FLOOR PLANS FOR SIZE	1-SLOT X 48"L	PER PLANS	20	REFER TO REFLECTED CEILING PLAN	JET THROW WITH INSULATED PLENUM 1-1" SLOT WITH DIA." INLET	
T	SUPPLY DIFFUSER	TITUS 300-FS	SEE FLOOR PLANS FOR SIZE	-	450	PER PLANS	25	DUCT OR SIDEWALL	DOUBLE DEFLECTION, ADJUSTABLE BLADES 1/2" FRONT SPACING, 3/4" REAR SPACING
U	LINEAR SLOT DIFFUSER	TITUS FL-15-JT	SEE FLOOR PLANS FOR SIZE	1-SLOT X 48"L	PER PLANS	20	REFER TO REFLECTED CEILING PLAN	JET THROW WITH INSULATED PLENUM 1-1.5" SLOT WITH DIA." INLET	
V	SPIRAL SUPPLY DUCT GRILLE	TITUS S300-FL	SEE FLOOR PLANS FOR SIZE	-	450	PER PLANS	20	DUCT	DOUBLE DEFLECTION, ADJUSTABLE BLADES 3/4" SPACING, AIR SCOOP DEVICE
W	ROUND SUPPLY DIFFUSER	AIR CONCEPTS RDOW & RDOW-RD	SEE FLOOR PLANS FOR SIZE	-	550	PER PLANS	15	CEILING AND DUCT	ADJUSTABLE DOUBLE DEFLECTION VERTICAL AND HORIZONTAL
X	LINEAR SLOT DIFFUSER	TITUS FL-10-HT	SEE FLOOR PLANS FOR SIZE	1-SLOT X 48"L	PER PLANS	20	REFER TO REFLECTED CEILING PLAN	HIGH THROW WITH INSULATED PLENUM 1-1.0" SLOT WITH DIA." INLET	

EXHAUST FAN SCHEDULE											
MARK	TYPE	CFM	FRPM	EXT. S.P.	MAX. SONES	ELEC HP	SERV	CONTROL	MODEL	DRIVE	NOTES
EF-1	ROOF	2,100	1,311	0.450	12.5	1.0	115/1	A	G-140-VG	DIRECT	1,2,4,5,6,7,8
EF-2	ROOF	700	1,476	0.350	7.9	1/6	115/1	B.1	G-095-VG	DIRECT	1,2,4,5,6,7,8
EF-3	ROOF	1,350	1,336	0.450	11.1	1/2	115/1	A	G-120-VG	DIRECT	1,2,4,5,6,7,8
EF-4	IN-LINE	200	1,673	0.300	5.7	1/15	115/1	C	SQ-70-VG	DIRECT	1,2,3,4,6,7

NOTES

- INCLUDE DISCONNECT SWITCH.
  - INCLUDE BACKDRAFT DAMPER.
  - SUPPORT FROM STRUCTURE ABOVE WITH VIBRATION ISOLATORS.
  - REFER TO SPECIFICATION SECTION 233423 FOR ADDITIONAL REQUIREMENTS.
  - MOUNT ON 12" HIGH ROOF CURB.
  - ALL FAN MODELS SPECIFIED AS MANUFACTURED BY GREENHECK.
  - INCLUDE FIELD MOUNTED AND WIRED SPEED CONTROL.
  - COLOR(S) TO BE SELECTED BY ARCHITECT/ENGINEER.
  - INSTALL DRIP PAN UNDER UNIT.
  - ALUMINUM WHITE ENAMEL GRILLE, ISOLATION KIT AND HOODED WALL CAP.
  - HI-PRO POLYESTER FINISH FOR HOUSING, FAN WHEEL, BACK DRAFT DAMPER AND ACCESSORIES.
- CONTROL KEY:  
 A. AUTOMATIC OCCUPIED OPERATION BY LOCAL TEMPERATURE CONTROL ZONE.  
 B. MANUAL CONTROLS BY DIVISION 26.  
 1. WITH TIMER SWITCH.  
 2. WITH ON/OFF SWITCH.  
 3. WITH ROOM LIGHT SWITCH.  
 C. AUTOMATIC OPERATION BY REVERSE-ACTING THERMOSTAT.  
 D. 24 HOUR CONTINUOUS OPERATION.  
 E. ON/OFF CONTROL WITH FUME HOOD.  
 F. CONTROLS BY DISHWASHER HOOD MANUFACTURER.  
 G. ON/OFF CONTROL WITH KITCHEN HOOD EXHAUST FAN OPERATION.

AHU/RTU MAXIMUM ALLOWABLE SOUND LEVELS									
MARK	UNIT SOUND	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz
RTU-1	UNIT SUPPLY DISCHARGE	71	73	72	70	68	65	60	55
RTU-2	UNIT SUPPLY DISCHARGE	75	79	75	78	74	71	67	62

ELECTRIC CEILING MOUNTED UNIT HEATER SCHEDULE							
MARK	CFM	ELECTRIC HEATING			ELEC SERV	MODEL NO.	NOTES
		BTUH	EAT	LAT			
ECLH-1	600	10,200	60	82	3.0	208/3	RCH 3480 SERIES 1,2,3,4,5,6
ECLH-2	600	10,200	60	82	3.0	208/3	RCH 3480 SERIES 1,2,3,4,5,6
ECLH-3	600	10,200	60	82	3.0	208/3	RCH 3480 SERIES 1,2,3,4,5,6
ECLH-4	600	6,826	60	75	2.0	208/3	RCH 3480 SERIES 1,2,3,4,5,6
ECLH-5	600	6,826	60	75	2.0	208/3	RCH 3480 SERIES 1,2,3,4,5,6

NOTES

- UNITS SCHEDULED ARE AS MANUFACTURED BY RAYWALL.
- RECESSED CEILING MOUNTED.
- REFER TO SPECIFICATION SECTION 238239.
- LOW VOLTAGE WALL MOUNTED TEMPERATURE SENSOR BY THE TCC.
- FACTORY DISCONNECT SWITCH.
- WHITE POWDER COATED GRILLE.

ELECTRIC PROPELLER UNIT HEATER SCHEDULE									
MARK	CFM	FAN SPEED (RPM)	ELECTRIC HEATING			ELEC SERV	MODEL NO.	NOTES	
			MBH	EAT	LAT				MAX KW
EPH-1	400	HIGH	11,200	60	86	3.3	208/3	S100 SERIES 1,2,3,4,5,6,7	

NOTES

- UNITS SCHEDULED ARE AS MANUFACTURED BY RAYWALL.
- HORIZONTAL DISCHARGE.
- REFER TO SPECIFICATION SECTION 238239.
- SUPPORT HEATER FROM STRUCTURE ABOVE WITH MINIMUM OF TWO (2), 3/8" DIAMETER THREADED RODS AND VIBRATION ISOLATORS.
- UNIT FURNISHED WITH ADJUSTABLE LOUVER FIN DIFFUSERS TO PROVIDE FOUR-DIRECTION AIR FLOW CONTROL.
- LOW VOLTAGE WALL MOUNTED TEMPERATURE SENSOR BY THE TCC.
- FACTORY DISCONNECT SWITCH.

ELECTRIC CABINET UNIT HEATER SCHEDULE										
MARK	HIGH CFM	LOW CFM	HIGH KW	LOW KW	HIGH/LOW MBH	EAT	HIGH/LOW AMPS	ELEC. SERV	MODEL NO.	NOTES
ECH-1	500	460	10.0	6.0	34.13/20.47	60	35.1/18.4	208/3	T46	1,2,3,5,6,7,8,9
ECH-2	250	230	5.0	3.0	17.06/10.23	60	17.6/9.2	208/3	T33	1,2,3,5,6,7,8,9
ECH-3	250	230	5.0	3.0	17.06/10.23	60	17.6/9.2	208/3	T33	1,2,3,5,6,7,8,9

NOTES

- COLOR TO BE SELECTED BY ARCHITECT.
- PROVIDE FACTORY DISCONNECT.
- HORIZONTAL CEILING RECESSED UNIT.
- HORIZONTAL EXPOSED UNIT.
- UNIT SCHEDULED WITH BOTTOM SUPPLY AND BOTTOM RETURN.
- LOW VOLTAGE WALL MOUNTED 2-STAGE TEMPERATURE SENSOR BY THE TCC.
- UNITS SCHEDULED ARE AS MANUFACTURED BY RAYWALL.
- REFER TO SPECIFICATION SECTION 238239.
- SUPPORT HEATER FROM STRUCTURE ABOVE WITH MINIMUM OF FOUR (4), 3/8" DIAMETER THREADED RODS AND VIBRATION ISOLATORS.

CARMEL STADIUM SOUTH SUPPORT BUILDING

E 136th St, Carmel, IN 46032

CARMEL CLAY SCHOOLS



ARCHITECT

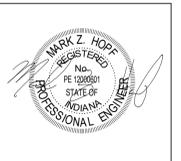
FANNING HOWE

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KEY PLAN

CONSTRUCTION DOCUMENTS



DRAWN BY: DRV  
PROJECT NUMBER: 220136  
PROJECT ISSUE DATE: 04-26-2023

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM 1	05-25-23

MECHANICAL SCHEDULES

M5.01

