



Office of General Services

DESIGN & CONSTRUCTION GROUP
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EMPIRE STATE PLAZA
ALBANY, NY 12242

ADDENDUM NO. 1 TO PROJECT NO. 46083

HVAC AND ELECTRICAL WORK UPGRADE CONTROLS & HEATING SYSTEM TABERG RESIDENTIAL CENTER FOR GIRLS 1011 TABERG FLORENCE RD TABERG, NY 13471-1952

May 21, 2021

NOTE: This Addendum forms a part of the Contract Documents. Insert it in the Project Manual. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

HVAC WORK SPECIFICATIONS

1. SECTION 233300 DUCTWORK ACCESSORIES: Discard the Section bound in the Project Manual and substitute the accompanying Section (pages 233300 – 1 thru 233300 – 6) noted “Revised 5/21/2021”.

HVAC WORK DRAWINGS

2. Drawing No. M-601:
 - a. Replace the DIFFUSER/GRILLE SCHEDULE with the following:

DIFFUSER / GRILLE SCHEDULE								
TAG	LOCATION	SERVICE	TYPE	CFM	FACE SIZE	NECK SIZE	MAX NC	REMARKS
SD-1	GYM	SUPPLY	LATTICE SECURITY	170	24x24	8x6	25	1,6
SD-2	GARAGE	SUPPLY	RING NOZZLE	250	8 Ø	DUCT MOUNT	25	2
SD-3	GARAGE	SUPPLY	INDUSTRIAL GRILLE	750	20x10	18x8	25	3
RG-1	GYM	RETURN	LATTICE SECURITY	340	24x24	8x6	25	4,6
RG-2	GARAGE	RETURN	35° DEFLECTION GRILLE	1400	24x24	PLENUM	25	5

REMARKS:

1. DIFFUSER/ GRILLE TO BE LATTICE FACE SECURITY GRILLE SIMILAR TO KRUEGER 1340 OR APPROVED EQUAL.
2. DUCT MOUNTED CONCENTRIC RING AIR NOZZLE WITH ROUND DUCT ADAPTOR, SIMILAR TO KRUEGER CRNRD OR APPROVED EQUAL.
3. FASTEN GRILLE TO DUCT, SIMILAR TO KRUEGER 680 OR APPROVED EQUAL.
4. GRILLE TO BE LATTICE FACE SECURITY GRILLE SIMILAR TO KRUEGER 1380 OR APPROVED EQUAL.
5. FASTEN GRILLE TO HEAT PUMP PLENUM, SIMILAR TO KRUEGER S80 OR APPROVED EQUAL.
6. PROVIDE VOLUME DAMPER IN DUCT FOR EACH DIFFUSER AND GRILLE.

END OF ADDENDUM

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SECTION 233300

DUCTWORK ACCESSORIES

PART 1 GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. Metal Ductwork: Section 233113.

1.02 REFERENCES

- A. ACGIH: American Conference of Governmental Industrial Hygienists.
- B. AMCA: Air Movement and Control Association.
- C. NFPA: National Fire Protection Association.
- D. SMACNA: Sheet Metal and Air Conditioning Contractors National Association, Inc.
- E. UL: Underwriters Laboratories, Inc.

1.03 SUBMITTALS

- A. Product Data: Catalog sheets, diagrams, standard schematic drawings, and installation instructions for each manufactured product. Submit SMACNA Figure Numbers for each shop fabricated item.
- B. Samples: When directed, submit one complete unit for each type of proposed air inlet and outlet device. Approved samples will be delivered to the job site for installation.

1.04 QUALITY ASSURANCE

- A. Regulatory Requirements:
 - 1. Unless otherwise shown or specified, comply with the applicable requirements of the following:
 - a. SMACNA: Gages of materials, fabrication, sealing, and installation shall be in accordance with the SMACNA Manuals.
 - 1) HVAC Duct Construction Standards.
 - b. UL: Standards No. UL181, UL555, and UL555S.

1.05 MAINTENANCE

- A. Special Tools:
 - 1. One bar deflection key for every five supply grilles and/or every five return grilles.
 - 2. One operator key for every five supply registers and/or every 5 return or exhaust registers.

3. Two keys or socket wrenches for each type of damper adjustment screw or device on manual damper regulators.
4. One tool for each type and size security fastener.

PART 2 PRODUCTS

2.01 GRILLES AND REGISTERS

- A. Fabricate grille and register faces as scheduled.

2.02 DAMPERS

- A. Control Dampers (Galvanized Steel):
 1. Types:
 - a. Standard Damper: 40 cfm/sq ft maximum leakage rate at 1500 fpm and 1 inch wg for 48 inch wide damper (based on AMCA 500).
 2. Frame: 16 gage galvanized steel hat channel with corner braces, and welded joints.
 - a. Frame Size:
 - 1) Dampers 13 inches high and under: 3-1/2 inch x 3/8 inch top and bottom frames.
 - 2) Dampers over 13 inches high: 5 inch x 1 inch.
 3. Blades:
 - a. Standard Damper: Single skin, 16 gage galvanized steel with longitudinal reinforcing grooves. Single blade dampers are acceptable for ducts up to 14 inches high.
 - b. Blade Action:
 - 1) Modulating Dampers: Opposed blade.
 - c. Single blade dampers are acceptable for ducts up to 14 inches high.
 4. Axles: 1/2 inch plated steel hex positively locked to blade, and connected to frame through extruded hole with molded synthetic sleeve bearings.
 5. Extended Shaft Assembly: Consisting of outboard support bracket, extended shaft rod, extended shaft.
 - a. Suitable for 2 inches of insulation.
 6. Jamb Seals: Flexible metal compression type.
 7. Damper Operation:
 - a. Standard Damper: Manually operated by lockable hand quadrant.
 8. Linkage:
 - a. Single Section Dampers: In-frame fixed type with removable 1/2 inch dia control shaft extending 6 inches from damper frame, and outboard support bearing.
 - b. Multiple Section Dampers: On-blade fixed type with factory installed jackshaft.
 9. Finish: Mill galvanized.

- B. Control Dampers (Aluminum):
 - 1. Types:
 - a. Low Leakage: 2.7 cfm/sq ft maximum leakage rate at 4000 fpm and 1 inch wg for 48 inch wide damper (based on AMCA 500).
 - 2. Frame: Extruded aluminum hat channel, 1/8 inch thick, and mounting flanges, and welded joints.
 - a. Frame Size:
 - 1) Dampers 12 inches high and under: 5 inches x 1/2 inch top and bottom frames.
 - 2) Dampers over 12 inches high: 5 inches x 1 inch
 - 3. Blades:
 - a. Low Leakage Damper: Airfoil type constructed of 0.71 thick extruded aluminum, with integral reinforcing tube running full length of blade, and replaceable extruded vinyl double edge blade seals mechanically locked into extruded blade slots.
 - b. Blade Action:
 - 1) Modulating Dampers: Opposed blade.
 - c. Single blade dampers are acceptable for ducts up to 14 inches high.
 - 4. Axles: 1/2 inch plated steel hex positively locked to blade and connected to frame through extruded hole with molded synthetic sleeve bearings.
 - 5. Extended shaft Assembly: Consisting of outboard support bracket, extended shaft rod, and extended shaft.
 - a. Suitable for 2 inches of insulation.
 - 6. Jamb Seals: Flexible metal compression type.
 - 7. Damper Operation:
 - a. Low Leakage Dampers: Electric motor operated. Weld actuator mounting bracket to frame.
 - 8. Linkage:
 - a. Single Section Dampers: In-frame fixed type with removable 1/2 inch dia control shaft extending 6 inches from damper frame.
 - b. Multiple Section Dampers: On-blade fixed type with factory installed jackshaft.
 - 9. Finish: Mill.

2.03 DAMPER ACTUATORS

- A. Acceptable Manufacturers: Honeywell Inc., Johnson Controls, Inc., Belimo, and Seimens.
- B. Electric/Electronic Type:
 - 1. Positive positioning, spring return, and sized in accordance with actuator manufacturer's printed recommendations for each damper size.
 - 2. Actuators for outdoor dampers shall fail closed upon loss of electric power.
 - 3. Actuator Response: Linear in response to sensed load.
 - 4. Voltage: 120 VAC or 24 VAC.
 - 5. Actuator Timing:

- a. Open Damper: 90 seconds.
 - b. Spring Return: 30 seconds.
 - c. Spring Close: 30 seconds.
- C. Auxiliary End Switches: Required on electric/electronic actuators for the following applications:
 - 1. 100 percent Outside Air Systems: Outside air damper switch delays start of unit until damper is open. Set switch to start unit when damper is 50 percent open.
 - 2. In-line Exhaust Fan Systems (Over 500 cfm): Exhaust damper switch delays start of fan until damper is open.

2.04 TURNING VANE ASSEMBLIES

- A. Fabricate vane assemblies of same material as ductwork in which installed.
 - 1. Vanes: Individual hollow airfoil type, rigidly connected to vane rails.
 - 2. Weld, screw, or rivet rails to ductwork.

2.05 FLEXIBLE CONNECTIONS - FABRIC

- A. Static Pressures under 6 inches WG: Woven Fiberglass fabric with Hypalon coating; similar to Duro Dyne Corp.'s Durolon.
- B. Direct Fired Heating Equipment with Temperatures up to 500 Degrees F: Woven fiberglass fabric with silicone rubber coating; similar to Duro Dyne Corp.'s Thermofab.
- C. Factory prefabricated and pre-assembled connectors of fabric materials specified above are acceptable with minimum 24 gage galvanized steel edges similar to Duro Dyne Corp.'s Metal-Fab or Super Metal-Fab as required by free fabric length.

2.06 GASKET MATERIAL

- A. Registers, Grilles, and Diffusers Installed in Exposed, Uninsulated Ductwork: 1/4 inch thick felt or sponge rubber material, of width as required by flange.
- B. Flanged Joints in Ducts: 1/8 inch thick reinforced inert plastic of the self-conforming type, of same width as flange.
 - 1. Exception: Where flanged connections in cooking equipment exhaust ductwork is allowed by NFPA 96, make up joints with Fibrefrax Grade 110 Paper by Carborundum Co.

2.07 SEALANTS

- A. Acceptable Manufacturers: Duro Dyne Corp.; Foster Products Div., H.B. Fuller Co.; Hardcast Inc.; United Sheet Metal Div., United McGill Corp.
- B. U.L. Listed adhesives (liquid or mastic), scrim, tapes, or combinations thereof, as required for pressure class; suitable for system operating temperatures;

compatible with media conveyed within, insulation (if any), and ambient conditions.

2.08 FLEXIBLE DUCT

- A. Conform to NFPA 90A, and UL181 Class I:
 - 1. Uninsulated Type: Factory assembled duct consisting of continuous, seamless, metalized polyester tear resistant duct with encapsulated steel helix.
 - 2. Pre-insulated Type: Factory assembled.
 - a. Internal Core: Continuous material suitable for service, with encapsulated steel helix that completely shields fiberglass insulation from air stream.
 - 3. Operating Conditions:
 - a. Maximum Operating Temperature: 120 degrees F.
 - b. Maximum Operating Static Pressure (Positive): 2.0-inch wg.
 - c. Maximum Operating Static Pressure (Negative): 1.0-inch wg.
 - d. Maximum Air Velocity: 1000 fpm.
 - e. Maximum Allowable Length: 5 feet.
 - 4. Metal Clamps: Stainless steel with cadmium plated hex bolt.

2.09 DUCT ACCESS DOORS

- A. Prefabricated or Fabricated at Site: Minimum 12 x 12 inch size, of same material and finish as duct unless otherwise shown or specified.
 - 1. For uninsulated duct designed for under two inches wg: Fabricate single panel door of same gage as duct, with all edges folded, size door to overlap opening perimeter by one inch.
 - 2. For insulated duct and duct designed for two inches wg and over: Fabricate hollow metal doors in accordance with the SMACNA Manual. Fill void in doors for insulated duct with thermally equivalent insulation.
 - 3. Gasketing: A 3/4 inch wide, 1/8 inch thick urethane gasket, around all four sides of duct opening.
 - a. Exception: Where access doors are required by NFPA 96 in cooking equipment exhaust ductwork, gasket with Fibrefrax Grade 110 paper by Carborundum Co.
- B. Access Door Hardware:
 - 1. Piano Hinges: Galvanized steel with brass pins, continuous type, full height of door.
 - 2. Butt Hinges: Galvanized steel with brass pins, approximately 2 inches x 1-9/16 inches wide for doors under 24 inches high and 3 inches x 2 inches wide for doors over 24 inches and higher.
 - 3. Sash Locks: Galvanized, cadmium plated, or aluminized steel or cast aluminum.
 - 4. Door Latches: Ventfabrics, Inc. Ventlock No. 260 or Duro Dyne Corp. Code No. SP-20 Series.

2.10 FASTENERS

- A. Security Fasteners: Torx head with center pin.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

- A. Unless otherwise shown or specified, install the Work of this Section in accordance with the manufacturer's printed installation instructions and the SMACNA Manual.

3.02 FLEXIBLE FABRIC CONNECTORS (INSTALLATION)

- A. Make ductwork connections to air handling equipment with flexible fabric connectors. Install connectors with sufficient slack to prevent vibration transmission.
- B. Free Fabric Length: Install fabric connectors a minimum of three inches in length for ducts having a maximum diameter of 18 inches, or maximum side dimension of 30 inches, and a minimum of five inches in length for duct diameters over 18 inches or side dimensions over 30 inches.
- C. Secure fabric connectors to fans, casings and ducts as follows:
 - 1. Round Connectors: Secure with No. 12 USS gage x 1 inch wide galvanized steel draw bands. Secure bands with bolts and nuts.
 - 2. Rectangular Connectors: Secure with 1 inch x 1/8 inch thick flat galvanized steel bars, with screws or bolts on maximum 8 inch centers, or with approved sheet metal slip joints. Tightly crimp fabric into sheet metal joint and secure complete joint with sheet metal screws on maximum 6 inch centers.
- D. Fabric connectors may be factory pre-fabricated pre-assembled units, with minimum No. 24 USS gage metal edges, secured to fabric with double lock seams.
- E. Do not paint fabric connectors.

3.03 ACCESS DOORS

- A. Install gasketed access doors in ductwork at each of the following:
 - 1. Major changes of direction in horizontal ducts connected to cooking equipment hoods.
 - 2. Motor operated dampers.
 - 3. Manually operated volume control devices.
 - 4. Fire dampers.
 - 5. Combination fire/smoke dampers.
 - 6. All locations where operating parts of any kind are installed and elsewhere as indicated.
 - 7. In-line damper actuators installed in air stream.

- B. Access doors are not required, where a manually operated damper has an exposed damper regulator, with an indicating quadrant.

END OF SECTION