

**EAST LYME PUBLIC SAFETY BUILDING RENOVATIONS
277 WEST MAIN STREET
NIANTIC, CT 06357**

S/P+A PROJECT NO. 19.087

DATE: April 20, 2020

The following changes to the Drawings and Project Specifications shall become a part of the Drawings and Project Specifications; superseding previously issued Drawings and Project Specifications to the extent modified by Addendum No. 6.

Changes to the Specifications:

- Section 095113 “Acoustical Panel Ceilings”: Delete in its entirety.
Add: Revised Section 095113 “Acoustical Panel Ceilings”, attached as part of this Addendum. (8 pages)

The bid due dates are unchanged by this Addendum.

The Addendum consists of nine (9) pages of 8½” x 11” text, and zero (0) pages of 30” x 42” drawings.

End of Addendum #6

SECTION 095113 - ACOUSTICAL PANEL CEILINGS

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 acoustical panels and exposed suspension systems for ceilings.
- B. Products furnished, but not installed under this Section, include anchors, clips, and other ceiling attachment devices to be cast in concrete.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified, 6 inches in size.

1.4 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
 - 1. Suspended ceiling components.
 - 2. Structural members to which suspension systems will be attached.
 - 3. Size and location of initial access modules for acoustical panels.
 - 4. Items penetrating finished ceiling including the following:
 - a. Lighting fixtures.
 - b. Air outlets and inlets.
 - c. Speakers.
 - d. Sprinklers.
 - e. Access panels.
 - 5. Perimeter moldings.
- B. Product Test Reports: For each acoustical panel ceiling, for tests performed by a qualified testing agency.
- C. Evaluation Reports: For each acoustical panel ceiling suspension system and anchor and fastener type, from ICC-ES.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For finishes to include in maintenance manuals.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Acoustical Ceiling Panels: Full-size panels equal to two percent (2%) of each type of quantity installed.
 - 2. Suspension-System Components: Quantity of each exposed component equal to two percent (2%) of quantity installed.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver acoustical panels, suspension-system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.
- C. Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

1.8 FIELD CONDITIONS

- A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
 - 1. Pressurized Plenums: Operate ventilation system for not less than forty-eight (48) hours before beginning acoustical panel ceiling installation.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Acoustical ceiling shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
- B. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame-Spread Index: Comply with ASTM E 1264 for Class A materials.
 - 2. Smoke-Developed Index: Fifty (50) or less.
- C. Fire-Resistance Ratings: Comply with ASTM E 119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

2.2 ACOUSTICAL PANELS, GENERAL

A. Source Limitations:

1. Acoustical Ceiling Panel: Obtain each type from single source from single manufacturer.
2. Suspension System: Obtain each type from single source from single manufacturer.

B. Acoustical Panel Standard: Provide manufacturer's standard panels of configuration indicated that comply with ASTM E 1264 classifications as designated by types, patterns, acoustical ratings, and light reflectances unless otherwise indicated.

1. Mounting Method for Measuring NRC: Type E-400; plenum mounting in which face of test specimen is 15¾ inches away from test surface according to ASTM E 795.

C. Acoustical Panel Colors and Patterns: Match appearance characteristics indicated for each product type.

1. Where appearance characteristics of acoustical panels are indicated by referencing pattern designations in ASTM E 1264 and not manufacturers' proprietary product designations, provide products selected by Architect from each manufacturer's full range that comply with requirements indicated for type, pattern, color, light reflectance, acoustical performance, edge detail, and size.

2.3 ACOUSTICAL PANEL MANUFACTURERS

A. 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:

1. Armstrong World Industries, Inc.
2. CertainTeed Corp.
3. USG Interiors, Inc.; Subsidiary of USG Corporation.
4. Substitutions: Under provisions of Division 01 Section "Substitution Procedures".

2.4 ACOUSTICAL PANELS

A. Basis-of-Design Product (**ACT-2**):

1. Armstrong World Industries, Inc.; **Fine Fissured**
2. Classification: Provide panels complying with ASTM E 1264 for type, form, and pattern as follows:
 - a. Type and Form: Type III, mineral base with painted finish; Form 2, water felted.
 - b. Pattern: CE (perforated, small holes and lightly textured).
3. Color: White.
4. LR: Not less than 0.85.
5. NRC: Not less than 0.70.
6. CAC: Not less than 40.
7. Edge/Joint Detail: Square Lay-In.
8. Thickness: 15/16 inch.
9. Modular Size: As indicated in Section 090000 "Schedule of Finishes".

- B. Basis-of-Design Product (**ACT-4**):
1. Armstrong World Industries, Inc.; **Fine Fissured**
 2. Classification: Provide panels complying with ASTM E 1264 for type, form, and pattern as follows:
 - a. Type and Form: Type III, mineral base with painted finish; Form 2, water felted.
 - b. Pattern: CE (perforated, small holes and lightly textured).
 3. Color: White.
 4. LR: Not less than 0.85.
 5. NRC: Not less than 0.70.
 6. CAC: Not less than 40.
 7. Edge/Joint Detail: Square Lay-In.
 8. Thickness: 15/16 inch.
 9. Fire Rating: Class A., **one-hour rated assembly**.
 10. Modular Size: 24 by 48 inches.
- C. Broad Spectrum Antimicrobial Fungicide and Bactericide Treatment: Provide acoustical panels treated with manufacturer's standard antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D 3273 and evaluated according to ASTM D 3274 or ASTM G 21.

2.5 METAL SUSPENSION SYSTEMS, GENERAL

- A. Metal Suspension-System Standard: Provide manufacturer's standard direct-hung metal suspension systems of types, structural classifications, fire-rating classifications, and finishes indicated that comply with applicable requirements in ASTM C 635.
- B. Fire-Rating: One hour, Class A.
- C. Attachment Devices: Size for five (5) times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.
- D. Wire Hangers, Braces, and Ties: Provide wires complying with the following requirements:
1. Zinc-Coated, Carbon-Steel Wire: ASTM A 641, Class 1 zinc coating, soft temper.
 2. Size: Select wire diameter so its stress at three (3) times hanger design load (ASTM C 635, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.106-inch-diameter wire.
- E. Seismic Stabilizer Bars: Manufacturer's standard perimeter stabilizers designed to accommodate seismic forces.
- F. Seismic Struts: Manufacturer's standard compression struts designed to accommodate seismic forces.
- G. Seismic Clips: Manufacturer's standard seismic clips designed and spaced to secure acoustical panels in place.

2.6 METAL SUSPENSION SYSTEM

- A. 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:
1. Armstrong World Industries, Inc.
 2. CertainTeed Corp.
 3. USG Interiors, Inc.; Subsidiary of USG Corporation.
 4. Substitutions: Under provisions of Division 01 Section "Substitution Procedures".
- B. Wide-Face, Double-Web, Hot-Dip Galvanized, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet; hot-dip galvanized according to ASTM A 653; with prefinished, cold-rolled, 15/16-inch-wide flanges.
1. Basis-of-Design Product:
 - a. Armstrong World Industries, Inc.; **Prelude XL 15/16 Inch Exposed Tee System**
 2. Structural Classification: Heavy-duty system.
 3. Face Design: Flat, flush.
 4. Finish: Painted white.
- C. Fire-Rating: One hour, Class A.

2.7 METAL EDGE MOLDINGS AND TRIM

- A. 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:
1. Armstrong World Industries, Inc.
 2. CertainTeed Corp.
 3. USG Interiors, Inc.; Subsidiary of USG Corporation.
 4. Substitutions: Under provisions of Division 01 Section "Substitution Procedures".
- B. Roll-Formed, Sheet-Metal Edge Moldings: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension-system runners.
1. Provide manufacturer's standard edge moldings that fit acoustical panel edge details and suspension systems indicated and that match width and configuration of exposed runners unless otherwise indicated.
 2. For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.
- C. Fire-Rating: One hour, Class A.

2.8 ACOUSTICAL SEALANT

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

1. Acoustical Sealant for Exposed and Concealed Joints:
 - a. Pecora Corporation; **AC-20 FTR Acoustical and Insulation Sealant**
 - b. USG Corporation; **SHEETROCK Acoustical Sealant**
 - c. Substitutions: Under provisions of Division 01 Section "Substitution Procedures".

- B. Acoustical Sealant: Manufacturer's standard sealant complying with ASTM C 834 and effective in reducing airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
 1. Exposed and Concealed Joints: Non-sag, paintable, non-staining latex sealant.
 2. Acoustical sealant shall have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.

- B. Examine acoustical panels before installation. Reject acoustical panels that are wet, moisture damaged, or mold damaged.

- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.

3.3 INSTALLATION

- A. General: Install acoustical panel ceilings to comply with ASTM C 636 and seismic design requirements indicated, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
 1. Fire-Rated Assembly: Install fire-rated ceiling systems according to tested fire-rated design.

- B. Suspend ceiling hangers from building's structural members and as follows:
 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
 2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.

3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
 4. Secure wire hangers to ceiling-suspension members and to supports above with a minimum of three (3) tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 5. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
 6. Do not attach hangers to steel roof deck. Attach hangers to structural members.
 7. Space hangers not more than 48 inches o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
 8. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.
- C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four (4) tight turns. Suspend bracing from building's structural members as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or postinstalled anchors.
- D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
1. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.
 2. Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet. Miter corners accurately and connect securely.
 3. Do not use exposed fasteners, including pop rivets, on moldings and trim.
- E. Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- F. Install acoustical panels with undamaged edges and fit accurately into suspension-system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.
1. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension-system runners and moldings.
 2. Paint cut edges of panel remaining exposed after installation; match color of exposed panel surfaces using coating recommended in writing for this purpose by acoustical panel manufacturer.
 3. Install clean-room gasket system in areas indicated, sealing each panel and fixture as recommended by panel manufacturer's written instructions.
 4. Protect lighting fixtures and air ducts to comply with requirements indicated for fire-resistance-rated assembly.

3.4 CLEANING

- A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension-system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 095113