
This addendum modifies, amends, and supplements designated parts of the Contract Documents, Project manual, and Drawings for NDSU Langdon Research Extension Center Greenhouse Addition, dated 02/14/2024, and is hereby made part thereof by reference and shall be binding as though inserted in its entirety in the location specified herein. It shall be the responsibility of the Construction Manager to notify all Subcontractors and Suppliers for the various parts of the work of any changes or modifications contained in this Addendum. Receipt of this Addendum shall be noted on the project bid form.

ADDENDUM 01:

This Addendum consists of thirteen (13) pages including specifications.

GENERAL INFORMATION

CLARIFICATIONS

- None for Addendum 01

SPECIFICATIONS

- None for Addendum 01

DRAWINGS

- None for Addendum 01

PRIOR APPROVALS

- None for Addendum 01

CIVIL:

CLARIFICATIONS

- None for Addendum 01

SPECIFICATIONS

- None for Addendum 01

DRAWINGS

- None for Addendum 01

PRIOR APPROVALS

- None for Addendum 01

STRUCTURAL:

CLARIFICATIONS

- None for Addendum 01

SPECIFICATIONS

- None for Addendum 01

DRAWINGS

- None for Addendum 01

PRIOR APPROVALS

- None for Addendum 01

ARCHITECTURAL:

CLARIFICATIONS

- None for Addendum 01

SPECIFICATIONS

01 1000 – SUMMARY

1. See Attached – Providing Construction Budget Numbers

09 5123 – ACOUSTICAL TILE CEILINGS

1. See Attached

DRAWINGS

- None for Addendum 01

PRIOR APPROVALS

- None for Addendum 01

MECHANICAL:

CLARIFICATION

- None for Addendum 01

SPECIFICATIONS

- None for Addendum 01

DRAWINGS

- None for Addendum 01

PRIOR APPROVALS

- None for Addendum 01

ELECTRICAL:

CLARIFICATIONS

- None for Addendum 01

SPECIFICATIONS

- None for Addendum 01

DRAWINGS

- None for Addendum 01

PRIOR APPROVALS

- None for Addendum 01

SECTION 01 1000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Specification and drawing conventions.
5. Miscellaneous provisions.

B. Related Requirements:

1. Division 01 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 PROJECT INFORMATION AND CONTACTS

A. Project Identification: NDSU Langdon REC - Greenhouse Addition.

1. Project Location: 9280 107th Ave NE, Langdon, ND 58249.
2. Owner: North Dakota State University
3. Owner's Representative: Randy Mehlhoff, Ag Facilities Manager

B. Architect: ICON Architectural Group, 3187 Bluestem Drive Suite 2, West Fargo, ND 58078.
Attn: Matt Leake matt.leake@iconarchitects.com ;

OR Keith Swenson keith.swenson@iconarchitects.com

C. Architect's Consultants: The Architect has retained the following design professionals who have prepared designated portions of the Contract Documents:

1. Mechanical Engineer: CMTA, Inc. 2201 12th St N, Ste E, Fargo, ND 58102, Attn: Ross Young ross.young@cmta.com

- 2. Electrical Engineer: CMTA, Inc. 2201 12th St N, Ste E, Fargo, ND 58102, Attn: Trevor Fredrickson tavor.fredrickson@cmta.com
- 3. Structural Engineer: ICON Architectural Group 3187 Bluestem Drive Suite 2, West Fargo, ND 58078. Attn: Tim Olson. timolson@iconarchitects.com

D. The Work of Project is defined by the Contract Documents and consists of the following:

- 1. The work consists of a new 700 to 1,000 ~~1,100 to 1,300~~ square foot metal stud framed addition and greenhouse onto the existing Langdon Research Extension Center Agronomy Lab building in Langdon, North Dakota.

E. Type of Contract:

- 1. Project will be constructed under coordinated, concurrent multiple contracts. See Division 01 Section "Multiple Contract Summary" for a description of work included under each of the multiple contracts and for the responsibilities of Project coordinator. Contracts for this Project include the following:
 - a. General Construction
 - b. Mechanical Construction
 - c. Electrical Construction

1.4 ACCESS TO SITE

- A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- B. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Driveways, Walkways and Entrances: Keep driveways loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.5 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard.
 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.
- D. Construction Budget: The Owners total anticipated construction budget is \$655,000 and the construction team estimate is broken out as General Construction - \$475,000, Mechanical Construction - \$100,000 and Electrical Construction - \$80,000.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 1000

SECTION 09 5123 - ACOUSTICAL TILE CEILINGS**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

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

1.2 SUMMARY

Section Includes:

Acoustical tiles and suspension systems for interior ceilings.

Products furnished, but not installed under this Section, include anchors, clips, and other ceiling attachment devices to be cast in concrete.

1.3 PREINSTALLATION MEETINGS

Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

Product Data: For each type of product.

A. Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of sizes indicated below:

Acoustical Tiles: Set of full-size Samples of each type, color, pattern, and texture.

1. Exposed Moldings and Trim: Set of 6-inch-long Samples of each type and color.

1.5 INFORMATIONAL SUBMITTALS

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:

Ceiling suspension-system members.

1. Structural members to which suspension systems will be attached.
2. Method of attaching hangers to building structure.

Furnish layouts for cast-in-place anchors, clips, and other ceiling attachment devices whose installation is specified in other Sections.

Size and location of initial access modules for acoustical tile.

3. Items penetrating finished ceiling and ceiling-mounted items including the following:

Lighting fixtures.

- a. Diffusers.
- b. Grilles.
- c. Sprinklers.
- d. Access panels.
- e. Perimeter moldings.

1.6 CLOSEOUT SUBMITTALS

Maintenance Data: For finishes to include in maintenance manuals.

A. Warranty Data: For individual products to include in Owner's manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

Acoustical Ceiling Units: Full-size tiles equal to 2 percent of quantity installed.

1.8 QUALITY ASSURANCE

Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

Build mockup of typical ceiling area as shown on Drawings.

1. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.9 DELIVERY, STORAGE, AND HANDLING

Deliver acoustical tiles, suspension-system components, and accessories to Project site 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.

A. Before installing acoustical tiles, permit them to reach room temperature and a stabilized moisture content.

B. Handle tiles carefully to avoid chipping edges or damaging units in any way.

1.10 FIELD CONDITIONS

Environmental Limitations: Do not install acoustical tile ceilings until spaces are enclosed and weathertight, 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.

Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical tile ceiling installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

Source Limitations: Obtain each type of acoustical ceiling panel and its supporting suspension system from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

Flame-Spread Index: Class A according to ASTM E 1264.

1. Smoke-Developed Index: 50 or less.

Fire-Resistance Ratings: Comply with ASTM E 119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

Indicate design designations from UL or from the listings of another qualified testing agency.

2.3 ACOUSTICAL TILES (ACT)

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:

Armstrong World Industries, Inc.

1. CertainTeed Corporation.
2. Chicago Metallic Corporation.
3. Rulon International Inc.
4. United States Gypsum Company.
5. USG Corporation.

Acoustical Tile Standard: Provide manufacturer's standard tiles of configuration indicated that comply with ASTM E 1264 classifications as designated by type, form, pattern, acoustical rating, and light reflectance unless otherwise indicated.

B. Classification: Provide fire-resistance-rated tiles as follows:

Type and Form: Type III, mineral base with painted finish; Form 1, nodular.

Color: As indicated on Drawings.

- C. Size: 24" x 24".
- D. Light Reflectance (LR): Not less than 0.85.
- E. Ceiling Attenuation Class (CAC): Not less than 35.
- F. Noise Reduction Coefficient (NRC): Not less than 0.70.
- G. Edge/Joint Detail: Tegular.
- H. Thickness: 3/4 inch.

2.4 METAL SUSPENSION SYSTEM

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:

Armstrong World Industries, Inc.

1. CertainTeed Corporation.
2. Chicago Metallic Corporation
3. United States Gypsum Company.

Metal Suspension-System Standard: Provide manufacturer's standard, direct-hung, fully concealed, metal suspension system and accessories of type, structural classification, and finish indicated that complies with applicable requirements in ASTM C 635/C 635M.

High-Humidity Finish: Where indicated, provide coating tested and classified for "severe environment performance" according to ASTM C 635/C 635M.

Wide-Face, Capped, Double-Web, Fire-Rated Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet, prepainted, electrolytically zinc coated, or hot-dip galvanized, G30 coating designation; with prefinished 15/16-inch-wide metal caps on flanges.

Cap Finish: Painted white.

~~Narrow Face, Steel Capped, Double Web, Fire Rated Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet; prepainted, electrolytically zinc coat, or hot-dip galvanized, G30 coating designation; with prefinished cold-rolled, 9/16-inch-wide metal caps on flanges.~~

~~Cap Finish: Painted white.~~

2.5 ACCESSORIES

Attachment Devices: Size for five times the design load indicated in ASTM C 635/C 635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

Wire Hangers, Braces, and Ties: Provide wires as follows:

Zinc-Coated, Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.

Retention Clip: #44 by Armstrong or equivalent; six (6) per 2x4 tile, in vestibules.

Install in all vestibules.

2.6 METAL EDGE MOLDINGS AND TRIM

Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations complying with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for of suspension-system runners.

PART 3 - EXECUTION

3.1 EXAMINATION

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

- A. Examine acoustical tiles before installation. Reject acoustical tiles that are wet, moisture damaged, or mold damaged.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

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

- A. Layout openings for penetrations centered on the penetrating items.

3.3 INSTALLATION

Install suspended acoustical tile ceilings according to ASTM C 636/C 636M, seismic design requirements, and manufacturer's written instructions.

Suspend ceiling hangers from building's structural members and as follows:

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.

1. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
2. 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.
3. Secure wire hangers to ceiling suspension members and to supports above with a minimum of three tight turns. Connect hangers directly to structure 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.
4. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both the structure to which hangers are attached and the type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
5. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
6. 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.
7. Do not attach hangers to steel deck tabs.
8. Do not attach hangers to steel roof deck. Attach hangers to structural members.
9. 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.
10. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.

Secure bracing wires to ceiling suspension members and to supports with a minimum of four 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.

- B. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical tiles.

Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends. Miter corners accurately and connect securely.

1. Do not use exposed fasteners, including pop rivets, on moldings and trim.

Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.

- C. Install acoustical tiles with undamaged edges and fit accurately into suspension-system runners and edge moldings. Scribe and cut tiles at borders and penetrations to provide precise fit.

Arrange directionally patterned acoustical tiles as follows:

As indicated on reflected ceiling plans.

- a. Install tiles with pattern running in one direction parallel to long axis of space.
- b. Install tiles in a basket-weave pattern.

For square-edged tiles, install tiles with edges fully hidden from view by flanges of suspension-system runners and moldings.

2. For reveal-edged tiles on suspension-system runners, install tiles with bottom of reveal in firm contact with top surface of runner flanges.
3. For reveal-edged tiles on suspension-system members with box-shaped flanges, install tiles with reveal surfaces in firm contact with suspension-system surfaces and tile faces flush with bottom face of runners.
4. Paint cut edges of tiles remaining exposed after installation; match color of exposed tile surfaces using coating recommended in writing for this purpose by acoustical tile manufacturer.

3.4 ERECTION TOLERANCES

Suspended Ceilings: Install main and cross runners level to a tolerance of 1/8 inch in 12 feet, non-cumulative.

- A. Moldings and Trim: Install moldings and trim to substrate and level with ceiling suspension system to a tolerance of 1/8 inch in 12 feet, non-cumulative.

3.5 ADJUSTING

Clean exposed surfaces of acoustical tile ceilings, including trim and edge moldings. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage.

- A. Remove and replace tiles and other ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 09 5123