ADDENDUM NUMBER TWO

To the Drawings and Project Manual

Dated: May 13, 2019

Entitled: MISSOURI ORTHOPAEDIC INSTITUTE
MRI 3T WIDE BORE
UM Project # CP190661

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Addendum Dated: June 6, 2019
CHANGES TO THE PROJECT MANUAL

1. SECTION 07 21 00 – THERMAL INSULATION
   a. **ADD** item 2.1, A, 1, c: “Hunter Panels XCI Foil” as an acceptable manufacturer/product.

2. SECTION 07 92 00 – JOINT SEALANTS
   b. **ADD** item 2.2, A, 1, d: “Pecora 890 NST” as an acceptable manufacturer/product.

3. SECTION 08 14 16 – FLUSH WOOD DOORS
   a. **MODIFY** item 2.1, Basis of Design to read “Marshfield-Algoma”; **DELETE** Durable / Rhino Doors.
   b. **MODIFY** 2.1,A to include the following acceptable manufacturers.
      i. Eggers
      ii. Graham
      iii. VT Industries

CHANGES TO THE DRAWINGS

ARCHITECTURAL
None

MECHANICAL
None

ELECTRICAL

1. SHEET E001 – GENERAL NOTES, SYMBOLS & LEGENDS
   a. **MODIFY** Luminaire Schedule
      i. Fixture type B1: Approved equal is: “LITON: LHABLD6-12C025-UE-D1OP1-T35-C90-LRB615”
      ii. Fixture type B2: Approved equal is: “LITON: LHABLD6-15C035-UE-D1OP1-T35-C90-LRB615”
      iii. Fixture type F1: Approved equal is: “Hubbell Lighting (Light Control) 6L-LG-D-4FT-04-SOF-C1-35K(90CRI)-D040; Driver: D05-1C-UNV-W1”
iv. Fixture type F1: Approved equal is: “Hubbell Lighting (Light Control) 6L-LG-D-4FT-04-SOF-C1-35K(90CRI)-D040; Driver: D05-1C-UNV-W1”

v. Fixture type F2 & F2E: Approved equal is: “Hubbell Lighting (Light Control) 6L-LG-D-8FT-08-SOF-C1-35K(90CRI)-D040; Driver: D05-1C-UNV-W1”

END OF ADDENDUM NUMBER TWO

Attachments:

**SPECIFICATIONS:**
- 07 21 00, 07 92 00, 08 14 16

**DRAWINGS:**
- E001
SECTION 07 21 00 - THERMAL INSULATION

PART 1 - GENERAL

1.1 SUMMARY
A. Section Includes:
   1. Foam-plastic board insulation.
   2. Glass-fiber blanket insulation.

1.2 ACTION SUBMITTALS
A. Product Data: For each type of product indicated.

1.3 QUALITY ASSURANCE
A. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1.4 DELIVERY, STORAGE, AND HANDLING
A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.
B. Protect foam-plastic board insulation as follows:
   1. Do not expose to sunlight except to necessary extent for period of installation and concealment.
   2. Protect against ignition at all times. Do not deliver foam-plastic board materials to Project site before installation time.
   3. Quickly complete installation and concealment of foam-plastic board insulation in each area of construction.

PART 2 - PRODUCTS

2.1 FOAM-PLASTIC BOARD INSULATION
A. Foil faced, polyisocyanate board insulation: ASTM C 1289, Type 1, Class 2, with maximum flame spread and smoke developed indexes of 75 and 450, respectively, based on tests performed on unfaced core on thickness up to 4”.

1. Manufacturers
   a. Basis of Design: Dow Chemical Company Therma Sheathing, 3” thick with a stabilized R value of 19.8 or approved equal
   b. R Max, Inc.
   c. Hunter Douglas, XCI Foil

2. Location: Exterior face of new sheathing at MRI magnet access infill, above grade.

B. Fasteners for attaching insulation through sheathing to studs: Wind-lock ci fasteners and washers attached in pattern as recommended by insulation manufacturer.

2.2 GLASS-FIBER BLANKET INSULATION.

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. CertainTeed Corporation.
2. Guardian Building Products, Inc.
4. Owens Corning.

B. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

C. Unfaced, Glass-Fiber Blanket Insulation: ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

D. Location: Fill for miscellaneous voids and spaces.

E. Sustainability Requirements: Provide glass-fiber blanket insulation as follows:

1. Free of Formaldehyde: Insulation manufactured with 100 percent acrylic binders and no formaldehyde.

PART 3 - EXECUTION

3.1 PREPARATION

A. Clean substrates of substances that are harmful to insulation or that interfere with insulation attachment.
3.2 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's written instructions applicable to products and applications indicated.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.

C. Extend insulation to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

D. Provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

3.3 PROTECTION

A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 07 21 00
SECTION 07 92 00 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Silicone joint sealants.
   2. Mildew-resistant joint sealants.
   3. Latex joint sealants.

B. Related Requirements:
   1. Section 079219 "Acoustical Joint Sealants" for sealing joints in sound-rated construction.

1.2 ACTION SUBMITTALS

A. Product Data: For each joint-sealant product.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: An authorized representative who is trained and approved by the manufacturer.

1.4 FIELD CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:
   1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
   2. When joint substrates are wet.
   3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
   4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL
A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another, with existing sealants and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. VOC Content of Interior Sealants: Sealants and sealant primers used inside the weatherproofing system shall comply with the following:
   1. Architectural sealants shall have a VOC content of 250 g/L or less.
   2. Sealants and sealant primers for nonporous substrates shall have a VOC content of 775 g/L or less.

C. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 SILICONE JOINT SEALANTS

A. Silicone, S, NS, 100/50, NT: Single-component, nonsag, plus 100 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 100/50, Use NT.
   1. Products: Subject to compliance with requirements, provide one of the following:
      a. GE Construction Sealants; SCS2700 SilPruf LM.
      c. Tremco, Spectrem 4
      d. Pecora; 890 NST

2.3 MILDEW-RESISTANT JOINT SEALANTS

A. Mildew-Resistant Joint Sealants: Formulated for prolonged exposure to humidity with fungicide to prevent mold and mildew growth.

B. Silicone, Mildew Resistant, Acid Curing, S, NS, 25, NT: Mildew-resistant, single-component, nonsag, plus 25 percent and minus 25 percent movement capability, nontraffic-use, acid-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Use NT.
   1. Products: Subject to compliance with requirements, provide one of the following:
      a. Dow Corning Corporation; 786-M White.
      b. GE Construction Sealants; SCS1700 Sanitary.
      c. Tremco Incorporated; Tremsil 200.

2.4 LATEX JOINT SEALANTS

A. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.
1. Products: Subject to compliance with requirements, provide one of the following:
   a. BASF Construction Chemicals, LLC, Building Systems; Sonolac.
   c. Pecora Corporation; AC-20.
   d. Sherwin-Williams Company (The); 850A.
   e. Tremco Incorporated; Tremflex 834.

2.5 JOINT-SEALANT BACKING
   A. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
   B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.6 MISCELLANEOUS MATERIALS
   A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
   B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
   C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION
   A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.
   B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION
A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
   a. Metal.
   b. Glass.
   c. Porcelain enamel.
   d. Glazed surfaces of ceramic tile.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer’s written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.

3.4 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.6 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Joints in vertical and horizontal nontraffic surfaces.

1. Joint Locations:
   a. Exterior joints between aluminum and precast concrete (color to match aluminum color).
   b. Aluminum to aluminum joints (color to match aluminum color).
   c. Joints where casework or cabinets meet walls (clear).
   d. Joints at top of wall protection (clear).

2. Joint Sealant: Silicone, S, NS, 100/50, NT.
3. Joint-Sealant Color: As selected by Architect from manufacturer’s full range of colors.
   a. Multiple colors based on materials being sealed.

B. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces not subject to significant movement.
1. Joint Locations:
   a. Joints where door frames meet floors.
   b. Perimeter joints between interior wall surfaces and frames of interior doors, windows and window sills.


C. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal nontraffic surfaces.

1. Joint Locations:
   a. Joints between plumbing fixtures and adjoining walls, floors, and counters.

2. Joint Sealant: Silicone, mildew resistant, acid curing, S, NS, 25, NT.


END OF SECTION 07 92 00
PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Solid-core doors with wood-veneer faces.
2. Factory finishing flush wood doors.
3. Factory fitting flush wood doors to frames and factory machining for hardware.

B. Related Requirements:

1. Division 08 Section "Hollow Metal Frames".
2. Division 08 Section "Glazing".
3. Division 08 Section "Door Hardware".

1.2 ACTION SUBMITTALS

A. Product Data: For each type of door. Include details of core and edge construction and trim for openings. Include factory-finishing specifications.

B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:

1. Dimensions and locations of blocking.
2. Dimensions and locations of mortises and holes for hardware.
3. Dimensions and locations of cutouts.
4. Undercuts.
5. Requirements for veneer matching.
6. Doors to be factory finished and finish requirements.
7. Fire-protection ratings for fire-rated doors.

C. Samples for Verification:

1. Factory finishes applied to actual door face materials, approximately 8 by 10 inches, for each material and finish. For each wood species and transparent finish, provide set of three Samples showing typical range of color and grain to be expected in finished Work.

   a. Finish veneer-faced door Samples with same materials proposed for factory-finished doors.
   b. Provide 4 - 8” x 8” samples for stain color to match existing doors applied to specified veneer with finish system applied over stain. Provide stepped colors ranging 2 steps lighter and 1 step darker than what is believed to match existing.
1.3 INFORMATIONAL SUBMITTALS
   A. Sample Warranty: For special warranty.

1.4 QUALITY ASSURANCE
   A. Manufacturer Qualifications: A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body.
   B. Vendor Qualifications: A vendor that is certified for chain of custody by an FSC-accredited certification body.

1.5 DELIVERY, STORAGE, AND HANDLING
   A. Comply with requirements of referenced standard and manufacturer's written instructions.
   B. Package doors individually in plastic bags or cardboard cartons.
   C. Mark each door on bottom rail with opening number used on Shop Drawings.

1.6 FIELD CONDITIONS
   A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during remainder of construction period.

1.7 WARRANTY
   A. Special Warranty: Manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
      1. Failures include, but are not limited to, the following:
         a. Warping (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section.
         b. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span.
      2. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.

PART 2 - PRODUCTS

FLUSH WOOD DOORS
2.1 MANUFACTURERS

A. Manufacturer: Basis of Design, Marshfield-Algoma Durable / Rhino Doors Signature Series, or equal from the following companies

1. Algoma Hardwoods, Inc.
3. Eggers
4. Graham
5. VT Industries

B. Source Limitations: Obtain flush wood doors from single manufacturer.

2.2 FLUSH WOOD DOORS, GENERAL

A. Quality Standard: In addition to requirements specified, comply with WDMA I.S.1-A, "Architectural Wood Flush Doors."

B. Certified Wood: Flush wood doors shall be certified as "FSC Pure" or "FSC Mixed Credit" according to FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship," and to FSC STD-40-004, "FSC Standard for Chain of Custody Certification."

C. Low-Emitting Materials: Fabricate doors with adhesives and composite wood products that do not contain urea formaldehyde.

D. WDMA I.S.1-A Performance Grade: Extra Heavy Duty.

E. Particleboard-Core Doors:

1. Particleboard: ANSI A208.1, Grade LD-1, made with binder containing no urea-formaldehyde.
2. Particleboard: Straw-based particleboard complying with ANSI A208.1, Grade LD-2 or M-2, except for density.
3. Blocking: Provide wood blocking in particleboard-core doors as needed to eliminate through-bolting hardware.
4. Provide doors with structural-composite-lumber cores instead of particleboard cores for doors indicated to receive exit devices.

2.3 VENEER-FACED DOORS FOR TRANSPARENT FINISH

A. Interior Solid-Core Doors

1. Grade: Premium, with Grade A faces.
2. Species: Select white maple
3. Cut: Plain sliced (flat sliced).
5. Assembly of Veneer Leaves on Door Faces: Center-balance match.
6. **Pair and Set Match:** Provide for doors hung in same opening or separated only by mullions.

7. **Room Match:** Match door faces within each separate room or area of building. Corridor-door faces do not need to match where they are separated by 20 feet or more.

8. **Exposed Vertical and Top Edges:** Same species as faces or a compatible species - edge Type A.

9. **Construction:** Five plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before veneering. Faces are bonded to core using a hot press.

10. **WDMA I.S.1-A Performance Grade:** Heavy Duty.

### 2.4 LIGHT FRAMES AND LOUVERS

A. Wood moldings to match existing doors at non fire-rated doors.

### 2.5 FABRICATION

A. Factory fit doors to suit frame opening sizes indicated.

B. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, BHMA-156.115-W, and hardware templates.

1. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.

C. Openings: Factory cut and trim openings through doors.

D. Rated Doors: Apply label in a clearly visible location and must have no finish applied to label. Do not apply labels to doors that are not either smoke or fire rated.

### 2.6 FACTORY FINISHING

A. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.

1. Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on top and bottom edges, edges of cutouts, and mortises.

B. Factory finish doors.

C. Transparent Finish:

1. Grade: Premium.
2. Finish: WDMA TR-6 catalyzed polyurethane.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors and installed door frames, with Installer present, before hanging doors.
   1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
   2. Reject doors with defects.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Hardware: For installation, see Section 087100 "Door Hardware."

B. Installation Instructions: Install doors to comply with manufacturer’s written instructions and referenced quality standard, and as indicated.

C. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

3.3 ADJUSTING

A. Adjusting: Fire Rated and Smoke Rated doors shall meet the following NFPA 80 tolerances:
   1. Positive latching:
      a. Not more than 1/8" gap between face of door and jamb (top and sides).
      b. Not more than 1/8" gap between face of door and stop.
      c. Not more than 1/8" gap at meeting edges of double wood doors.
      d. Maximum ¾" gap at bottom of door to finish floor.
   2. Smoke Resistant doors: non-rated doors:
      a. Same as above except deviations of +/− 1/16" from 1/8"

B. Operation: Rehang or replace doors that do not swing or operate freely.

C. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 08 14 16