



Division of Finance and Business Operations

Procurement & Strategic Sourcing  
5700 Cass Avenue, suite 4200  
Detroit, Michigan 48202  
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August 12, 2015

**Addendum #1 To  
Request for Proposal  
For Student Center Fifth Floor and Seventh Floor Renovation: Project 034-266828 and 034-261806**

**Minutes of the Pre-bid Conference  
Dated August 5, 2015**

**The Addendum must be acknowledged on your lump sum bid.**

The pre-bid conference for Request for Proposal for **Student Center Fifth Floor and Seventh Floor Renovation**, Project **034-266828 and 034-261806** was held on **August 12, 2015**, at **2:00 pm** (local time) – at Detroit, MI 48202. **Valerie Kreher** reviewed the highlights of the pre-bid package, especially concerning details such as bid due dates and who Contractors may contact during the live bid process. **Chrystal Camilleri** and **Stephen J. Gedert** from **Neumann/Smith Architecture** discussed the technical aspects of the project and bid requirements, and conducted the Q & A session.

NOTE: You must have attended a prebid conference in order to be eligible to bid on a particular project. Receipt of minutes or addenda without being at a prebid conference does not qualify your company to bid.

**Numerous simple questions and answers were addressed at the pre-bid meeting. Some of the issues were as follows:**

1. **Minimum Participation**
  - A. Pre-registration for the Pre-Bid meeting is required. In the event that we do not have four (4) or more eligible bidders pre-registered, the University reserves the right to postpone the Pre-bid meeting with up to 4 business hour notice.
  - B. If less than 4 individual contractor firms attend the mandatory pre-bid meeting, the University reserves the right, at its sole discretion, to either reschedule the pre-bid conference or proceed and offer a second pre-bid conference date. (Attendance at only one pre-bid conference will be required).
  - C. On the day of the bid opening, if less than 3 sealed bids are received, the University reserves the right, at its sole discretion, to rebid the project in an effort to obtain greater competition. If the specifications are unchanged during the rebid effort, any contractor who submitted a bid will be given the option of keeping its bid on file for opening after the second bid effort, or of having the bids returned to them unopened.
1. Sworn Statement Requirements: The University tracks its level of spend along a number of socio-economic categories. This includes its spend with Diverse organizations, its spend with Detroit based organizations, and its spend with Michigan based organizations. To assist with this, The University has reporting requirements to be included with the submission of your bid and for Pay Applications submitted by the successful contractor.
2. A bid bond is not required for bids below \$50,000. Otherwise, a bid bond (5%) will be required for the full amount of the bid.
3. Performance Bond and Material & Labor Payment Bond requirements are listed in the specifications of the job. Performance & Material & Labor Payment Bonds must be provided by the awarded Contractor with the submission of the signed contract; which will then be submitted to FP&M management for counter signature.
4. The awarded Contractor must provide the required Certificate of Insurance in compliance with Section 800, article 11 of the bid specifications prior to commencement of any work.
5. Please review the insurance section carefully, there are some changes in the documents, such as the addition of professional liability insurance and changes in the amounts of required insurance for most of the categories
6. If your company has not previously done business with the University you may go to the Purchasing website at **www.purchasing.wayne.edu** and look for the "new vendor" link under "Information for Vendors" on the left. You may submit a new vendor request form and an IRS form W-9. This will register your company on our vendor list. (NOTE: this does not replace the listserv.)
7. This Project Requires the Contractor and any subcontractors to compensate all employees who come to the job site at no less than State of Michigan Prevailing Wage Rates. A Prevailing Wage Rate Schedule is included in Section 00410 of the Bid Specifications. Contractors must review these requirements to be sure they are in compliance with the requirements of the University and the State of Michigan. Contact the State of Michigan if further information on prevailing wage rate is needed at website **[http://www.michigan.gov/dleg/0,1607,7-154-27673\\_27706---,00.html](http://www.michigan.gov/dleg/0,1607,7-154-27673_27706---,00.html)**. Contractors must post wages at the job site in compliance with the complete Prevailing Wage Rate listing provided in Bid Documents.

8. 1099 workers and subcontractors using 1099 workers are NOT acceptable
9. Certified Payroll must be provided with each of the contractor's pay applications for all workers who worked at the job site, in compliance with the State of Michigan policy. Failure to provide certified payroll will constitute breach of contract and pay applications will be returned unpaid, and remain so until satisfactory supporting documents are provided.
10. Signed waivers from all Subcontractors and suppliers must accompany Pay Applications or they will be returned for such documentation prior to approval.
11. A properly executed sworn statement is required from all tiers of contractors, and sub-contractors indicating sub-contractors and suppliers which provide services or product of \$1,000.00 or greater. Sworn statements must accompany applications for payment
12. All documents listed in the Front End Section 0410-2 "Wayne State Prevailing Wage Requirements" must accompany applications for payment. Failure to do so will result in the entire application package returned for correction.
13. A checklist of all Pay Application requirements can be found in Section 00430-1.
14. Note: there is a new section 440 Contractors Performance Evaluation. This is a new part of the contract and will be performed at the end of every job.
15. The competency and responsibility of Bidders will be considered in making the award. The Owner does not obligate himself to accept the lowest or any other bids. The Owner reserves the right to reject any and all bids and to waive any informalities in the Proposals
16. Parking on WSU campus lots and structures are \$7.00/access. Contractor must build parking into their lump sum bid. There is no parking allowed on the malls.
17. Section 300, Form of Proposal has changed very recently, review carefully and complete in its entirety to avoid disqualification.
18. The contractors **must** fill out our prequalification form. They can attach additional information if they would like but at a minimum the information requested must be filled in on our form so that we do not have to hunt to find the information.
19. Contractors who have withdrawn a bid after a University bid opening and/or refused to enter into a contract with the University upon notification of award within the last 3 years are not eligible to bid on this project.
20. The intent is to award both projects to the same General Contractor.
21. The Form of Proposal contains a space to put your total in for each one of the two projects and then the total for both together. There are also multiple alternates and unit pricing. There is also an allowance on the Form of Proposal. Please read carefully.
22. Project hours of operation are 7:00am – 5:00 pm. Anything else requires advance notice and approval.
23. There will be some coordination regarding noise and timing as the building is fully occupied and some floors have College Entrance Exams taking place at different times and locations
24. Prequalification meeting will be held the first business day after bid openings. Contractors must be available. The Project Manager will coordinate the meetings.
25. Prequalification meeting includes Schedule of Values from the Contractor, including a list of Contractor's subcontractors and other qualifications required by the documents.
26. An unsigned contract will be given to the successful Contractor at the conclusion of the Prequalification meeting, if all aspects of the bid are in order. The Contractor has 5 business days to return the contract to the Project Manager for University counter signature. The contractor must also submit a Performance Bond as outlined above and a Certificate of Insurance in the same 5 business day period. In the event the Contractor fails to return the documents in this 5 day period, the University reserves the right to award the contract to the next most responsive bidder.
27. There is a responsibility matrix on the front page of the drawings. Contractors encourage to review it
28. Building Management System Controls will be by Siemens
29. The required abatement for this project is the responsibility of this Contractor.
30. Hazardous Disposal Box Containers will be provided to this Contractor by WSU OEHS office. Contractor is responsible to comply with WSU OEHS disposal handling notification and management procedures.
31. Air Monitoring is the responsibility of the Owner
32. Mechanical Testing and Balancing is the responsibility of the Owner
33. The building will be occupied during construction. Disruptive work will need to be coordinated during off hours.
34. WSU Electrical Inspector is Greg Calme.
35. No abatement anticipated in the existing CAPS suite.
36. Recommendation to the WSU BOG is targeted for 9-11-15.
37. WSU BOG response anticipated on 9-25-15
38. There are corrected drawings, specifications and write-up text posted along with this addendum 1, Minutes.
39. An Optional second walk thru has been scheduled. It will take place at 9:00, on August 20, 2015. Please meet at the Student Center First Floor North Entrance. Be sure to be on time if you wish to participate, once the building engineer leaves the meeting place you may not be able to catch up or find the group. This second walk thru is only to view the area and not discuss scope. Any questions must be made in writing through the bid process.
40. Permit requirements are the responsibility of the awarded contractor as listed on Section 800 Article 4.
41. Contractor must provide their own dumpster if needed, which must be rubber or plywood padded if placed on concrete. Location and duration must be coordinated with the project manager. Dumpster must be tagged with the name of your company clearly displayed. Any lawn damage must be restored. A trash chute may be considered for this project.
42. Questions are due by **August 20, 2015** at 12:00 noon

43. Bids are due no later than 2:00 p.m., **August 24, 2015**, at 5700 Cass Ave. Room 4200 AAB.  
**No public bid opening will be held.**
44. **Time of Completion:** The Contract is expected to be fully executed on or about 15 calendar days after successful bidder qualification and recommendation of award. The successful bidder (Contractor) agrees to start construction **immediately after** receipt of a fully executed contract and Purchase Order, and to complete the work as follows: Substantial Completion, and State Approved Inspections (if appropriate), no later than Substantial Completion for the 5th floor work by May 2016, and the 7th floor by April 2016.
45. A copy of the sign in sheet is available for downloading from the University Purchasing Web Site at **[http://www.forms.procurement.wayne.edu/Adv\\_bid/Adv\\_bid.html](http://www.forms.procurement.wayne.edu/Adv_bid/Adv_bid.html)**.
46. This is an occupied area, awarded Contractor must be considerate of environment (noise, cleanliness, etc)
47. **IMPORTANT- This is an addendum which MUST be acknowledged on your bid form**

**We will require two copies each of your lump sum proposals, vendor qualification questionnaire and your bid bond documents.**

All questions concerning this project must be emailed to: **Valerie Kreher**, Procurement & Strategic Sourcing. Email: **rfpteam2@wayne.edu**, and copy **Leiann Day**, Procurement Analyst, at **leiann.day@wayne.edu@wayne.edu**.

**Do not contact either FP&M or the Design Firm directly as this may result in disqualification of your proposal.**

Thank you for interest shown in working with Wayne State University.

**Valerie Kreher**  
**Senior Buyer**

CC: **Chrystal Camilleri** (Project Manager), **Leiann Day**, **Procurement Analyst**, Attendee list.



SOUTHFIELD • DETROIT

## ADDENDUM #1

400 Galleria Offcentre Suite 555 Southfield, Michigan 48034 phone 248.352.8310 fax 248.352.1821 www.neumannsmith.com	DATE	August 14, 2015
	PROJECT NAME	Wayne State University Student Center 5 <sup>th</sup> Floor Renovation Student Center 7 <sup>th</sup> Floor Renovation
	PROJECT NUMBER	2015025 WSU 5 <sup>th</sup> Floor: 034-266828 WSU 7 <sup>th</sup> Floor: 034-261806
	DISTRIBUTION	WSU FP&M                      Bidders – Via WSU                      DSD

The following revisions and/or additions to the plans and specifications are issued before the award of the contract and are to be included in the original Bid Package Drawings and Specifications, dated 07.28.2015. This Addendum shall take precedence over anything contrary to the original drawings and specifications and shall be referred to hereinafter as part of the contract documents.

All revisions to the drawings have a cloud around the revision.

The following documents are being revised and / or reissued with this Addendum. All changes are indicated in the following written text.

### 5<sup>th</sup> Floor:

- Specifications: 000110, 238316 (Issued new) and 232113 (Revised but not reissued)
- Architectural Drawings: A001, D205 and A402
- Mechanical Drawings: M4, M5, M7 (M1 and M8 revised but not reissued)
- Electrical Drawings: E1 (E3 revised but not reissued)

### 7<sup>th</sup> Floor:

- Specifications: 000110, 238316 (Issued new) and 232113 (Revised but not reissued)
- Architectural Drawings: A001, A037, D207, A207, A402, A807, A921
- Mechanical Drawings: M4, M5, M7 (M1 and M8 revised but not reissued)
- Electrical Drawings: E1, E3 (E2 revised but not reissued)

### 5<sup>th</sup> & 7<sup>th</sup> Floor - Issued By WSU Under Separate Cover

- Specifications: Abatement Specifications

No other drawings, specifications or other documents are being revised. All Addendum revisions are indicated on the drawings, unless otherwise noted.

Include all costs in the bid proposal (base bid and alternate bids.)

All drawings are being reissued via WSU Purchasing Department.

## **ADDENDUM #1**

WSU SCB 5<sup>th</sup> & 7<sup>th</sup> Floor Renovations

Project Number 2015025 (WSU 034-266828 & 034-261806)

August 14, 2015

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### **5<sup>th</sup> FLOOR REVISIONS**

#### **SPECIFICATIONS**

##### **Item No. SP1**

**Refer to Section 00 01 10**

- A. Revise the Table of Contents to reflect the new mechanical specification issued with this addendum.

#### **ARCHITECTURAL DRAWINGS**

##### **Item No. A1**

**Refer to Sheet A001**

- A. Revise Index of Drawings to reflect the drawings being reissued with this addendum.
- B. Clarify Alternate 2A description.

##### **Item No. A2**

**Refer to Sheet D205**

- A. Clarify location of Stair G existing rated enclosure on north wall of the stairwell.

##### **Item No. A3**

**Refer to Sheet A402**

- A. Revise location of opening in exterior wall to coordinate with location shown on floor plan.

#### **MECHANICAL AND ELECTRICAL DRAWINGS**

Refer to attached Addendum #1 text, dated August 14, 2015, prepared by DiClemente Siegel Design

## **ADDENDUM #1**

WSU SCB 5<sup>th</sup> & 7<sup>th</sup> Floor Renovations

Project Number 2015025 (WSU 034-266828 & 034-261806)

August 14, 2015

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### **7<sup>th</sup> FLOOR REVISIONS**

#### **SPECIFICATIONS**

##### **Item No. SP1**

**Refer to Section 00 01 10**

- A. Revise the Table of Contents to reflect the new mechanical specification issued with this addendum.

#### **ARCHITECTURAL DRAWINGS**

##### **Item No. A1**

**Refer to Sheet A001**

- A. Revise Index of Drawings to reflect the drawings being reissued with this addendum.
- B. Clarify Alternate 2B description.

##### **Item No. A2**

**Refer to Sheet A037 and D207**

- A. Clarify location of Stair G existing rated enclosure on north wall of the stairwell.

##### **Item No. A3**

**Refer to Sheet A207**

- A. Revise Key Note 3 to include providing opening in block wall for new electrical panel.
- B. Add partition type 6 to north wall of Storage Room 783.

##### **Item No. A4**

**Refer to Sheet A402**

- A. Revise location of opening in exterior wall to coordinate with location shown on floor plan.

##### **Item No. A5**

**Refer to Sheet A807 and A921**

- A. Indicate finishes for Storage Room 783.
- B. Show VCT flooring on 7<sup>th</sup> Floor Finish Plan for Storage Room 783.

#### **MECHANICAL AND ELECTRICAL DRAWINGS**

Refer to attached Addendum #1 text, dated August 14, 2015, prepared by DiClemente Siegel Design

**END OF ADDENDUM #1**



**Wayne State University  
Student Center 5<sup>th</sup> Floor Renovation**

WSU No. 034-266828

DSD Project No. 15-4806.00

**08/14/15**

This instruction is issued prior to awarding the contract, to provide for certain changes, deletions and/or additions to the Plans and Specifications for the above named project as hereinafter specified.

Unless otherwise specified herein, the work covered under this instruction shall be in accordance with the basic contract documents. The work hereinafter specified shall be included in the contract.

Drawings M1, M4, M5, M7, M8 and E1 and E3 are revised as a part of this Addendum.

Specification Sections 232113 and 238316 are revised as a part of this Addendum.

**D R A W I N G S**

**MECHANICAL**

1. Refer to Drawing Sheet M1 (Not Issued):
  - a. Revised Mechanical Sheet Index for renamed drawing M4.
2. Refer to Drawing Sheet M4 (Re-Issued):
  - a. Renamed drawing to Enlarged Plans – Mechanical
  - b. Added Enlarged Plan Fourth Floor – Mechanical New Work.
  - c. Added Key Note 1 to Enlarged Plan Fifth Floor – Mechanical Demolition
  - d. Added Demolition Keyed Note 1.
  - e. Added New Work Keyed Notes 1,2 and 3
3. Refer to Drawing Sheet M5 (Re-Issued):
  - a. Added Floor Mounted Bladder Style Expansion Tank Detail
  - b. Revised expansion tank note on Hot Water Heating Piping Diagram.
4. Refer to Drawing Sheet M7 (Re-Issued):
  - a. Added Bladder Style Expansion Tank Schedule.

**FIRE PROTECTION**

1. Refer to Drawing Sheet M8 (Not-Issued):
  - a. Disconnect existing sprinkler riser piping and modify existing sprinkler piping and associated sprinkler head in Room 545 as part of fire suppression system upgrades.

**08/14/15**

**ELECTRICAL**

1. Refer to Drawing Sheet E1 (Re-Issued):
  - a. Updated Electrical Alternate designations and descriptions
2. Refer to Drawing Sheet E3 (Not Issued):
  - a. The relocated light fixture at Column line E between Column lines 18 & 19 shall be connected to the emergency circuit. Added Key Note 11 to noted light fixture.

**SPECIFICATIONS**

1. Refer to Specification Section 232113 – Hydronic Piping Systems (Not Issued):
  - a. Revised Paragraph 2.4, Item D to Bladder style expansion tank, in lieu of Diaphragm.
  - b. Added Paragraph 2.4, item F Air and Sediment Coalescing Separator
2. Added Specification Section 238316 – Radiant-Heating Hydronic Panels (Issued Herewith):

**End of Addendum No. 1**

cc: Project File, Stick Set





**Wayne State University  
Student Center 7<sup>th</sup> Floor Renovation**

WSU No. 034-261806

DSD Project No. 14-4804.00

**08/14/15**

This instruction is issued prior to awarding the contract, to provide for certain changes, deletions and/or additions to the Plans and Specifications for the above named project as hereinafter specified.

Unless otherwise specified herein, the work covered under this instruction shall be in accordance with the basic contract documents. The work hereinafter specified shall be included in the contract.

Drawings M1, M4, M5, M7, M8, E1, E2 and E3 are revised as a part of this Addendum.

Specification Sections 232113 and 238316 are revised as a part of this Addendum.

**D R A W I N G S**

**MECHANICAL**

1. Refer to Drawing Sheet M1 (Not Issued):
  - a. Revised Mechanical Sheet Index for renamed drawing M4.
2. Refer to Drawing Sheet M4 (Re-Issued):
  - a. Renamed drawing to 'Enlarged Plans – Mechanical'
  - b. Added 'Fourth Floor Enlarged Plan – Mechanical New Work'.
  - c. Added Demolition Keyed Note 1.
  - d. Added New Work Keyed Notes 1, 2 and 3
3. Refer to Drawing Sheet M5 (Re-Issued):
  - a. Added Floor Mounted Bladder Style Expansion Tank Detail.
  - b. Revised expansion tank note on Hot Water Heating Piping Diagram.
4. Refer to Drawing Sheet M7 (Re-Issued):
  - a. Added Bladder Style Expansion Tank Schedule.

**FIRE PROTECTION**

1. Refer to Drawing Sheet M8 (Not-Issued):
  - a. Disconnect existing sprinkler riser piping and modify existing sprinkler piping and associated sprinkler heads in Room 752, 752.1, 752.3, 752.4 and 745 as part of fire suppression system upgrades.

**08/14/15**

**ELECTRICAL**

1. Refer to Drawing Sheet E1 (Re-Issued):
  - a. Updated Electrical Alternates designations and descriptions as indicated.
2. Refer to Drawing Sheet E2 (Not Issued):
  - a. In '7<sup>th</sup> Floor Plan – Electrical Lighting Demolition', removed Key Note 2 from existing Women's Toilet Room 744, existing Men's Toilet Room 746 and Janitor 745 area.
3. Refer to Drawing Sheet E3 (Re-Issued):
  - a. In '7th Floor Plan – Lighting' made the following revisions:
    - i. Revised the new location for relocated panelboard 'RP-A1'.
    - ii. Added Key Note 11 to Women's Toilet Room 744 and Men's Toilet Room 746.
    - iii. Relocated two (2) Type 'LBA' light fixtures in Shared Conference Room 769 and Quiet Study Room 771.
    - iv. Added Key Note 25 in the Chapel 775 for the wall fixture outside the Confessional Room.
    - v. Added existing light fixtures to remain to Janitor 745 and Restroom 749
  - b. In '7th Floor Plan – Power & Systems' made the following revisions:
    - i. Revised the new location for relocated panelboard 'RP-A1'.
    - ii. Removed Key Note Symbols and corrected AHU unit designation in Mech/Elec 747.
    - iii. In Breakroom 752.3 revised the outlets on the north wall to be GFI type.
    - iv. In Reception/Corridor 790, added Key Note 20 to the north wall.
    - v. Deleted Key Note 14 in Lounge/Study Area 794.
  - c. Added New Work Keyed Note 25
  - d. Deleted New Work Keyed Note 9.

**SPECIFICATIONS**

1. Refer to Specification Section 232113 – Hydronic Piping Systems (Not Issued):
  - a. Revised Paragraph 2.4, Item D to Bladder style expansion tank, in lieu of Diaphragm.
  - b. Added Paragraph 2.4, item F Air and Sediment Coalescing Separator.
2. Added Specification Section 238316 – Radiant-Heating Hydronic Panels (Issued Herewith):

**End of Addendum No. 1**

cc: Project File, Stick Set

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Firm	Section		Revision	Bulletin
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	<b>Divisions 29 through 49 – NOT USED</b>			

## REFERENCE DOCUMENTS

STANDARDS FOR COMMUNICATIONS INFRASTRUCTURE (Revised 13 March 2015)

## SECTION 238316 - RADIANT-HEATING HYDRONIC PANELS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes hydronic radiant heating panels for space-heating applications.

#### 1.2 SUBMITTALS

- A. Product Data: For each type of radiant heating pipe, fitting, manifold, specialty, and control.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other Work. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
  - 1. Wiring Diagrams: Diagram power, signal, and control wiring and differentiate between manufacturer-installed and field-installed wiring.
- C. Coordination Drawings: Reflected ceiling plans drawn to scale and coordinating penetrations and ceiling-mounted items. Show the following:
  - 1. Ceiling suspension assembly members.
  - 2. Method of attaching hangers to building structure.
  - 3. Size and location of initial access modules for acoustical tile.
  - 4. Ceiling-mounted items including lighting fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.
- D. Operation and maintenance data.

#### 1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

#### 1.4 COORDINATION

- A. Coordinate layout and installation of radiant heating panels and suspension system components with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression-system components, and partition assemblies.

## 1.5 WARRANTY

- A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Special Warranty: Written warranty, executed by manufacturer agreeing to repair or replace electric radiant heating panels that fail in materials or workmanship within specified warranty period.
- C. Warranty Period: Two (2) years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Hydronic Radiant Heating Panels:
    - a. Aerotech.
    - b. Sterling
    - c. Price

### 2.2 RADIANT HYDRONIC PANELS

- A. Description: Linear extruded-aluminum panel with copper water coil, mechanically attached to backside, suitable for lay-in installation flush with T-bar ceiling grid.
  - 1. Copper Coil: ½" type L with 3/8" Type L panel interconnects.
  - 2. Nominal Size: 24-inch panel thickness 0.100". width, length as indicated.
  - 3. Color: Manufacturer's standard off-white as selected by Architect. Apply two coats baked enamel paint only to finished side of panels after assembly paint on plenum side of panel not acceptable.
  - 4. 1" – ¾ lb density insulation required on panel.
  - 5. Galvanized soft-annealed steel wire, 126A.
  - 6. Furnish and install radiant panels by radiant panel manufacturer.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas to receive radiant heating panels for compliance with requirements for installation tolerances and other conditions affecting performance.

- B. Examine roughing-in for hot-water piping connections to verify actual locations before radiant heating panel installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Install radiant heating panels level and plumb.
- B. Hang or support cabinet unit heaters according to Division 15 Section "Hangers and Supports."
- C. Install wall-mounting thermostats and switch controls in electrical outlet boxes at heights to match lighting controls.
- D. Furnish and install radiant panels by radiant panel manufacturer.

### 3.3 CONNECTIONS

- A. Piping installation requirements are specified in other Division 15 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Unless otherwise indicated, install shutoff valve and union or flange at each connection.
- C. Install piping to allow service and maintenance.
- D. Ground equipment.
- E. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

### 3.4 FIELD QUALITY CONTROL

- A. Testing: Perform the following field quality-control testing and report results in writing:
  - 1. Test and adjust controls and safeties.
- B. Repair or replace malfunctioning units. Retest as specified above after repairs or replacements are made.

### 3.5 CLEANING

- A. After installing panels, inspect unit cabinet for damage to finish. Remove paint splatters and other spots, dirt, and debris. Repair damaged finish to match original finish.



### 3.6 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain radiant heating panels.
  - 1. Train Owner's maintenance personnel on procedures and schedules for starting and stopping, troubleshooting, servicing, and maintaining equipment.
  - 2. Review data in maintenance manuals. Refer to Division 1 Section "Closeout Procedures."
  - 3. Review data in maintenance manuals. Refer to Division 1 Section "Operation and Maintenance Data."
  - 4. Schedule training with Owner, through Architect, with at least seven days' advance notice.

END OF SECTION 238316

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## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
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END OF SECTION 238316