

ADDENDUM #1

ISSUE DATE: **July 28, 2023**

RE: **Weeks Hall 3rd Floor Lab Renovation Project**
UNIVERSITY OF WISCONSIN - MADISON
UWSA Project No. **A-22-024**

BID OPENING: For MEP BIDDERS: 2:00 P.M., THURSDAY AUGUST 10, 2023

For GENERAL PRIME CONTRACTORS: 2:00 PM, THURSDAY, AUGUST 24, 2023

FROM: **Hammel, Green and Abrahamson, Inc. Architects and Engineers**
333 East Erie Street
Milwaukee, WI 53202

TO: Prospective Bidders

This addendum forms a part of the Contract Documents and modifies the original Contract Documents dated **July 13, 2023** as noted below. Acknowledge receipt of this Addendum by inserting the number and issue date of this addendum in the blank space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of 21 pages. This text document of two (2) pages attached Commissioning of Plumbing Spec Section of 18 pages, and Sheet A243 (1) page for the total of 21 pages.

PREBID WALKTHROUGH (occurred on Thursday, July 20, 1:00 p.m.) QUESTIONS AND ANSWERS:

1. Question was asked about clarifying if the material of new wood lab casework is to closely match the existing lab casework?
Response: Yes any new wood lab casework should match wood species, veneer, and hardware where new is or infill cannot be accomplished with existing casework.
2. Question was asked if the Island casework is to be like the G000 cover sheet image or what is in the specification?
Response: Refer to spec for specific casework types
3. Question: Sheet A203 Wet Lab Island has an F13 keynote indicating that it should match existing?
Response: Note reads "Lab Bench with integral power and epoxy top <CNTP-7> Top to match existing." Provide epoxy top that matches existing epoxy in room bench to be white metal.
4. Question: A620, elevations 5, 6, 7, 8 indicate the use of plastic laminate casework around the walls of Analytics Lab 356. The center island in this room, elevations 12 & 13 indicates lab casework. Please confirm that these materials are correct.
Response: Correct 5,6,7,8 is plastic laminate casework, 12 & 13 is metal lab casework
5. Question: Fume hood elevations on sheet A620 show service fixtures with an "E" designation. There is no such service fixture designation? The fume hood superstructures show boxes at the bottom each fume hood superstructure that would indicate 120V/20A duplex electrical receptacles. Please indicate that stand duplex electrical outlets are required at each fume hood and that the "E" service fixture designation will be removed?
Response: E indicates Duplex electrical outlet
6. Question: Confirm that upper ceiling enclosures are not required at the fume hoods.
Response: Yes – no overhead hood enclosures
7. Question: Sheet A620, elevation 4 shows a MILL-Q water polisher. This unit is indicated as CFCI. Who do you anticipate providing this unit? Can you provide a specification or model

to indicate what is required?

Response: See attached A243 for model number and manufacturer – plumbing contractor to provide and install milliQ system

8. Question: Confirm that all demolition and storage of reused lab casework and tops will be the general contractor's responsibility?

Response: Correct that is the GPC's responsibility

9. Question: Is this a single or multiphase project?

Response: Single

10. Is there a loading dock that can accept a 54' long tractor trailer?

Response: Yes, but not recommended

11. Question: All construction waste disposal will be the general contractor's responsibility.

Response: Yes

CHANGES TO BIDDING REQUIREMENTS:

12. NONE in this Addendum

CHANGES TO SPECIFICATIONS (DIVISIONS 2 THRU 28):

1. 22 08 00 Commissioning of Plumbing
 - a. Entire Section 18 pages

CHANGES/ADDITIONS TO DRAWINGS:

1. A243 – Equipment schedule update to Milli Q

END OF ADDENDUM

Hammel, Green and Abrahamson, Inc. Architects and Engineers
333 East Erie Street
Milwaukee, WI 53202

For the Board of Regents of the University of Wisconsin
On Behalf of the University of Wisconsin – Madison
1860 Van Hise Hall, 1220 Linden Drive
Madison, Wisconsin 53703

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SECTION 22 08 00
COMMISSIONING OF PLUMBING
BASED ON DFD MASTER SPECIFICATION DATED 12/1/16

PART 1 - GENERAL

SCOPE

This section includes commissioning forms for construction verification and functional performance testing. Included are the following topics:

PART 1 - GENERAL

Scope

Related Work

Reference

Submittals

PART 2 - PRODUCTS

(Not Used)

PART 3 – EXECUTION

Commissioning Forms

CV-22 11 00 Facility Water Distribution

CV-22 42 00 Commercial Plumbing Fixtures

CV-22 60 00 Laboratory Gas Systems

CV-22 67 00 Processed Water Systems for Laboratories Facilities

RELATED WORK

Section 01 91 01 or 01 91 02 – Commissioning Process

REFERENCE

Applicable provisions of Division 1 shall govern work under this section.

SUBMITTALS

Reference the General Conditions of the Contract for submittal requirements.

Reference Section 01 91 01 or 01 91 02 Commissioning Process for Construction Verification Checklist and Functional Performance Test submittal requirements.

PART 2 – PRODUCTS

(Not Used)

PART 3 – EXECUTION

COMMISSIONING FORMS

Commissioning forms are to be filled in as work progresses by the individuals responsible for installation and shall be completed for each installation phase.

Provide a description of the work completed since the last entry, the percentage of the total work completed for the system for that area and the step of installation or finalization.

Circle Yes or No for each commissioning form item. If the information requested for an item does not apply to the given stage of installation for the system, list it as “N/A”. Explain all discrepancies, negative responses or N/A responses in the negative responses section.

Once the work is 100% complete and the responses to each item are complete and resolved for a given commissioning forms group, mark as complete, initial and date in the spaces provided.

- 1 Provide copies of the commissioning forms to the commissioning agent 2 days prior to construction
- 2 progress meetings.

Sample - Construction Verification Checklist
22 11 00 – Facility Water Distribution

CV-22 11 00 – Facility Water Distribution

Equipment Identification/Tag: _____

Location: _____

A) PRE-INSTALLATION CHECKS

Date	Description of Work Performed	% Complete	Initials	Questions (See details below)		
				1)	2)	3)
				YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO
<input type="checkbox"/> CHECKLIST GROUP COMPLETE				INITIALS: _____	DATE: _____	

Question Details

- 1) All piping, valves, etc. are clean and free of damage prior to installation.
- 2) Temporary protective coating is provided on cast iron and steel valves during storage.
- 3) Temporary end caps are provided on piping and fittings until installation.

Negative Responses

Group/Item	Date Found	Found By	Location	Reason for Negative Response	Resolved	Date Resolved	Resolution
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		

Sample - Construction Verification Checklist
22 11 00 – Facility Water Distribution

B) GENERAL PIPING INSTALLATION CHECKS

Date	Description of Work Performed	% Complete	Initials	Questions (See details below)									
				1)	2)	3)	4)	5)	6)	7)	8)	9)	10)
				YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
				YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
				YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
<input type="checkbox"/> CHECKLIST GROUP COMPLETE				INITIALS: _____				DATE: _____					

Question Details

- 1) Piping is free to expand and contract without noise or damage to hangers, joints, or the building.
- 2) Piping is installed in a manner to ensure that insulation will not contact adjacent surfaces.
- 3) Piping is installed with sufficient pitch and arranged in a manner to ensure drainage of entire system.
- 4) Changes in pipe sizes are made with the proper size reducing fittings, reducing elbow or reducing tees, and no bushings are utilized.
- 5) Connections between dissimilar pipe materials are made with dielectric fittings.
- 6) Pipe hanger spacing complies with specification requirements.
- 7) All equipment requiring maintenance is accessible (valves, strainers, etc.).
- 8) Piping allows access to equipment that is part of this system or another system.
- 9) Water piping not installed within exterior walls.
- 10) Open pipe ends capped at completion of work day.

Negative Responses

Group/Item	Date Found	Found By	Location	Reason for Negative Response	Resolved	Date Resolved	Resolution
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		

Sample - Construction Verification Checklist
22 11 00 – Facility Water Distribution

C) VALVE & FITTING INSTALLATION CHECKS

Date	Description of Work Performed	% Complete	Initials	Questions (See details below)						
				1)	2)	3)	4)	5)	6)	7)
				YES	YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO	NO
				YES	YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO	NO
				YES	YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO	NO
				YES	YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO	NO
<input type="checkbox"/> CHECKLIST GROUP COMPLETE				INITIALS: _____			DATE: _____			

Question Details

- 1) All valves are in a horizontal or upright vertical position (not inverted) with handles in an accessible position.
- 2) Valve handle extensions are provided where needed per the specification.
- 3) Drainage valves provided at all low points and downstream of riser isolation valves.
- 4) Isolation valves provided at all equipment connections, main branches and sub-branches, “T” connections, and as necessary for repairing the system as specified in contract documents.
- 5) Riser shutoff valve and a capped hose thread drain valve at the bottom of each riser provided.
- 6) All strainers in piping system have ball valves installed at the tapped screen retainer.
- 7) Yard and wall hydrants installed with discharge above minimum grade clearance requirements noted in specifications.

Negative Responses

Group/Item	Date Found	Found By	Location	Reason for Negative Response	Resolved	Date Resolved	Resolution
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		

Sample - Construction Verification Checklist
22 11 00 – Facility Water Distribution

D) TESTING CHECKS

Date	Description of Work Performed	% Complete	Initials	Questions (See details below)							
				1)	2)	3)	4)	5)	6)	7)	8)
				YES	YES	YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO	NO	NO
				YES	YES	YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO	NO	NO
				YES	YES	YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO	NO	NO
				YES	YES	YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO	NO	NO
<input type="checkbox"/> CHECKLIST GROUP COMPLETE				INITIALS: _____				DATE: _____			

Question Details

- 1) Piping tested utilizing water at specified pressure and duration as per specification.
- 2) All leaks identified during testing have been repaired and test re-done until satisfactory conditions are accomplished.
- 3) Test conducted with all piping of tested system or section visible during testing.
- 4) Proceeding system chlorination, all outlets flushed for a minimum of 1 minute with clean water until water runs clear.
- 5) Following initial flush system filled with water and chlorine at 50 PPM and allowed to stand for 24 hours, or system filled and with a water solution containing at least 200 PPM of chlorine and allowed to stand for 3 hours.
- 6) Following specification prescribed stand times for chlorine treatment system flushed until chlorine levels are at source water levels.
- 7) 24 hours after final flushing, water samples of the number and location specified by the Engineer taken for lab testing and results show the absence of coliform bacteria.

Negative Responses

Group/Item	Date Found	Found By	Location	Reason for Negative Response	Resolved	Date Resolved	Resolution
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		

Sample - Construction Verification Checklist
22 11 00 – Facility Water Distribution

E) FINALIZATION CHECKS

Date	Description of Work Performed	% Complete	Initials	Questions (See details below)			
				1)	2)	3)	4)
				YES NO	YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO	YES NO
<input type="checkbox"/> CHECKLIST GROUP COMPLETE				INITIALS: _____		DATE: _____	

Question Details

- 1) All exposed piping which passes through a wall, ceiling or floor is provided with escutcheon plates.
- 2) Piping labels and direction of flow is provided per specification requirements.
- 3) All penetrations through fire rated wall assemblies have been sealed per specification requirements.
- 4) All penetrations through non-rated wall assemblies have been sealed per specification requirements for given space type.

Negative Responses

Group/Item	Date Found	Found By	Location	Reason for Negative Response	Resolved	Date Resolved	Resolution
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		

Sample - Construction Verification Checklist
22 42 00 – Commercial Plumbing Fixtures

CV-22 42 00 – Commercial Plumbing Fixtures

Equipment Identification/Tag: _____

Location: _____

A) INSTALLATION CHECKS

Date	Description of Work Performed	% Complete	Initials	Questions (See details below)									
				1)	2)	3)	4)	5)	6)	7)	8)	9)	
				YES	YES	YES	YES	YES	YES	YES	YES	YES	
				NO	NO	NO	NO	NO	NO	NO	NO	NO	
				YES	YES	YES	YES	YES	YES	YES	YES	YES	
				NO	NO	NO	NO	NO	NO	NO	NO	NO	
				YES	YES	YES	YES	YES	YES	YES	YES	YES	
				NO	NO	NO	NO	NO	NO	NO	NO	NO	
<input type="checkbox"/> CHECKLIST GROUP COMPLETE			INITIALS:	_____					DATE:	_____			

Question Details

- 1) Fixture traps and service stops easily accessible for service.
- 2) Fixture and carriers secured per manufacturer requirements and level and plumb to finished surface.
- 3) Pipe penetrations covered with escutcheons.
- 4) Openings between walls, floors and fixtures sealed with mildew-resistant silicone sealant same color as fixture.
- 5) Fixtures tested and fully operational.
- 6) Fixture valves adjusted for intended water flow rate to fixtures to eliminate splashing, noise or overflow
- 7) Self-closing lavatory faucets adjusted to 15 second cycle.
- 8) Shower valve temperature limit stops set to 110 degree maximum outlet temperature.
- 9) Fixtures and trim cleaned using manufacturer's recommended cleaning methods and materials.

Negative Responses

Group/Item	Date Found	Found By	Location	Reason for Negative Response	Resolved	Date Resolved	Resolution
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		

Sample - Construction Verification Checklist
22 60 00 – Gas Systems for Laboratories Facilities

CV-22 60 00 – Laboratory Gas Piping

Equipment Identification/Tag: _____

Location: _____

A) PRE-INSTALLATION CHECKS

Date	Description of Work Performed	% Complete	Initials	Questions (See details below)		
				1)	2)	3)
				YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO
<input type="checkbox"/> CHECKLIST GROUP COMPLETE				INITIALS:	_____	DATE: _____

Question Details

- 1) All piping, valves, etc. are packaged and plugged, and free of damage prior to installation.
- 2) All installers are “Certified Installers” per manufacturer of piping systems.
- 3) Temporary end caps are provided on piping and fittings until installation.

Negative Responses

Group/Item	Date Found	Found By	Location	Reason for Negative Response	Resolved	Date Resolved	Resolution
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		

Sample - Construction Verification Checklist
22 60 00 – Gas Systems for Laboratories Facilities

B) GENERAL PIPING INSTALLATION CHECKS

Date	Description of Work Performed	% Complete	Initials	Questions (See details below)					
				1)	2)	3)	4)	5)	6)
				YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO
				YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO
				YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO
<input type="checkbox"/> CHECKLIST GROUP COMPLETE				INITIALS: _____			DATE: _____		

Question Details

- 1) Piping is free to expand and contract without noise or damage to hangers, joints, or the building.
- 2) Changes in pipe sizes are made with the proper size reducing fittings, reducing elbow or reducing tees, and no bushings are utilized.
- 3) Pipe hanger spacing complies with specification requirements for given type of piping.
- 4) All equipment requiring maintenance is accessible (valves, etc.).
- 5) Piping allows access to equipment that is part of this system or another system.
- 6) All pipe joints are silver brazed per specification.
- 7) Nitrogen purging was use continuously during the brazing process.

Negative Responses

Group/Item	Date Found	Found By	Location	Reason for Negative Response	Resolved	Date Resolved	Resolution
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		

C) COMPRESSED AIR PIPING INSTALLATION CHECKS

Date	Description of Work Performed	% Complete	Initials	Questions (See details below)									
				1)	2)	3)	4)	5)	6)	7)	8)	9)	10)
				YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Sample - Construction Verification Checklist
22 60 00 – Gas Systems for Laboratories Facilities

Date	Description of Work Performed	%	Initials	Questions (See details below)										
				YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
<input type="checkbox"/> CHECKLIST GROUP COMPLETE				INITIALS: _____				DATE: _____						

Question Details

- 1) Piping and fittings have been joined per the specifications and or manufacturer installation instructions.
- 2) Air supply from compressor/pump assembly has been isolated from piping with wire braid reinforced rubber hose or polyethylene tubing.
- 3) Take-offs enter top of main air piping wherever possible.
- 4) All piping is supported per specification requirements and is not be attached to existing cabling, existing tubing, plumbing or steam piping, ductwork, ceiling supports or electrical or communications conduit.
- 5) All equipment requiring maintenance is accessible (valves, junction boxes, etc.).
- 6) All valves are in an upright vertical position with handles in a horizontal position and fully operated without removal or alteration of handle.
- 7) Isolation valves provided at all equipment connections, main branches and sub-branches.
- 8) Piping purged with nitrogen during brazing.
- 9) Piping purged with dry nitrogen prior to connection to inlets, outlets or gauges until no contamination evident on test cloth.
- 10) Open pipe ends capped at end of work day.

Negative Responses

Group/ Item	Date Found	Found By	Location	Reason for Negative Response	Resolved YES / NO	Date Resolved	Resolution
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		

Sample - Construction Verification Checklist
22 60 00 – Gas Systems for Laboratories Facilities

D) COMPRESSED AIR AND TESTING & FINALIZATION CHECKS

Date	Description of Work Performed	% Complete	Initials	Questions (See details below)										
				1)	2)	3)	4)	5)	6)	7)	8)	9)	10)	
				YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
				YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
				YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
				YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
<input type="checkbox"/> CHECKLIST GROUP COMPLETE				INITIALS: _____			DATE: _____							

Question Details

- 1) Piping preliminarily tested utilizing nitrogen at specified pressure and duration as per specification.
- 2) All leaks identified during preliminary testing have been repaired and test re-done until no leaks are present.
- 3) Piping tested utilizing nitrogen at specified pressure and duration as per specification.
- 4) Entire testing procedures have been witnessed by DSF representative.
- 5) Medical gas piping has been certified by NFPA authorized representative.
- 6) Test conducted with all piping of tested system or section visible during testing.
- 7) All exposed piping which passes through a wall, ceiling or floor is provided with escutcheon plates.
- 8) Piping labels and direction of flow is provided per specification requirements.
- 9) All penetrations through fire rated wall assemblies have been sealed per specification requirements.
- 10) All penetrations through non-rated wall assemblies have been sealed per specification requirements for given space type.

Negative Responses

Group/Item	Date Found	Found By	Location	Reason for Negative Response	Resolved	Date Resolved	Resolution
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		

Sample - Construction Verification Checklist
22 67 00 – Processed Water Systems for Laboratories Facilities

CV-22 67 00 – Processed Water Systems for Laboratories Facilities

Equipment Identification/Tag: _____

Location: _____

A) PRE-INSTALLATION CHECKS

Date	Description of Work Performed	% Complete	Initials	Questions (See details below)		
				1)	2)	3)
				YES	YES	YES
				NO	NO	NO
				YES	YES	YES
				NO	NO	NO
				YES	YES	YES
				NO	NO	NO
<input type="checkbox"/> CHECKLIST GROUP COMPLETE				INITIALS: _____		DATE: _____

Question Details

- 1) All piping, valves, etc. are clean and free of damage prior to installation.
- 2) Temporary end caps are provided on piping and fittings until installation.
- 3) Piping is to be installed by trained installers per the manufacturer.

Negative Responses

Group/Item	Date Found	Found By	Location	Reason for Negative Response	Resolved	Date Resolved	Resolution
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		

Sample - Construction Verification Checklist
22 67 00 – Processed Water Systems for Laboratories Facilities

B) GENERAL PIPING INSTALLATION CHECKS

Date	Description of Work Performed	% Complete	Initials	Questions (See details below)								
				1)	2)	3)	4)	5)	6)	7)	8)	9)
				YES	YES	YES	YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO	NO	NO	NO
				YES	YES	YES	YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO	NO	NO	NO
<input type="checkbox"/> CHECKLIST GROUP COMPLETE				INITIALS: _____				DATE: _____				

Question Details

- 1) Piping is free to expand and contract without noise or damage to hangers, joints, or the building.
- 2) Piping is installed in a manner to ensure that insulation will not contact adjacent surfaces.
- 3) Piping is installed with sufficient pitch and arranged in a manner to ensure drainage of entire system.
- 4) Changes in pipe sizes are made with the proper size reducing fittings, reducing elbow or reducing tees, and no bushings are utilized.
- 5) Pipe hanger spacing complies with specification requirements.
- 6) All equipment requiring maintenance is accessible (valves, strainers, etc.).
- 7) Piping allows access to equipment that is part of this system or another system.
- 8) Water piping not installed within exterior walls.
- 9) Open pipe ends capped at completion of work day.

Negative Responses

Group/Item	Date Found	Found By	Location	Reason for Negative Response	Resolved	Date Resolved	Resolution
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		

Sample - Construction Verification Checklist
22 67 00 – Processed Water Systems for Laboratories Facilities

C) VALVE & FITTING INSTALLATION CHECKS

Date	Description of Work Performed	% Complete	Initials	Questions (See details below)					
				1)	2)	3)	4)	5)	6)
				YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO
				YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO
				YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO
<input type="checkbox"/> CHECKLIST GROUP COMPLETE				INITIALS: _____			DATE: _____		

Question Details

- 1) All valves are in an upright vertical position with handles in a horizontal position.
- 2) All valves can be fully operated without removal or alteration of handle, including provisions for specified insulation thickness of piping.
- 3) Drainage valves provided at all low points and downstream of riser isolation valves.
- 4) Isolation valves provided at all equipment connections, main branches and sub-branches, “T” connections, and as necessary for repairing the system as specified in contract documents.
- 5) Riser shutoff valve and a capped hose thread drain valve at the bottom of each riser provided.
- 6) All strainers in piping system have ball valves installed at the tapped screen retainer.

Negative Responses

Group/Item	Date Found	Found By	Location	Reason for Negative Response	Resolved	Date Resolved	Resolution
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		

Sample - Construction Verification Checklist
22 67 00 – Processed Water Systems for Laboratories Facilities

D) TESTING CHECKS

Date	Description of Work Performed	% Complete	Initials	Questions (See details below)					
				1)	2)	3)	4)	5)	6)
				YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO
				YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO
				YES	YES	YES	YES	YES	YES
				NO	NO	NO	NO	NO	NO
<input type="checkbox"/> CHECKLIST GROUP COMPLETE				INITIALS: _____		DATE: _____			

Question Details

- 1) Piping tested utilizing distilled water at specified pressure and duration as per specification.
- 2) All leaks identified during testing have been repaired and test re-done until no leaks are present.
- 3) Test conducted with all piping of tested system or section visible during testing.
- 4) Entire testing procedure witnessed by DFD representative.
- 5) After pressure testing system filled and disinfected with solution of distilled or RO water and hydrogen peroxide per manufacturer directions.
- 6) Following initial disinfection system flushed with distilled or RO water until no trace of hydrogen peroxide evident by potassium permanganate test.

Negative Responses

Group/Item	Date Found	Found By	Location	Reason for Negative Response	Resolved	Date Resolved	Resolution
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		

Sample - Construction Verification Checklist
22 67 00 – Processed Water Systems for Laboratories Facilities

E) FINALIZATION CHECKS

Date	Description of Work Performed	% Complete	Initials	Questions (See details below)			
				1)	2)	3)	4)
				YES NO	YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO	YES NO
<input type="checkbox"/> CHECKLIST GROUP COMPLETE				INITIALS: _____		DATE: _____	

Question Details

- 1) All exposed piping which passes through a wall, ceiling or floor is provided with escutcheon plates.
- 2) Piping labels and direction of flow is provided per specification requirements.
- 3) All penetrations through fire rated wall assemblies have been sealed per specification requirements.
- 4) All penetrations through non-rated wall assemblies have been sealed per specification requirements for given space type.

Negative Responses

Group/Item	Date Found	Found By	Location	Reason for Negative Response	Resolved	Date Resolved	Resolution
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		

Functional Performance Test
22 30 00 – Plumbing Equipment

STRUCTURAL ENGINEER
 MECHANICAL/ELECTRICAL/
 PLUMBING ENGINEER
 INTERIOR ARCHITECT

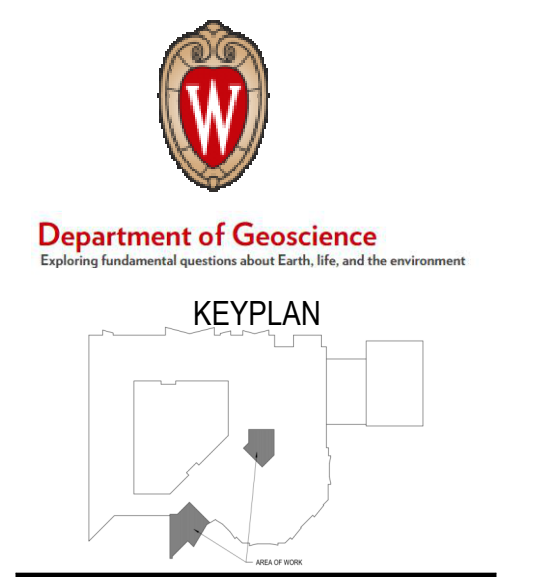
HGA
 333 EAST ERIE STREET
 MILWAUKEE, WI 53202
 414.278.8200

UNIVERSITY OF
 WISCONSIN - MADISON
 WEEKS HALL

1215 W DAYTON ST.
 MADISON, WI 53706

WEEKS HALL
 GEOLOGY LAB
 RENOVATION

UW SYSTEM NO:
 A-22-024
 UW MADISON NO:
 0521-2309



NO	DESCRIPTION	DATE
1	ADDENDUM 1	07/28/2023

ISSUANCE HISTORY - THIS SHEET
 HGA NO. 4200-020-00

**EQUIPMENT PLAN
 AND SCHEDULE-
 LEVEL 03**

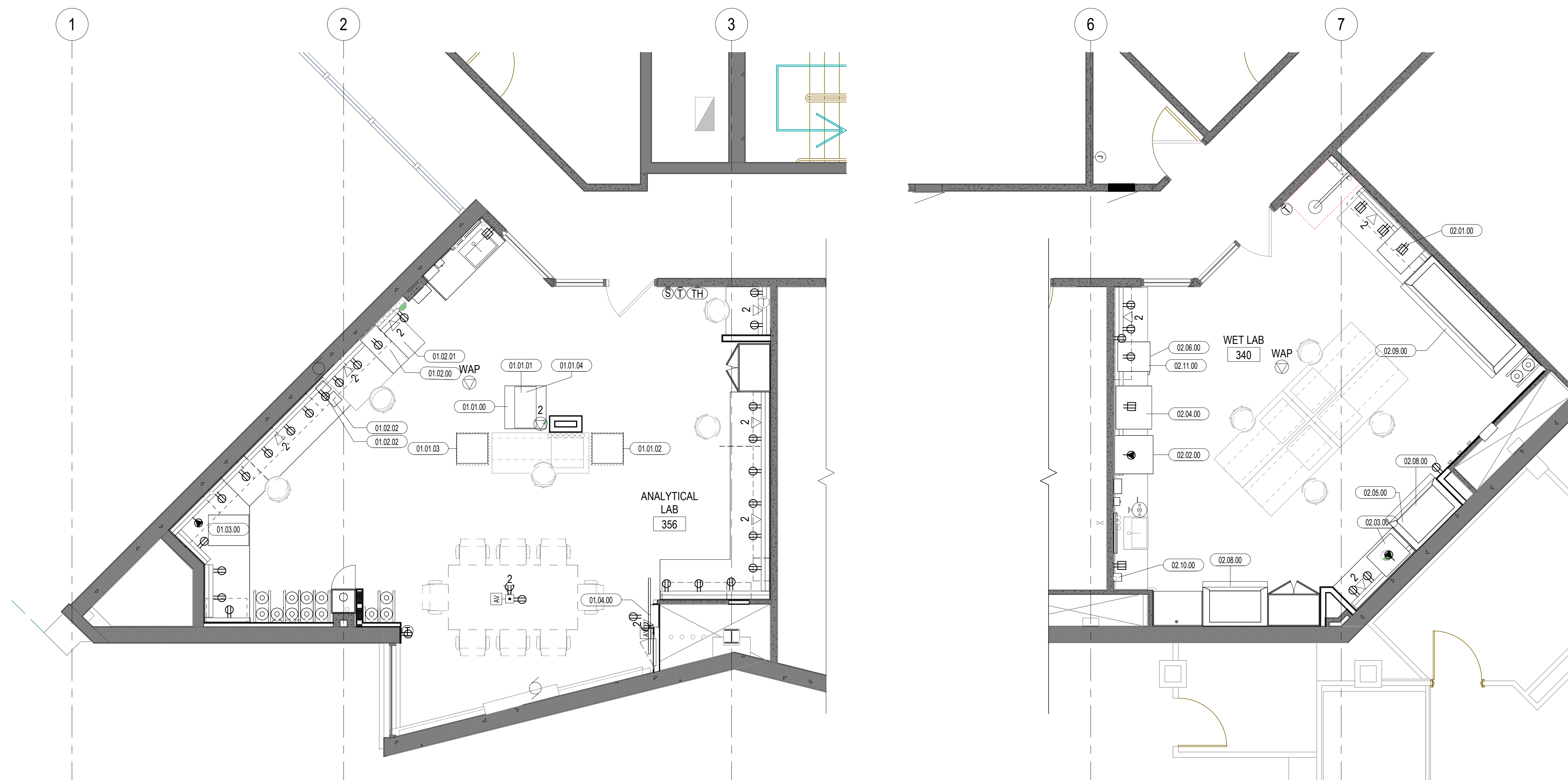
DATE: June 23, 2023

BID DOCUMENTS

A243

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REV #	ROOM NO.	EQUIP ID	QTY	FURNISH/INSTALL	SHORT EQUIP NAME	MANUF	MODEL	ELECTRICAL				MECHANICAL			PLUMBING	COMMENTS				
								VOLT	PHASE	AMPS	WATTS	PLUG-IN OR HARDWIRED	DEDICATED CIRCUIT	ROOM LOAD BTU/HR EACH			EST CFM	COOLING MEDIUM (TEMP)	HUMIDITY	DUCT CONN SIZE
	356	01.01.00	1	OFOI	Delta Q IRMS	Thermo Scientific	QLAEEGAATFABHMZZ	208	1	30	1600	HARDWIRED	Yes	6900	30	64-75 2 DEGREE F/HR	20-70% RH	1/2"	HE, CO2, SO2, O2, AR	FED FROM DELTA Q TRANSFORMER
	356	01.01.01	1	OFOI	Gasbench II	Thermo Scientific	QLAAMGAATFAETMBMZ	208	1	8	1600	PLUGGED INTO DELTA Q	No	1700	-	64-75 DEG. F	20-70% RH	-	HE, CO2, H2, O2	POWERED BY DELTA Q
	356	01.01.02	1	OFOI	Flash EA CNS	Thermo Scientific	EA Isolink CNSOH	208	1	6	1400	PLUGGED INTO DELTA Q	No	6150	-	64-75 DEG. F	20-70% RH	-	HE, O2	POWERED BY DELTA Q
	356	01.01.03	1	OFOI	Flash EA OH	Thermo Scientific	EA Isolink OH	208	1	6	1400	PLUGGED INTO DELTA Q	No	6150	-	64-75 DEG. F	20-70% RH	-	HE, O2	POWERED BY DELTA Q
	356	01.01.04	1	OFOI	Delta Q Transformer	Ametek	ABC600-22	208	1	30	6200	PLUG-IN	Yes	409	-	-	-	-	-	POWERS DELTA Q
	356	01.02.00	1	OFOI	GCMS TSQ	Thermo Scientific	TSQ 9610 MS	100-120	1	15	1800	PLUG-IN	Yes	14323	30	59-95 DEG F	5-95% RH	1"	HE, H2, AR	
	356	01.02.01	1	OFOI	GCMS Trace	Thermo Scientific	TRACE 1600	100-120	1	10	1200	PLUG-IN	Yes	-	-	59-95 DEG F	5-95% RH	-	-	
	356	01.02.02	2	CFCI	Power Conditioner Transformer	Eaton	See Specifications	120	1	20	2400	PLUG-IN	Yes	400	-	-	-	-	-	
	356	01.03.00	1	OFOI	Eltra C/S	Eltra	88200-3017	200-240	1	30	6200	PLUG-IN	Yes	-	-	64-86 DEG. F	< 80% RH	-	PURE O2	NO EXHAUST - NO HALOGEN BEING BURNED
		01.04.00	1	OFCI	TV Mounted	-	See Specifications	120	1	4	480	PLUG-IN	No	1000 ROUGHLY	-	-	-	-	-	
	340	02.01.00	1	OFOI	Drying Oven (Benchtop)	VWR	VWR CATALOG # 89511-406	120	1	12	1440	PLUG-IN	Yes	900	-	65-90 DEG. F	MAX 80% RH	-	-	
	340	02.02.00	1	OFOI	Muffle Furnace	SKUIT	KM-1018	208	1	40	8320	PLUG-IN	Yes	6000	-	-	-	-	-	
	340	02.03.00	1	OFOI	MARS	CEM Corporation	208/230	1	14	3000	PLUG-IN	Yes	1000	125	40-104 DEG. F	-	3"	-		
	340	02.04.00	1	OFOI	Shaking Table	incubating orbital shaker model 500i	5000IR	120	1	8	960	PLUG-IN	Yes	1000	-	59-90 DEG. F	MAX 80% RH	-	-	Symphony Incubating Refrigerating Orbital
	340	02.05.00	1	OFOI	Turbo Vap	Biotage	TurboVap LV	100-120	1	8.3	1000	PLUG-IN (IN FUME HOOD)	Yes	1000	IN HOOD	59-95 DEG F	0-85% RH	-	N2	USED INSIDE FUME HOOD - FED FROM FUME HOOD OUTLET
	340	02.06.00	1	OFOI	Centrifuge	EPPENDORF	5810 VWR CATALOG # 89305-176	120	1	15	1800	PLUG-IN	Yes	-	-	-	-	-	-	
	340	02.08.00	2	CFCI	FH 4ft Floor Mounted	-	See Specifications	120	1	12	1400	HARDWIRED	Yes	390	-	-	12"	N2		
	340	02.09.00	1	CFCI	FH 8ft Floor Mounted	-	See Specifications	120	1	12	1400	HARDWIRED	Yes	880	-	-	(2) 12"	N2, WATER		
ADD 1	340	02.10.00	1	CFCI	MilliQ	Millipore Sigma	Milli-Q Direct	120	1	1.3	160	PLUG-IN	No	-	-	50-104 DEG F	-	-	RO WATER	
	340	02.11.00	1	OFOI	Freezer	BY OWNER	BY OWNER	120	1	1.3	1400	PLUG-IN	Yes	2000	-	TYP 59-90 DEG F	-	-	-	ELECTRICAL SPECS ARE ASSUMED



1 EQUIPMENT PLAN - LEVEL 03 - FOR REFERENCE
 1/4" = 1'-0"