

Planning, Design & Construction



University of California, Riverside

PCL Job No. 5221303

ADDENDUM NO. 6 (3/11/2021)

for the

UCR BATCHELOR HALL RENEWAL PROJECT

PROJECT NO. 950464-950531

University of California, Riverside Planning, Design, & Construction 1223 University Ave., Suite 240 Riverside, CA 92507

ALL BID PACKAGES





PCL Job No. 5221303 Addendum No. 6 – 3/11/21

The following changes, additions, or deletions shall be made to the following documents as indicated for this Project; and all other terms and conditions shall remain the same.

1. Delete the Advertisement for Bids/Proposals – Addendum No. 5 - 3/8/21 and replace it with the attached Advertisement for Bids/Proposals – Addendum No. 6 - 3/11/21.

Note the following changes:

- The proposal deadline is extended from 2:00PM on March 16, 2021 to <u>2:00PM on Tuesday</u>, <u>March 23, 2021</u> (page 6).
- The CA Prevailing Wage determination index for this project is changed from 2019-1 to **2020-2** (page 7).
- 2. Delete the Table of Contents for the Project Manual (Specifications) issued with the original bid documents and replace it with the attached Table of Contents Addendum No. 6 3/11/21.

Note the following changes:

- Specification Section 07 21 00 'Thermal Insulation' was added.
- 3. Add Specification Section 07 21 00 'Thermal Insulation' Addendum No. 6 3/11/21 (attached) to the Project Manual (Specifications).
- 4. Please note the following RFI Questions & Answers:

RFI#	QUESTIONS & ANSWERS
1 - 32	Responded to in Addendum No. 5 (3/8/21).
33	RFI Response Pending.
34 - 40	Responded to in Addendum No. 5 (3/8/21).
41	Question: The RCP's are not very clear as to what is new and what is existing Acoustical ceilings. Please identify between the new and existing ceilings.
	Document Reference: AC-101-A through AC-104-A
	Answer: The only new Acoustical Ceiling is in Wet Lab 2163/2163A.
42 - 44	Responded to in Addendum No. 5 (3/8/21).
45	Question: Please provide a detail for framing at the fire dampers.
	Document Reference: N/A
	Answer: Provide standard framing as required per manufacturer's installation details.
46 - 48	RFI Responses Pending.
49	Question: Please confirm that no BIM will be required for the temporary condition(s) prior to final installation.
	Document Reference: N/A
	Answer: Confirmed.





	where it is located. Document Reference: N/A
	Answer: The Contractor parking lot is located at the corner of Canyon Crest Dr. & Linden St., which is not near Batchelor Hall. If you use this lot, you will likely need to shuttle your workers to and from it. Visit https://transportation.ucr.edu/ for more information.
51	Question: What is the current BAS controls within the building and is there a sole source / acceptable list of controls entities who can work on this project?
	Document Reference: N/A
	Answer: Existing BAS is Johnson Controls Metasys per 255000-1.2.A). Pre-approved acceptable manufacturers per 255000-2.1.A.
52	Question: Phasing - How will the EFs in the penthouse be removed and sequenced with the AHU installation?
	Document Reference: N/A
	Answer: Refer to G-200 series phasing concept drawings. Area B includes temporary exhaust while new exhaust fans installed, and new exhaust fans /ducting provide exhaust for Area A.
53 - 54	RFI Responses Pending.
55	Question: The plumbing diagrams drawings P-801 thru P-806 have more piping runs and connections which are not shown on pipe layout drawings. Which drawings are correct to use? Should we follow the piping diagram drawings for our take-offs?
	Document Reference: P-801 thru P-806
	Answer: Contractor to determine based upon site (virtual) walk thru. Recommend utilizing both -
	diagrams for the required intent in regard to new piping and connections, and plans for routing / ROM dimensions.
56	diagrams for the required intent in regard to new piping and connections, and plans for routing /
56	diagrams for the required intent in regard to new piping and connections, and plans for routing / ROM dimensions. Question: Is it the intention to replace all the Fire Dampers going into the classrooms from the
56	diagrams for the required intent in regard to new piping and connections, and plans for routing / ROM dimensions. Question: Is it the intention to replace all the Fire Dampers going into the classrooms from the mechanical core, or just the ones with a point of connection on that side? Please advise.
56	diagrams for the required intent in regard to new piping and connections, and plans for routing / ROM dimensions. Question: Is it the intention to replace all the Fire Dampers going into the classrooms from the mechanical core, or just the ones with a point of connection on that side? Please advise. Document Reference: N/A Answer: Assume the question is regarding the laboratories as there are no classrooms in this building. FSD's as shown to be provided per the documentation, except where shown as (E) FSD. Intent of new and existing-to-remain fire and/or fire/smoke dampers are shown on the MH series
	diagrams for the required intent in regard to new piping and connections, and plans for routing / ROM dimensions. Question: Is it the intention to replace all the Fire Dampers going into the classrooms from the mechanical core, or just the ones with a point of connection on that side? Please advise. Document Reference: N/A Answer: Assume the question is regarding the laboratories as there are no classrooms in this building. FSD's as shown to be provided per the documentation, except where shown as (E) FSD. Intent of new and existing-to-remain fire and/or fire/smoke dampers are shown on the MH series ducting plans. Question: In the Structural Calculation page 222, they are referring to 3 different types of duct roof
	diagrams for the required intent in regard to new piping and connections, and plans for routing / ROM dimensions. Question: Is it the intention to replace all the Fire Dampers going into the classrooms from the mechanical core, or just the ones with a point of connection on that side? Please advise. Document Reference: N/A Answer: Assume the question is regarding the laboratories as there are no classrooms in this building. FSD's as shown to be provided per the documentation, except where shown as (E) FSD. Intent of new and existing-to-remain fire and/or fire/smoke dampers are shown on the MH series ducting plans. Question: In the Structural Calculation page 222, they are referring to 3 different types of duct roof supports for the Exhaust duct. Please provide a detail for each type of duct roof support.





59	Question: Will it be possible to set all the new AHUs and Lab Exhaust Fans on the roof at the same time to minimize individual crane trips?
	Document Reference: N/A
	Answer: Yes - it would be ideal to set all rooftop equipment at the same time, however the new equipment cannot be located on top of the existing penthouse or adjacent roof locations. New mechanical equipment can only be located on top of the new slab as shown on the construction documents.
60	Question: Drawing P-101-A2 at column's F and 7 shows what appears to be a single process pipe but teeing off in 2 directions. Flow diagrams P-801 thru P-805 indicate multiple systems that tee off and either cap or run to a POC at each level. Please advise whether the "process pipe" (Note 8, P-101-A2) is indicative of all these systems or only some, and what the size and materials are for this/these process pipes?
	Document Reference: P-101-A2; P-801 thru P-805
	Answer: P-101-A2, Keynote 8 is indicative of all systems (piping is showing as stacked vertically) for future connections under "master planning."
61	Question: Although M-100-A2 indicates what type of equipment is shown on MD-100 Key Note #4, please confirm what type of equipment these are and identify the services they require - CHW, HHW, or steam service for example.
	Document Reference: M-100-A2; MD-100
	Answer: Existing-to-remain basement equipment identified are air handling fan coil units, and in addition to the ducting, this equipment requires chilled water for cooling coils (plus coil condensate). Contractor responsible to field verify all systems and piping sizes to reconnect.
62	Question: Are the floors to remain operational during the Demolition period?
	Document Reference: N/A
	Answer: Yes. The building will remain open during the entire construction duration. Certain demolition activities may be scheduled during breaks in the academic calendar.
63	Question: Drawings show piping running along the corridor (HHWS/R, CHWS/R, and ECWS/R) but does not branch out or serve any equipment. Please clarify if we have to provide branch piping outside the corridor. If we provide branch piping, please provide which equipment do we pipe it to.
	Document Reference: N/A
	Answer: Mechanical run-out piping, off of the floor branch piping, shall be provided as required to supply terminal reheat, fan coil cooling, and lab equipment cooling, as/where applicable for the new installation.
64	Question: Without a detailed temporary condition laid out, per direction, the detailed plan will be developed post award and the pricing for this may vary significantly. In order to effectively and economically support continued operation, please confirm that the demolition scope will include multiple mobilizations per phase if required.
	Document Reference: N/A





	Answer: Refer to G-200 series phasing concept drawings; the demolition scope will be phased based on being able to keep those portions of the building that are not under construction fully operational.
65	Question: General Note B on Mechanical Demolition Drawings states in part, "The Mechanical Contractor, in conjunction and direct coordination with the University, shall investigate and perform necessary modifications to (existing) equipment to assure that the systems will perform the same before and after demolition scope has been executed". Please advise if Allowance 1 in the amount of \$180,000 covers this item.
	Document Reference: N/A
	Answer: Yes - that is the intent. A COR with back-up detailing the costs associated with approving the use of the Allowance will be required, including a proposal breaking out the labor, material, equipment, etc.
66	Question: What is the weight capacity of the various areas and levels of the roof? Can small equipment (i.e. skid steer, Brokk machine, Mini-Ex) work on the roof if it is made OSHA-safe?
	Document Reference: N/A
	Answer: Roof live load capacity is 20psf (pounds per square foot). Small excavator and skid steer will exceed 20psf. Contractor to submit engineering calculations for the existing roof prepared by a licensed CA structural engineer in the event the 20psf live load is exceeded to support contractor means and methods of construction. See Sheet S-001 under Design Loads.
67	Question: Can a trash chute be mounted/utilized during demolition? If so, where can it be mounted? Where can we store trash bins? Can the fire lane be used for trash bin pick-ups? Is it allowed to be shut-down temporarily?
	Document Reference: N/A
	Answer: A trash chute can be mounted within the core of the building; exact location to be coordinated. Trash bins will be able to be stored in the grass laydown lot at the southwest corner of the building; see site logistics plan.
68	Question: Will we be allowed to use Lot 11 for employee parking? If not, is any other lot going to be made available for employee parking?
	Document Reference: N/A
	Answer: Lot 11 is not available for employee parking. Subcontractors must make parking arrangements for their own employees or use the Contractor lot at Canyon Crest Dr. & Linden St. Visit https://transportation.ucr.edu/ for more information.
69	Question: Where can we have a laydown area for tools and equipment? Will the laydown yard be fenced-in? Who will provide the fencing? Will PCL or UCR provide security for subcontractor materials, tools, and equipment?
	Document Reference: Logistics & Laydown Plan
	Answer: There is a small courtyard at the north side of the building and a grass area at the west side of the building that are currently designated as laydown areas. PCL will provide fencing and gates for these areas. No security (beyond normal campus security) will be provided - each contractor will be responsible for securing their own materials tools, and equipment. See site logistics plan.





70	Question: Does UCR have a preferred access/egress for the project for subcontractors? Can the ADA
70	ramp located at the south section of Building 'A' be shut-down?
	Document Reference: N/A
	Answer: There is no "preferred access" for subcontractors; necessity and circumstances will dictate access/egress at specific times during the construction period. No ADA ramps can be shut down while the building is open.
71	Question: Is the penthouse demo for Building 'B' broken-up into three phases, or would this be completed all at once?
	Document Reference: N/A
	Answer: The South Wing (B series drawings) penthouse demolition is to be completed as a single phase.
72	Question: Who will carry the scaffold cost since many trades will be using it?
	Document Reference: N/A
	Answer: Each trade's scaffolding and access needs will be different. All trades should carry the cost of scaffolding necessary to safely and efficiently perform the work in their bid package.
73	Question: On Page 8, Advertisement for Bids, the prevailing wage determination referenced is from February 2019. Please clarify. "The award of this project requires that all workers employed on the site be paid not less than the specific prevailing wage rates, as predetermined by the Department of Industrial Relations (reference DIR Project ID 288824 for the UCR Batchelor Hall Renewal project). The California prevailing wage determination index for this project is: 2019-1."
	Document Reference: Advertisement for Bids
	Answer: The CA prevailing wage determination for this project should be 2020-2.
74 - 75	Responded to in Addendum No. 5 (3/8/21).
76	Question: Per the Fire Alarm drawings General Note "E", it is stated that existing conduit and wire can be utilized if a new device is installed into an existing location. Please quantify the number of devices this note pertains to.
	Document Reference: Fire Alarm drawings
	Answer: Contractor to assume all new wiring.
77 - 87	Responded to in Addendum No. 5 (3/8/21).
88	RFI Response Pending.
89	Question: Is the mechanical demolition by the mechanical contractor?
	Document Reference: N/A
	Answer: No. All demolition, including mechanical items, is by the demolition contractor. If however, there are any items that are not identified in the demo drawings as to be removed but need to be demolished and/or removed in order to perform any of the work in your Bid Package, the demo/removal of those items should be included in your price.
90	Question: Please clarify if the following valves are required. Please also confirm if the listed CFMs and hood sizes (for selected valves) are correct. - EV-1123.2 is shown on the mechanical schedule, but not shown on the floor plan;





PCL Job No. 5221303 Addendum No. 6 – 3/11/21

- EV-2151 is shown on the mechanical schedule, but not shown on the floor plan and mechanical diagram;
- EV-2200A is shown on the mechanical schedule, but not shown on the floor plan and mechanical diagram;
- EV-2211A is shown on the mechanical schedule, but not shown on the floor plan and mechanical diagram;
- EV-2215.1: schedule calls for 8' fume hood, 10" valve, 885 CFM (14" valve is recommended for 8' FH); Mechanical diagram shows 1250 CFM;
 - EV-2215.2 is shown on the mechanical schedule, but not shown on the floor plan;
- EV-22158.1; schedule calls for 8' fume hood, 12" valve (14" valve is recommended for 8' FH);
- EV-22158.1; schedule calls for 8' fume hood, 12" valve (14" valve is recommended for 8' FH);
- EV-22158.2; schedule calls for 8' fume hood, 12" valve (14" valve is recommended for 8' FH);
- EV-3151 is shown on the mechanical schedule, but not shown on the floor plan and mechanical diagram;
- EV-3160 is shown on the mechanical schedule, but not shown on the floor plan and mechanical diagram;
- EV-3168.2 is not shown on the mechanical schedule, but shown on the floor plan and mechanical diagram;
 - EV-3205 is shown on the mechanical schedule, but not shown on the mechanical diagram;
 - EV-3209.2 is not shown on the mechanical schedule, but shown on the floor plan;
 - EV-3209 is shown on the mechanical schedule, but not shown on the mechanical diagram; and,
- EV-4151 is shown on the mechanical schedule, but not shown on the floor plan and mechanical diagram.

Document Reference: M-101-A1, M-101-A2, M-102-A2, M-102-B, M103-A2, M-103-B, M-104-A2, M-603, M-604, M-605, M-606, M-705,

Answer:

- EV-1123.2 is required for general lab room exhaust.
- EV-2151 is required and shown on plan M-103-A2.
- EV-2200A is required and shown on plan M-103-B.
- EV-2211A is required and shown on plan M-103-B.
- EV-2215.1 design should be a 12" valve in 14" runout ducting.
- EV-2215.2 is required and shown on plan M-103-B.
- EV-2215B.1 design for 12" valve as scheduled.
- EV-2215B.2 design for 12" valve as scheduled.
- EV-3151 is required and shown on plan M-103-A2.
- EV-3160 scheduled shall be EV-3168.1.
- EV-3168 scheduled shall be EV-3168.2.
- EV-3205 is required and shown on plan M-103-B.
- EV-3209.2 is required and shown on plan M-103-B.
- EV-3209.1 and EV-3209.2 per plans shall require reschedule.





	- EV-4151 is required and shown on plan M-104-A2.
91	Question: Please refer to drawing M-102-A2. Air terminal Unit VVR-2157 and Exhaust Air Valves EV-2163A, EV-2163.1, and EV-2163.2 are not on the Schedule. Please advise.
	Document Reference: M-102-A2
	Answer: VVR-2157 to be scheduled. EV-2163A to be scheduled. EV-2163.1 to be scheduled. EV-2163.2 to be scheduled.
92	Question: The fire recall and the electrical disconnect for the elevator will need to be brought-up to code. This work would be more efficiently done under other bid packages. Should this work be carried under the elevator modernization scope (BP # 20)? (See also RFI # 19.)
	Document Reference: N/A
	Answer: Elevator code compliance items related to fire alarm and fire protection systems will be addressed as part of the whole-building scopes for those bid packages. Any other work related to the elevator modernization, including electrical and other code compliance work, should be carried in Bid Package # 20.
93	Question: The door schedule does not indicate the fire ratings of the Alternate # 4 doors. Please provide. (Note: Rated doors/frames cannot be field-modified as this voids the label.)
	Document Reference: A-601
	Answer: The Alternate #4 doors are all exterior and are non-rated doors, therefore this is not a concern.
94	Question: Air Terminal Units CVR-3163A and VVR-3163.2 are shown on drawing M-103-A2 but not on Air Terminal Unit Schedule. Please advise.
	Document Reference: M-103-A2
	Answer: CVR-3163A is required, and to be scheduled. VVR-3163.2 as shown on plan is VVR-3163 on schedule M-703.
95	Question: Please confirm no patching or backing is required at 4" wall mounted light fixture, detail A1/A-552 shows no work for BP#14 drywall.
	Document Reference: A-552
	Answer: Additional backing is not required, anchorage per lighting fixture manufacturer for installation utilizing wall bracket.
96	RFI Response Pending.
97	Question: Per specifications, gas piping is to be black iron pipe with socket-weld fittings for pipe 2"Ø and smaller. Industry standards allow for pipe 2"Ø and smaller to be T&C with black malleable fittings. Is this acceptable for pipe 2"Ø and smaller?
	Document Reference: N/A
	Answer: No - for bidding purposes, provide pipe joint connections in accordance with the specification as written.
98	RFI Response Pending.





99	Question: Please clarify the scope for BP #14 at Note D53 on AD-101A & AD-102B & AD-103A "Remove existing growth room shelving and grow lighting system back to bare walls". Does this mean all new drywall at these rooms?
	Document Reference: AD-101A; AD-102B; AD-103A
	Answer: All existing shelving and lighting to be removed. All drywall remaining to remain in its existing state.
100	Question: Are we to include the demo of the exterior wall finish at detail B5/A-505 for new roof flashing and backing?
	Document Reference: A-505
	Answer: Brick is the existing exterior wall finish which is not to be removed in order to provide new flashing and backing.
101	Question: How high is the existing exterior finish to be removed at detail B5/A-505 for new roof flashing and backing?
	Document Reference: A-505
	Answer: Brick is the existing exterior wall finish which is not to be removed in order to provide new flashing and backing.
102	Question: Ref. sheets M-101-A1, M-101-A2, M-102-A1, M-102-A2, M-103-A1, M-103-A2, M-104-A1, &M-104-A2. No branches for hydronic piping are shown - please clarify. FCU-4 does not have any ductwork and air distribution shown - please clarify. No floor hydronic piping is shown in the area between columns E & A - please clarify. No piping to connect with FCU-8 and FCU-9 shown - please clarify.
	Document Reference : M-101-A1, M-101-A2, M-102-A1, M-102-A2, M-103-A1, M-103-A2, M-104-A1, & M-104-A2.
	Answer: Mechanical run-out piping, off of the floor branch piping, shall be provided as required to supply terminal reheat, fan coil cooling, and lab equipment cooling, as/where applicable for the new installation.
	FCU-4 - no distribution ducting applicable for bidding purposes, the fan coil shall include a cabinet with integral supply and return grilles.
	E & A piping - provide branch ad run-out piping as described above.
	FCU-8 & 9 - provide run-out piping as described above.
103	Question: Ref. sheet M-101-B. CHW piping for FCU-5 is not shown - please clarify.
	Document Reference: M-101-B
	Answer: Mechanical run-out piping, off of the floor branch piping, shall be provided as required to supply fan coil cooling as/where applicable for the new installation.
104	Question: Ref. sheet M-105-A2. FCU-2 is shown in the electrical room. No piping and sized ductwork with air distribution is shown for this FCU-2, and FCU-2 was already shown in the basement (see M-100-A2). Please clarify.
	Document Reference: M-105-A2; M-100-A2





	Answer: Mechanical run-out piping, off of the floor branch piping, shall be provided as required to supply fan coil cooling as/where applicable for the new installation.
	Contractor shall provide allowance for some minor ducting and supply / return grille(s) as shown (unsized) on the plan.
	Elec Rm 5001 fan coil (FCU-2) shall be an additional unit (FCU-10) to the Schedule M-702, of similar size/capacity.
105	Question: Ref. sheet M-503. Detail B1 calls to provide transition plenum at existing fume hoods. Please provide approx. size of these plenums.
	Document Reference: M-503
	Answer: Sizes of plenums vary and are to be verified with existing conditions.
106	Question: Ref. sheet M-702. Fan Coil Schedule has requirements for FCU-6 and FCU-7. We cannot find these FCUs on the floor plans. Please clarify.
	Document Reference: M-702
	Answer: Fan coils FCU-6 & 7 were removed as part of the South Wing VE - these units can be deleted from the Schedule M-702.
107	Question: The Door & Frame Schedule for Alternate #4 is missing a lot of information. Are any of these exterior doors storefront doors? If so, modifications will need to be done by a glass/glazing contractor. Also, there is no way of knowing if the specified hardware will fit in the existing doors and frames; extensive modification may be required (it may be less expensive to replace the door). Please advise.
	Document Reference: A-601
	Answer: Information provided within construction documents, in addition to Multivista photos is sufficient to evaluate requirements. Examination during design and consultation with hardware manufacturer identified that extensive modifications should not be necessary to install the required hardware.
108	Question: Bid Package #s 04, 05, 06, & 14 indicate that two CSLB license classifications are required to be able to bid. Please clarify.
	Document Reference: N/A
	Answer: The intent in listing two licenses for one Bid Package is for the first-tier subcontractor to subcontract the specialty work out to a second-tier firm with the appropriate license, unless that contractor also holds the appropriate license to carry out the work. For example – a Demolition contractor with a C-21 license would need to hire an Asbestos Abatement contractor with a C-22 license to do the asbestos abatement work. Both scopes are related and will be done at the same time, and it gives the Demo contractor control over all the aspects of the abatement work including scheduling, logistics, etc. This is the same case with the Electrical contractor with a C-10 license hiring a Low Voltage / Fire Alarm sub with a C-7 license, a Concrete contractor with a C-8 license hiring a Rebar sub with a C-50 license, and a Framing & Drywall sub with a C-9 license subcontracting the ACT work to a lower-tier sub with a C-2 license.
109	Question: There is no spec section for the Thermal Insulation. However, there is exterior wall Batt Insulation and exterior Rigid Insulation Board. Will a spec section be issued? If not, is there a basis of design that is required for the project?





PCL Job No. 5221303

Addendum No. 6 – 3/11/21

	Document Reference: N/A
	Answer: Rigid insulation is 2" of mineral wool and batt insulation is glass fiber, full thickness of stud cavity. Please see attached new specification section 07 21 00.
110 - 117	RFI Responses Pending.

- END OF ADDENDUM NO. 6 -





PCL Job No. 5221303 Addendum No. 6 – 3/11/21

ADVERTISEMENT FOR BIDS/PROPOSALS



A. PROJECT BACKGROUND

Batchelor Hall was completed in 1965 and was designed to provide maximum usability and flexibility per design standards current at that time. The four-story building frames the northeast corner of a quadrangle formed at the intersection of Eucalyptus and Science walks. Batchelor Hall currently houses the Institute of Integrative Genomic Biology, Department of Botany and Plant Sciences, Life Sciences Graduate Student Advising Office and Student Academic Affairs under the College of Natural and Agricultural Sciences (CNAS).

The building has remained substantially unchanged and currently houses an equipment core which is inefficient and lacks the recourse necessary for modern research. The building's utility infrastructure systems have reached the end of their service lives and in many cases the systems have become obsolete and exist in poor condition. The Batchelor Hall Renewal project will replace and/or upgrade the building Mechanical, Plumbing, Electrical, Conveyance, and Fire Protection systems, and perform other building modifications necessary to support those improvements.

B. PROJECT DESCRIPTION

The Batchelor Hall Renewal project focuses on the replacement of the core building systems. The project scope breakdown includes:

- Heating and cooling systems;
- Ventilation systems;
- Energy management systems;





PCL Job No. 5221303 Addendum No. 6 - 3/11/21

- Primary and emergency electrical systems;
- Fire alarm and protection systems;
- De-ionized water and reverse osmosis systems;
- Hazardous materials abatement;
- Connection of building to standby generator;
- Upgrade of existing elevator (Alternate);
- Installation of fire sprinklers in corridors (Alternate); and,
- Placement of standby power panels on each level.

In order to allow occupancy and research in the building to continue during construction, the project will be divided into approximately four phases as will be determined by the University in working in cooperation with PCL Construction Services, Inc.

The University has contracted with HDR Architects to develop the construction documents which will be utilized on the project.

The University has also awarded a CM at Risk contract to PCL Construction Services, Inc. (hereafter 'CM/Contractor'), who will be responsible for bidding and awarding all subcontractor bid packages, including this one. The successful subcontractor bidder shall sign a subcontract agreement directly with the CM/Contractor and shall be bound by all the terms of the contract between the University and the CM/Contractor (attached as part of the bid documents and incorporated by this reference).

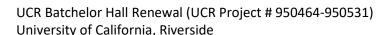
The campus' proposed phased schedule anticipates that construction will commence in the first quarter of 2021, with anticipated construction completion in the second quarter of 2023.

The total anticipated Project Construction Budget is \$14,067,474.

C. BID PACKAGES

The Bid Packages for this project include the following:

- Bid Package # 01 Heating, Ventilating, & Air-Conditioning: Estimated cost = \$5,490,000; CSLB License requirement: C-20 'Warm -Air, Heating, Ventilating, & Air-Conditioning Contractor'. Only pre-qualified Bidders are allowed to submit bids for Bid Package # 01. (See list below.)
- Bid Package # 02 Plumbing: Estimated cost = \$1,884,000; CSLB License requirement: C-36 'Plumbing Contractor'.
 - Only pre-qualified Bidders are allowed to submit bids for Bid Package # 02. (See list below.)
- Bid Package # 03 Fire Protection (Alternate # 5): Estimated cost = \$855,000; CSLB License requirement: C-16 'Fire Protection Contractor'.
- Bid Package # 04 Electrical & Low Voltage: Estimated cost = \$5,348,000; CSLB License requirement: C-10 'Electrical Contractor' & C-7 'Low Voltage Systems Contractor'. Only pre-qualified Bidders are allowed to submit bids for Bid Package # 04. (See list below.)



UG RIVERSIDE Planning, Design & Construction



PCL Job No. 5221303 Addendum No. 6 – 3/11/21

- <u>Bid Package # 05</u> Demolition & Abatement: Estimated cost = \$825,000; CSLB License requirement: C-21 'Demolition Contractor' & C-22 'Asbestos Abatement Contractor'; also ASB & HAZ certifications as required.
- <u>Bid Package # 06</u> Cast In Place Concrete & Reinforcing Steel: Estimated cost = \$453,000; CSLB License requirement: C-8 'Concrete Contractor' & C-50 'Reinforcing Steel Contractor'. NOT USED Delete from this bid. Please monitor https://pdc.ucr.edu/business-opportunities/contractors for the subsequent bid opportunity.
- <u>Bid Package # 07</u> Structural Steel / Misc. Metals: Estimated cost = \$200,000; CSLB License requirement: C-51 'Structural Steel Contractor'.
- Bid Package # 08 Metal Decking NOT USED See Bid Package # 07.
- Bid Package # 09 Metal Stairs & Railings NOT USED See Bid Package # 07.
- <u>Bid Package # 10</u> Roofing & Waterproofing: Estimated cost = \$642,000; CSLB License requirement: C-39 'Roofing Contractor'.
- <u>Bid Package # 11</u> Flashing & Sheet Metal: Estimated cost = \$110,000; CSLB License requirement: C-43 'Sheet Metal Contractor'.
- <u>Bid Package # 12</u> <u>Caulking & Sealants</u> NOT USED
- <u>Bid Package # 13</u> Doors, Frames, & Hardware: Estimated cost = \$56,000; CSLB License requirement: C-28 'Lock & Security Equipment Contractor'.
- <u>Bid Package # 14</u> Drywall & Metal Framing: Estimated cost = \$372,000; CSLB License requirement: C-9 'Drywall Contractor'.
- <u>Bid Package # 15</u> Acoustic Ceilings: Estimated cost = \$15,000; CSLB License requirement: C-2
 'Insulation & Acoustical Contractor'. NOT USED See Bid Package # 14.
- <u>Bid Package # 16</u> Resilient Flooring: Estimated cost = \$10,000; CSLB License requirement: C-15 'Flooring & Floor Covering Contractor'.
- <u>Bid Package # 17</u> Painting: Estimated cost = \$200,000; CSLB License requirement: C-33 'Painting & Decorating Contractor'.
- <u>Bid Package # 18</u> Signage: Estimated cost = \$25,000; CSLB License requirement: C-45 'Sign Contractor'.
- <u>Bid Package # 19</u> Lab Equipment & Casework: Estimated cost = \$110,000; CSLB License requirement: C-61/D-34 'Prefabricated Equipment Contractor'.
- <u>Bid Package # 20</u> Elevator Modernization (Alternate # 3): Estimated cost = \$750,000; CSLB License requirement: C-11 'Elevator Contractor'.

The successful Bidder will be required to have their listed California CSLB license current and active at the time of submission of the Bid.

The following subcontractors have been prequalified for the respective bid packages and only prequalified subcontractors may bid for the below listed packages:

Bid Package 01 – HVAC

- A.O. Reed & Company
- Alpha Mechanical, Inc.





PCL Job No. 5221303

Addendum No. 6 – 3/11/21

- Circulating Air, Inc.
- Critchfield Mechanical
- Pan Pacific Mechanical
- PPC Air Conditioning, Inc.
- University Mechanical & Engineering Contractors, Inc.
- Xcel Mechanical Systems

Bid Package 02 - Plumbing

- A.O. Reed & Company
- Alpha Mechanical, Inc.
- Pan Pacific Mechanical
- Plumbing, Piping, & Construction, Inc.
- University Mechanical & Engineering Contractors, Inc.

Bid Package 04 – Electrical

- A.J. Kirkwood & Associates, Inc.
- Baker Electric, Inc.
- Circle City Electric, Inc.
- Morrow-Meadows Corp.
- Stronghold Engineering, Inc.

Refer to the individual Bid Packages for specific scope information.

D. SUBCONTRACTOR SELECTION PROCESS

Sealed *Electronic* bids for a lump-sum subcontract are invited from subcontractors (hereinafter "Subcontractors") for the following work:

UCR Batchelor Hall Renewal UCR Project Number 950464-950531 University of California, Riverside

<u>BID SCHEDULE</u>: On, Thursday, January 21, 2021 February 4th at 10:00 AM, bid documents will be available to intending subcontractor bidders and will be issued (electronically) at no cost at:

PCL Construction Services, Inc. 655 N. Central Avenue., Suite 1600 Glendale, CA 91203 818-246-3481

MANDATORY PRE-BID CONFERENCE: A mandatory (virtual) Pre-Bid Conference (via Zoom) will be conducted on Friday, February 5, 2021 February 12, 2021, beginning promptly at 10:00 AM. Additional conference details/information will be provided with the Bid Packages. Only Subcontractor bidders who participate in the Conference in its entirety will be allowed to bid on the Project as subcontractors. Participants must log-in/join at or before the specified time. Persons logging-in/joining later than said time will not be allowed to





PCL Job No. 5221303 Addendum No. 6 – 3/11/21

submit bids as subcontractors. For further information, contact Manny Zabat Tim Joyce, Project Manager at mgzabat@pcl.com tjoyce@pcl.com or 818-246-3481.

Please register in advance for the Zoom meeting at the link below: https://zoom.us/meeting/register/tJcrdu-urD4jG92c6uCTJ2aAkSSMTWi1lIng

ADDITIONAL PRE-BID CONFERENCE: An additional Pre-Bid Conference (via Zoom) will be conducted on Monday, February 22, 2021, beginning promptly at 10:00 AM. This additional conference is mandatory for those who missed the first Pre-Bid Conference on February 12, 2021. Bidder firms that attended the first conference do NOT need to attend this one.

Please click on this link to attend the meeting:

https://zoom.us/j/96316720524?pwd=S21FRnhiQ0lyY1c0UWYvYWY4N1UzQT09 [zoom.us]

(Meeting ID: 963 1672 0524; Passcode: 502848)

One tap mobile

+16699006833,,96316720524#,,,,*502848# US (San Jose)

+12532158782,,96316720524#,,,,*502848# US (Tacoma)

JOBWALKS: Due to restrictions related to the current COVID-19 pandemic, jobwalks will be conducted by appointment only between February 5th and February 12th February 16th and February 19th, 2021. Participants will be limited to two persons per subcontractor/bidder and may be grouped with other bidders for the same Bid Package. Additional details will be provided with the Bid Package documents and at the Pre-Bid Conference. Jobwalks will be limited to ten (10) total participants per group. Contact Manny_Zabat, Project Manager, at mgzabat@pcl.com to schedule a site visit on one of the dates and times listed below; first come, first served.

- Tue., 2/16/2021: 9:00 AM; 10:30 AM; & 1:30 PM;
- Wed., 2/17/2021: 9:00 AM; 10:30 AM; & 1:30 PM;
- Thu., 2/18/2021: 9:00 AM; 10:30 AM; & 1:30 PM; and,
- Fri., 2/19/2021: 9:00 AM (if necessary) & 10:30 AM (if necessary).

Please do not visit or walk around the site on your own.

PLEASE NOTE:

- Attendees for the Pre-Bid Conference and Jobwalk should be a staff member of the subcontractors' firm who will be actively involved in responding to this request for proposals.
- 2. Attendees are advised that time be allocated to secure parking. (Attendees are responsible for their own parking. Visit https://transportation.ucr.edu/visitor-parking for more information.) Attendees must allow ample time to drive to the above location (allowing for traffic), find a parking space, walk to the building, clear building security (as applicable), and arrive at the designated Meeting Room or area prior to the required time. It is currently anticipated that each Jobwalk will take 45 60 minutes.

<u>RFI PROCEDURES</u>: Any questions related to the bid and/or bid documents must be submitted in the form of an RFI (Request for Information) and e-mailed to Manny Zabat, Project Manager, at mgzabat@pcl.com.





PCL Job No. 5221303

Addendum No. 6 – 3/11/21

The deadline for RFI submissions is Tuesday, February 16, 2021 Thursday, February 25, 2021 Thursday, March 4, 2021 at 3:00 PM.

Firms intending to submit proposals for this project are asked to confirm their intent to do so by e-mailing a written statement or 'Notice of Intent' to Tim Joyce (tjoyce@pcl.com) by 2:00 PM on Thursday, February 11, Friday, February 26th Friday, March 5, 2021; please include the project name on the subject line of your e-mail.

PROPOSAL DEADLINE: Due to the current COVID-19 pandemic, only electronic (e-mail) bid submittals will be accepted. Hard-copy, facsimile, or telegraphic bid submissions are invalid and will not be accepted. Each bidder's completed Bid Form and associated documents must be received at magabat@pcl.com on or before Thursday, February 25, 2021 Tuesday, March 9, 2021 Tuesday, March 16, 2021 Tuesday, March 23, 2021 at 2:00 PM. Only the UCR/PCL Bid Form (and associated documents) issued with the bid package will be accepted. Bids will be opened immediately after the expiration of the proposal deadline and results will be posted once all documents have been reviewed. Bid Security in the amount of 10% of the Bid shall accompany each Bid. The surety issuing the Bid Bond shall be, on the Bid Deadline, an admitted surety insurer (as defined in California Code of Civil Procedure Section 995.120). Hard copies of the Bid Form and the Bid Bond must be delivered to PCL within 48 hours of announcing who the apparent low bidder is for those respective bids.

UCR and PCL Construction Services, Inc. reserve the right to reject any or all bids and to waive non-material irregularities in any proposal received.

Every effort will be made to ensure that all persons have equal access to contracts and other business opportunities with PCL Construction Services, Inc. within the limits imposed by law or University policy. Each bidder may be required to show evidence of its equal employment opportunity policy. The successful Bidder and its subcontractors will be required to follow the nondiscrimination requirements set forth in the Bidding Documents and to pay prevailing wage at the location of the work.

The work described in the contract is a public work subject to section 1771 of the California Labor Code.

No contractor or subcontractor, regardless of tier, may be listed on a Bid for, or engage in the performance of, any portion of this project, unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 and 1771.1.

This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

The successful Bidder shall pay all persons providing construction services and/or any labor on site, including any University location, no less than the UC Fair Wage (defined as \$13 per hour as of 10/1/15, \$14 per hour as of 10/1/16, and \$15 per hour as of 10/1/17) and shall comply with all applicable federal, state and local working condition requirements.

The award of this project requires that all workers employed on the site be paid not less than the specific prevailing wage rates, as predetermined by the Department of Industrial Relations (reference DIR Project





PCL Job No. 5221303

Addendum No. 6 – 3/11/21

ID 288824 for the UCR Batchelor Hall Renewal project). The California prevailing wage determination index for this project is: 2019-1 2020-2.

Bidder agrees that every contractor and subcontractors at every tier will use a skilled and trained workforce, meaning all workers in an apprenticeable occupation in the building and construction trades are either skilled journeypersons or apprentices registered in a program approved by the Chief of the Division of Apprenticeship Standards of the Department of Industrial Relations ("Chief") and in compliance with the following provisions:

For work performed on or after January 1, 2020, at least 60 percent of the skilled journeypersons employed to perform work on the contract or project by every contractor and each of its subcontractors at every tier are graduates of an apprenticeship program for the applicable occupation.

For work performed on or after January 1, 2020, at least 60 percent of the skilled journeypersons employed to perform work on the contract or project by every contractor and each of its subcontractors at every tier are graduates of an apprenticeship program for the applicable occupation.

The requirements above shall not apply to work performed in the following occupations: acoustical installer, bricklayer, carpenter, cement mason, drywall installer or lather, marble mason, finisher, or setter, modular furniture or systems installer, operating engineer, pile driver, plasterer, roofer or waterproofer, stone mason, surveyor, teamster, terrazzo worker or finisher, and tile layer, setter, or finisher.

Apprenticeable occupations without Chief-approved apprenticeship programs prior to January 1, 1995 may satisfy the above thresholds with up to 50 percent skilled journeypersons who worked in those occupations before the Chief approved of an apprenticeship program.

The apprenticeship graduation percentage requirements above are considered met if, in a calendar month, at least the percentage of skilled journeypersons meet the graduation percentage requirement, or the percentage of hours performed by skilled journeypersons meeting the graduation requirement is at least equal the required graduation percentage.

The apprenticeship graduation percentage requirements do not need to be met if, during the calendar month, skilled journeypersons perform fewer than 10 hours of work on the contract.

A subcontractor does not need to meet apprenticeship graduation percentage requirements if the subcontractor is not a listed subcontractor under California Public Contract Code Section 4104 or a substitute, and the subcontractor agreement does not exceed one-half of 1 percent of the price of the prime contract.

- END ADVERTISEMENT FOR BIDS -

Dates of Advertisement: January 8, 2021 – January 22, 2021

TABLE OF CONTENTS

DIVISION 01 — GENERAL REQUIREMENTS

- 01 11 00 SUMMARY OF WORK
- 01 14 00 WORK RESTRICTIONS
- 01 23 00 ALTERNATES
- 01 26 13 REQUESTS FOR INFORMATION & INSTRUCTIONS (RFI) PROCEDURES
- 01 26 13a RFI Form
- 01 31 13 COORDINATION
- 01 31 19 PROJECT MEETINGS
- 01 32 00 DOCUMENT CONTROL
- 01325 SCHEDULES
- 01 32 80 ELECTRONIC DATA TRANSFER
- 01 33 00 SUBMITTALS
- 01 33 00a Submittals Contractor Certification
- 01 33 00b Submittals Schedule
- 01 33 00c Submittals Subcontractor Certification
- 01 35 20 DESIGN ASSIST PROCEDURES
- 01 35 43 ENVIRONMENTAL PROCEDURES
- 01 35 43a UC Approved TSDFs
- 01 35 46 INDOOR AIR QUALITY (IAQ) PROCEDURES
- 01 41 00 REGULATORY REQUIREMENTS
- 01 41 40 WIND AND SEISMIC DESIGN CRITERIA
- 01 42 00 REFERENCES
- 01 43 00 INSPECTION OF WORK
- 01 43 00a NonConformance Form
- 01 43 00b Inspection Form
- 01 45 00 QUALITY CONTROL
- 01 45 16 CONTRACTOR'S QUALITY CONTROL PROGRAM
- 01 45 20 CONCRETE MOISTURE TESTING
- 01 51 00 TEMPORARY UTILITIES
- 01 52 00 CONSTRUCTION FACILITIES
- 01 53 00 TEMPORARY CONSTRUCTION
- 01 54 00 CONSTRUCTION AIDS
- 01 55 00 VEHICULAR ACCESS AND PARKING
- 01 56 00 TEMPORARY BARRIERS AND ENCLOSURES
- 01 57 00 TEMPORARY CONTROLS
- 01 60 00 PRODUCT REQUIREMENTS
- 01630 PRODUCT OPTIONS AND SUBSTITUTIONS
- 01 71 00 EXAMINATION AND PREPARATION
- 01 71 21 SPECIALTY ENGINEERING REQUIREMENTS
- 01 73 29 CUTTING AND PATCHING
- 01 74 00 CLEANING AND WASTE MANAGEMENT
- 01 74 00a Contractor C&D Waste Monitoring Form
- 01 74 00b Contractor Green Waste Monitoring Form
- 01 77 00 CONTRACT CLOSEOUT
- 01 77 00a Guarantee
- 01 77 00b Special Warranty
- 01 78 39 AS-BUILT DOCUMENTS
- 01 91 13 GENERAL COMMISSIONING REQUIREMENTS

DIVISION 02 — EXISTING CONDITIONS

02 41 00 - DEMOLITION



HDR Project No. 10044183



DIVISION 03 — CONCRETE

- 03 08 13 CONCRETE TESTING AND EVALUATION OWNER
- 03 11 00 CONCRETE FORMING
- 03 20 00 CONCRETE REINFORCING
- 03 31 00 CONCRETE MATERIALS AND PROPORTIONING
- 03 31 10 CONCRETE MIXING, PLACING, JOINTING, AND CURING
- 03 35 00 CONCRETE FINISHING

DIVISION 05 — METALS

- 05 05 05 GALVANIC CORROSION PROTECTION
- 05 12 10 STRUCTURAL STEEL
- 05 31 23 METAL ROOF DECKING
- 05 40 00 COLD FORMED METAL FRAMING
- 05 41 04 LOAD BEARING METAL STUD SYSTEM
- 05 50 10 MISCELLANEOUS METAL FABRICATIONS
- 05 51 00 METAL STAIRS AND RAILINGS

DIVISION 06 — WOOD, PLASTICS, AND COMPOSITES

- 06 10 00 ROUGH CARPENTRY
- 06 16 43 GYPSUM SHEATHING

DIVISION 07 — THERMAL AND MOISTURE PROTECTION

- 07 21 00 THERMAL INSULATION (Bid Addendum 6)
- 07 27 29 FLUID APPLIED AIR BARRIER VAPOR PERMEABLE
- 07 42 16 PREFORMED METAL PANELS
- 07 54 19 ADHERED PVC ROOFING
- 07 62 00 FLASHING AND SHEET METAL
- 07 72 13 MANUFACTURED CURBS
- 07 84 00 FIRESTOPPING
- 07 92 13 EXTERIOR JOINT SEALANTS
- 07 92 16 INTERIOR JOINT SEALANTS

DIVISION 08 — OPENINGS

- 08 11 13 HOLLOW METAL (HM) DOORS AND FRAMES
- 08 14 16 FLUSH WOOD DOORS
- 08 71 00 DOOR HARDWARE

DIVISION 09 — FINISHES

- 09 22 16 NON-STRUCTURAL METAL FRAMING
- 09 29 00 GYPSUM WALLBOARD
- 09 51 00 ACOUSTICAL CEILING MATERIALS (AM)
- 09 65 16 RESILIENT SHEET FLOORING (SV)
- 09 91 13 EXTERIOR PAINTING
- 09 91 23 INTERIOR PAINTING

DIVISION 10 — SPECIALTIES

10 14 23 - SIGNS

DIVISION 11 — EQUIPMENT

11 53 43 - LABORATORY SERVICE FITTINGS AND FIXTURES

DIVISION 12 — FURNISHINGS

- 12 35 53 LABORATORY CASEWORK AND OTHER FURNISHINGS
- 12 36 63 SOLID SURFACE FABRICATIONS (SSF)

DIVISION 13 — SPECIAL CONSTRUCTION

13 48 00 - ARCHITECTURAL SEISMIC RESTRAINT SYSTEMS

DIVISION 14 — CONVEYING EQUIPMENT

14 22 10 - MODERNIZATION OF ELEVATORS



HDR Project No. 10044183



DIVISION 20 — MECHANICAL GENERAL REQUIREMENTS

- 20 05 00 SPECIAL MECHANICAL REQUIREMENTS
- 20 05 05 MECHANICAL RENOVATION
- 20 05 10 ACCESS PANELS
- 20 05 19 PIPING SPECIALTIES
- 20 05 23 MANUAL VALVES
- 20 05 29 PENETRATIONS AND SUPPORTS
- 20 05 48 MECHANICAL SEISMIC RESTRAINT SYSTEMS
- 20 05 50 MECHANICAL SOUND AND VIBRATION CONTROL
- 20 05 53 MECHANICAL IDENTIFICATION SYSTEMS
- 20 07 00 PIPE, DUCT AND EQUIPMENT INSULATION
- 20 08 00 TESTING AND BALANCING
- 20 10 10 OUTSIDE UTILITIES
- 20 11 00 PIPE AND FITTINGS

DIVISION 21 — FIRE SUPPRESSION

21 10 00 - FIRE PROTECTION SYSTEMS

DIVISION 22 — PLUMBING

- 22 10 16 PLUMBING PIPING
- 22 11 23 PLUMBING PUMPS
- 22 33 00 DOMESTIC WATER HEATERS
- 22 42 00 PLUMBING FIXTURES
- 22 61 13 LABORATORY AIR SYSTEM
- 22 62 13 PROCESS VACUUM SYSTEMS
- 22 67 00 HIGH PURITY WATER PIPING SYSTEM
- 22 67 19 PROCESS PIPING SYSTEMS
- 22 67 21 DEIONIZED WATER SYSTEM

DIVISION 23 — HEATING VENTILATING AND AIR CONDITIONING

- 23 05 48 MECHANICAL SEISMIC RESTRAINT SYSTEMS
- 23 05 50 MECHANICAL SOUND AND VIBRATION CONTROL
- 23 11 23 NATURAL GAS PIPING SYSTEM
- 23 21 13 HYDRONIC PIPING SYSTEMS
- 23 21 23 HVAC PUMPS
- 23 22 00 STEAM DISTRIBUTION SYSTEM
- 23 23 00 REFRIGERANT PIPING SYSTEM
- 23 31 13 AIR DISTRIBUTION SYSTEM
- 23 35 00 EXHAUST AND VENTILATING FANS
- 23 36 00 AIR TERMINAL UNITS AND INDUCTION UNITS
- 23 58 00 HEAT TRANSFER PACKAGE
- 23 73 23 FACTORY BUILT CUSTOM AIR HANDLING UNITS
- 23 82 39 HYDRONIC HEATING TERMINAL UNITS

DIVISION 25 — INTEGRATED AUTOMATION

- 25 23 00 VARIABLE FREQUENCY DRIVES
- 25 50 00 BUILDING MANAGEMENT AND CONTROL SYSTEM
- 25 51 00 UCR CONTROLS SYSTEMS STANDARDS

DIVISION 26 — ELECTRICAL

- 26 00 10 ELECTRICAL GENERAL REQUIREMENTS
- 26 00 11 WIRING EQUIPMENT FURNISHED BY OTHERS
- 26 05 13 MEDIUM VOLTAGE CABLES
- 26 05 19 LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
- 26 05 26 GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS
- 26 05 33 CONDUITS
- 26 05 34 BOXES





Project Name: Batchelor Hall – Building Systems Renewal

Project Number: 950464

Contract Number: 950464-CMAR-2019-84

- 26 05 43 UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL S YSTEMS
- 26 05 48 VIBRATION AND SEISMIC CONTROLS FOR ELECTRICAL SYSTEMS
- 26 05 53 IDENTIFICATION FOR ELECTRICAL SYSTEMS
- 26 09 13 POWER MONITORING AND CONTROL
- 26 09 23 LIGHTING CONTROL DEVICES
- 26 12 19 PAD-MOUNTED, LIQUID FILLED, MEDIUM VOLTAGE TRANSFORMERS
- 26 13 23 SECTIONALIZING EQUIPMENT
- 26 22 13 LOW VOLTAGE DISTRIBUTION TRANSFORMERS
- 26 24 13 SWITCHBOARDS
- 26 24 16 PANELBOARDS
- 26 27 26 WIRING DEVICES
- 26 28 00 OVERCURRENT PROTECTIVE DEVICES
- 26 28 16 ENCLOSED SAFETY SWITCHES
- 26 43 13 SURGE PROTECTIVE DEVICES (SPD)
- 26 51 13 BUILDING LIGHTING

DIVISION 28 — ELECTRONIC SAFETY AND SECURITY

- 28 05 00 BASIC ELECTRONIC SECURITY REQUIREMENTS
- 28 31 13 FIRE ALARM AND DETECTION SYSTEMS

END OF TABLE OF CONTENTS



SECTION 07 21 00

THERMAL INSULATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Furnish labor, materials, tools, equipment, and services for Building Insulation in accordance with provisions of Contract Documents.
- B. Completely coordinate with work of other trades.

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
 - 1. ASTM:
 - a. C518, Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
 - b. C665, Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
 - c. E84, Standard Test Method for Surface Burning Characteristics of Building Materials.
 - d. E119, Standard Test Methods for Fire Tests of Building Construction and Materials.
 - e. E136, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 DEGC.
- B. Comply with California quality assurance for insulating material.

1.3 SUBMITTALS

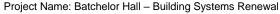
- A. Product Data:
 - 1. Manufacturers' product data sheets, details and installation instructions including components and accessories, indicating product is in compliance with specifications.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Mineral Fiber Insulation:
 - 1. Base:
 - a. Thermafiber, Inc., an Owens Corning company.
 - 2. Optional:
 - a. Rockwool.
 - b. Johns Manville.
 - c. Knauf.
- B. Mechanical fasteners:
 - 1. Base:
 - a. GEMCO.
- C. Adhesive for use with mechanical fasteners:
 - 1. Base:
 - a. As approved by fastener manufacturer.
- D. Fiberglass Batt Insulation:
 - 1. Base:
 - a. Owens-Corning.
 - 2. Optional:
 - a. CertainTeed





Project Number: 950464

Contract Number: 950464-CMAR-2019-84



- b. Johns Manville.
- c. Knauf Insulation.

E. Other Materials:

- 1. Base:
 - a. As indicated.
- F. Other manufacturers desiring approval comply with Section 01 61 00.

2.2 MATERIALS

- A. Mineral Fiber Insulation:
 - 1. Unfaced, non-combustible, water repellant, semi-rigid fiber insulation board.
 - 2. Temperature Resistance: Per ASTM C612.
 - a. Over 2000 DEGF.
 - 3. Surface Burning Characteristics per ASTM E84.
 - a. Flame Spread: 0.
 - b. Smoke Developed: 0.
 - 4. Moisture Resistance: Absorbs less 0.03 PCT by volume, per ASTM C1104.
 - 5. R-value: 4.2 per IN.
 - 6. Density: 4.5 PCF.
 - 7. Non-corrosive per ASTM C665.
 - 8. Thickness: 2"
 - 9. Base Product: Thermafiber RainBarrier 45 Insulation.
 - 10. Mechanical fasteners; impaling clips/pins:
 - a. Pronged hangers and slotted washers or arrow pointed hangers.
 - b. Size pins to fit insulation thickness.
 - c. Base Product: GEMCO as manufactured by Goodloe E. Moore.
 - 1) Gemco pronged hanger with pronged washer.
 - 11. Mastic for use with mechanical fasteners:
 - a. Base Product: As approved by fastener manufacturer.
- B. Unfaced Fiberglass Batt Insulation:
 - 1. Inorganic fibers and resinous binders formed into flexible blankets or semi-rigid sheets.
 - 2. Un-faced, Type I in accordance with ASTM C665.
 - 3. Minimum Surface Burning Characteristics per ASTM E84: Flame Spread: Less than 25; Smoke Developed: Less than 50.
 - 4. Combustion characteristics: Noncombustible; unfaced per ASTM E136.
 - 5. Manufactured without urea-formaldehyde binders.
 - 6. Nominal Thickness / Thermal Resistance Value, measured at 75 DEGF:
 - a. Nominal Thickness: 6-1/4 IN / R-19.

PART 3 - EXECUTION

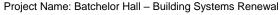
3.1 INSPECTION

- A. Verify suitability of substrate to accept installation.
- B. Installation indicates acceptance of responsibility for performance.

3.2 INSTALLATION

- A. General:
 - 1. Insulate full thickness over surfaces to be insulated.
 - 2. Fit tightly around obstructions, fill voids.
 - 3. Cover penetrations with insulation.
 - 4. Comply with manufacturer's instructions for installation unless more stringent requirements are specified.





Project Number: 950464

Contract Number: 950464-CMAR-2019-84



- 5. Consult manufacturer's technical representative if installation instructions are not applicable.
- 6. Where rigid insulation is indicated over 2 IN thick, apply in double layer with staggered joints to achieve total thickness.
- 7. Do not use broken or torn pieces of insulation.
- 8. Provide minimum cover of 5/8 IN type X gypsum wallboard over exposed foam surfaces.
- B. Rigid Fiber Insulation in Rain Screen and Cavity Wall construction:
 - 1. Verify and moisture barrier installation is complete.
 - 2. Comply with manufacturer's directions for particular conditions of installation.
 - 3. Secure insulation by use of mechanical fasteners; impaling clips and pins.
 - a. Locate fasteners 6 IN from edges and at 12 IN OC each direction.
 - b. Lay out work before installing mechanical fasteners.
 - c. Lay out fasteners and install in mastic.
 - d. Allow mastic to set.
 - e. Test to ensure fasteners are secure.
 - f. Install washers and bend prongs of fasteners.
 - 4. Extend insulation full thickness over entire surface to be installed.
 - 5. Cut and fit tightly around penetrating elements and abutting construction.
 - Install rigid fiber insulation with tight joints, without voids, pressing onto mechanical fasteners.
 - 7. Do not install insulation over or within 3 IN of recessed lighting fixtures, ballasts, wiring compartments, fans, or other heat-generating devices unless fixtures are protected.
- C. Un-Faced Batt Insulation in exterior Stud Wall systems:
 - 1. Installing Batts:
 - a. Friction fit un-faced batts between studs.
 - b. Tightly butt ends.
 - Where specified thickness of batts is less than the depth of framing, install retaining devices to prevent sagging.

END OF SECTION



