THERMAL ENGINEERING

Tuesday, July 18, 2023

Ikon USA

Sommet Blanc Condominiums

9300 Marsac Ave

Deer Valley, Utah, 84060

Dear Mark,

Thermal Engineering is pleased to offer you this proposal for your consideration. Should you have any questions regarding this proposal, please feel free to contact me.

We look forward to working with you.

Sincerely,

Coy Frailey

Owner/ Sales Manager

THERMAL ENGINEERING COMPANY VALUES

SAFETY • INITIATIVE & CREATIVITY •HONESTY & INTEGRITY

RESPONSIBILITY • COMPASSION • PROFESSIONALISM

CRAFTSMANSHIP • POSITIVE PEOPLE • CUSTOMER FOCUS

2525 SOUTH 300 WEST • SALT LAKE CITY, UTAH 84115
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WWW.THERMALENGINEERING.CO

Plumbing / Gas Pipe Budget

We propose to furnish and install the following:

- This Budget is based on plans dated 11/18/2022.
- Engineering is performed by others. Thermal Engineering will install materials and equipment per engineering drawings.
- All drain, waste and vent piping will be installed per plan.
    - Sewage ejector will be provided and installed per plans.
    - Excavation and backfill for the Plumbing System is included with this proposal. All bedding materials is to be provided by others if excavated soil is not adequate for bedding pipe.
    - DWV Materials
        - PVC – Below grade
        - Cast Iron No Hub – Above Grade
- Culinary water system piping will be furnished and installed for a complete and operable system.
    - All culinary water piping 2" and below will be PEX-A with cold expansion fittings. Above 2" will be copper ProPress and/or copper sweat fittings.
        - 1-1/2" fiberglass insulation on all Hot water / Recirculated potable water
        - 1" fiberglass insulation on all cold-water piping.
    - All soft water piping will be installed per plan. Currently all buildings will receive softened water to all fixtures.
        - All soft water equipment will be provided and installed. Crusader has been selected as an alternate.
    - Water heater will be installed per plans.
        - Water heater equipment per plans, or of equal.
        - assumed there is sufficient space for all items to be installed in a serviceable manner.
    - All hot water recirculating system piping and pumps will be installed per plan.
        - Balancing of hot water recirculation system is included in this budget
    - Water treatment systems at point of use are available and can be priced upon request.
- Roof drains will be provided and installed in this Budget. All piping will be cast iron pipe and fittings. Insulated 1-1/2" wall fiberglass insulation.
- Grease drains provided and installed per plan. Grease shown as just a stub in to the kitchen area. Piping below grade to be PVC and above grade to be cast iron no hub. Grease trap is NOT provided in this Budget.
- Parking drains provided and installed per plan. Parking piping below grade to be PVC and above grade to be cast iron no hub. Sand/oil separator is NOT provided in this Budget.
- Thermal Engineering will install plumbing fixtures as specified by the owners / designers. This budget assumes that fixtures are "typical" installation. Fixtures such as wall mount toilets or faucets, elaborate showers, and tubs over 200 lbs are non-typical. Fixtures provided by others
    - Standard ThermaSol Steamer package Labor and Materials is included in this Budget.

Gas pipe System

- This Budget is based on plans and/or appliance loads dated 11/18/2022.
- Engineering is performed by others. Thermal Engineering will install materials and equipment per engineering drawings.
- We propose a 2 lb branch and tee system with 4 oz piping to individual appliances. All regulators are included with this proposal.
- All gas piping will be schedule 40 black iron pipe with mega press and/or threaded fittings. Gas stub out will be within 6' of the various appliances with individual gas isolation valves. Individual contractors are to hook up their respective equipment.

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Select	Bid Item	Bid Amount
☐	Plumbing Base Bid Building A	$2,087,765
☐	Plumbing Base Bid Building B	$2,992,302
☐	Plumbing Base Bid Building C	$2,099,209
☐	Equipment	$421,429.10
☐	Water Softener	$36,868.21
☐	HVAC Condensate Disposal Budget	$430,000.00
☐	Seismic Engineering / Installation	$27,000.00
☐	Add: Permits and Fees	Cost + 20%
☐	Add: Core Holes	$275/hole

Equipment includes:

- Booster Pump.
- Break Tank.
- Elevator pumps for A and B.
- Sump Pumps for A and B.
- Water heaters for Domestic hot water.
- Recirc Pump for Domestic hot water.
- Hot water storage tank.
- Hot water expansion tank.

Water Softener

- Crusader Deluxe softener unit.
- Includes start up from manufacturer.

Condensate Disposal

- Condensate piping is not drawn on the plan.
- Condensate is budgeted at $1,500.00 per HVAC fan coil.
    - There are approximately 287 fan coils between building A,B, and C
- Condensate is budgeted in copper pipe with Sweat connections, per spec.
- A neutralizer for each fan coil unit is included with this budget.

Seismic Engineering / Installation

- Budget for Seismic engineer
- Budget for Installation of engineered system
- Budget for Building A, B, and C

Plumbing / Gas Pipe VE Budget Option

This is budget only:

- Change to PVC in parking structure, Cost Iron in the units PVC in horizontals. -$206,555.00
- Change to PPR-CT and Pex rather than copper piping, Reduction in pipe size and insulation thickness. -$245,222.00
- Reduce insulation thickness, Change all from cast iron to PVC. -$63,556.00
- Parking Drains change from cast iron to PVC. -$5,296.00
- Change from copper piping and condensate neutralizer to PVC and eliminate the condensate neutralizer. -$331,000.00.

Gas Piping Exclusions:

- No connections to propane tanks or gas meters are included. All meters, or propane regulators are assumed to be by others.
- All appliances are to be hooked up by appliance contractors.
- This bid assumes that piping will be ran in drops. Drilling joists for piping to be located without drops may require a change order.
- All excavation or slab on grade preparation or compaction testing is excluded from this bid.
- This bid does not have any water proofing, water proofing by others.
- No roofing, stud shoes, or flooring is included in this Budget.
- Framing, sheetrock, sheetrock repairs, platforms and/or framing drops are excluded from this bid.
- No allowance for concrete core cutting is included with this bid.
- Running the equipment during construction is not advisable and may limit manufacturer's warranty. Any cleaning, servicing, filters and other detriments to the equipment are the responsibility of the general contractor / owner.
- Freight of material is excluded from this bid. Unless otherwise specified
- No seismic bracing or seismic engineering is included unless otherwise stated above. If seismic bracing is required, Thermal Engineering will provide at cost + 20%.

Plumbing Exclusions:

- Sump pumps and sewage injectors are excluded from this bid unless otherwise specified. Building C shows no Elevator pumps or pump piping
- All appliances are to be hooked up by appliance contractors.
- Pool, spa, steamer, sauna, or wine unit installation and piping are excluded from this bid unless otherwise specified.
- This bid assumes that all countertops are marked and pre-drilled by others. Any under mounted sinks are installed by a countertop contractor.
- Condensate Piping not in the plan is offered with an allowance only.
- Heat Trace is not included in this Budget
- Slab on Grade prep is not included. We will backfill and get prep as close as possible within reason.
- This bid does not have any water proofing, water proofing by others.
- No roofing, stud shoes, or tile work
- Garbage receptacles assumed to be onsite and for our use. We will clean up after ourselves and dispose of the garbage in the community dumpster. No additional garbage fee is accounted for inside of this proposal
- Vent stacks not to exceed 15' offset in any direction going through the roof. Vents to be combined within reason.
- Water main per plan
- Framing, sheetrock, sheetrock repairs, platforms, Housekeeping pads by others and/or framing drops are excluded from this bid.
- No allowance for concrete core cutting is included with this bid.
- No building automation programming or hook-up is included with this bid.
- Running the equipment during construction is not advisable and may limit manufacturer's warranty. Any cleaning, servicing, filters and other detriments to the equipment are the responsibility of the general contractor / owner.
- Freight of material is excluded from this bid. Unless already included with equipment.
- No piping sanitation / sterilization is included in this proposal. We plan on only flushing the system with culinary water for general cleaning of any debris that may be present in the piping.
- Mark requested a count of access panels that he would need to provide
    - Steamer units – will need access of some sort – 52
    - Water Valves in ceiling – 58

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Snowmelt Proposal

We propose to furnish and install the following:

- Engineering is performed by others. Thermal Engineering will install materials and equipment for per engineering drawings.
- Conditioned area(s) based on plans dated 11/18/2022:
    - Heated Area Per Plan: Snowmelt Schedules on M0.07 and M1.00
- PEX-A tubing will be used for individual heating circuits.
    - Slab on grade tubing 9" on center will be embedded in concrete pour. Bubble foil insulation and mesh are included in this proposal.
    - No Rebar or rebar chairs are included in this proposal.
    - It is assumed that slab on grade areas, will have whole manifolds area ready and Thermal Engineering will tube whole areas and will not splice lines to meet concrete pour. If splice needs to happen additional cost will happen.
    - Suspended floor tubing will be installed in Tile Tech system. Tile Tech is not included. It is assumed pedestal and tray system will be installed and Thermal Engineering will install pex tubing and manifolds before the tile goes down.
    - It is assumed that owners deck will be ready per unit and Thermal Engineering will tube all decks associated with that unit and will not jump from unit to unit to meet tile contractor's schedule.
- A combination of Pex and PPR-CT piping will be used in the distribution piping. 2" and below will be pex with pex supports. 2.5" and above will be PPR-CT.
    - 1" fiberglass insulation is included with this proposal for all interior piping, no insulation jacketing.
    - No insulation for distribution lines outside of the building.
- Copper or PPR-CT Remote manifolds will be installed to connect the distribution lines to the heating circuits.
    - Manifold boxes in landscape areas will be green plastic boxes. If owners would like alternative concrete boxes, pricing will be given at that time.
    - Owners deck area manifolds are assumed to be under Tile Tec system.
    - It is assumed that there will be 4" or more under the tile tech system for manifold placement.
- Mechanical Equipment will be furnished and installed for a complete and operable system.
    - (6) High efficiency boiler(s) of 2,400,000 BTU each is in this proposal.
    - Boiler flues will be provided in a separate proposal.
    - The boiler and mechanical equipment are assumed to be installed in the mechanical room per plan. It is assumed there is a floor drain and sufficient space for all items to be installed in a serviceable manner.
    - All Mechanical piping will be PPR-CT with butt or socket fusion joint fitting. All pumps, gauges, fittings, valves, drains, expansion tanks and air scrubbers as needed for an operable system.
    - Glycol feed tank is included with this proposal. Per Plan
    - Electrical (including Pump Starters, emergency shutoff switches) are NOT included with this proposal. The design of the utility systems is to be provided by others.
    - It is assumed all power and conduit for mechanical system is done by the electrician.
- System controls are provided in a separate section of this proposal.
    - Thermal Engineering will provide a Tekmar 091 and conduit in each snowmelt zone on M1.00.
    - Thermal Engineering will provide a Tekmar 090 slab and moister senser in each snowmelt zone on M1.00 and will run it into building. Control proposal includes wires and hookup as required.
    - Thermal Engineering will provide a (1) Tekmar 091 and conduit per condominium. Controls proposal includes snowmelt Slab sensor(s) as required. If moisture senser is need an additional cost for senser will be needed.
    - Snowmelt zones per M1.00 will have zone valve place inside building before lines exit building. Controls proposal includes wires and sensors as required.
    - It is assumed that each owner condominium will be it's own zone and will have a zone valve(s) in the mechanical space in the ceiling. Controls proposal includes wires and sensors as required.

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- Startup and Finish
    - The system will be filled with chemically treated 40% glycol / DI water with inhibitors.
    - Installation and operation manuals will be provided.
    - It is assumed we will fill the system once all the areas are done. This proposal does not include filling sections as they are completed.
    - Maintenance programs are available. We can discuss this with the owners once the system is commissioned.
- Seismic Engineering budget is given, true numbers cannot be given until systems are installed.
- Test and Balance of snowmelt system is included in this pricing.

Select	Bid Item	Bid Amount
☐	Snowmelt Heating Base Bid	$3,177,807.00
☐	Seismic Engineering budget:	$20,000.00
☐	Add: Construction Heat Cleaning ($/each cleaning)	Minimum $1,500
☐	Add: Permits and Fees	Cost + 20%
☐	Add: Core Holes	$275/hole

- CONSTRUCTION HEATING
    - Manufacturers consider warranty period to start with initial startup of system, not at owner occupancy.
    - Running equipment during construction will require equipment cleanings. Each cleaning is not included in this proposal and will be submitted as a change order.

Snowmelt VE Budget Option

This is budget only:

- Snowmelt distribution lines discrepancies on drawing and reduction of boiler capacity. -$140,405.00
- Change tubing spacing from 9” on center spacing to 12” on center spacing. -$41,846.00
- Reduce to 3 boilers, capacity to around 8 million BTU. -$173,976.00
- Reduce the quantity of future sensor locations from 9 to 3. -$5,000.00
- Reduction of Glycol do to tubing spacing and distribution reduction in size. -$53,687.00
- Eliminate pex support track in all units. -$14,890.00
- Eliminate the 091 slab sensors sockets on owner’s deck. -$6,615.00
- Eliminate snowmelt on main driveway (Per Mark’s drawing). -$656,687.00

TE THERMAL ENGINEERING

Mechanical Piping Proposal

We propose to furnish and install the following:

- Engineering is performed by others. Thermal Engineering will install materials and equipment per engineering drawings.
- Fan Coils are included in the HVAC section of this proposal. Thermal Engineering will pipe and hook up to unit.
    - 574 Fan coils are assumed for all buildings.
    - Zone Valves will be installed on the heating and chilled water side. Wiring by control contractor.
    - Circuit setters will be installed on heating and chilled water side for flow balancing.
    - It is assumed that access doors are provided by general contractor.
    - It is assumed that we will be given adequate space for service access.
    - Silencer or vibration isolators are not included in this proposal they are provide in HVAC bid.
- Mechanical piping will be a combination of Pex and PPR-CT piping. 2" and below will be pex with pex supports, 2.5" and above will be PPR-CT.
    - 1.5" fiberglass insulation is included with this proposal. No insulation jacking is included.
- (5) Heat Pumps will be furnished and installed for a complete and operable system.
    - Heat pumps will be on the roof per plan.
    - Vibro-Acoustics Chiller Silencer are included in this proposal.
    - Silencer is assumed to sit on top of pit wall, pit wall by others. No details provided in plan.
    - Silencers are designed specifically for heat pumps. If the heat pumps change silencers pricing will also change.
    - Vibration isolators for heat pumps are included in this proposal.
    - **No heat pump details are provided in drawing some assumptions were made.**
    - No roof curbing is included in this proposal.
    - Heat pumps are per spec.
    - (3) Factory start-ups are included in this proposal.
    - It is assumed Thermal Engineering can use onsite crane at no additional expense.
    - All pumps, gauges, fittings, valves, drains, expansion and buffer tanks and air scrubbers as needed for an operable system.
    - Glycol feed tank is included with this proposal. Per Plan.
- Mechanical Equipment will be furnished and installed for a complete and operable system.
    - (9) High efficiency boiler(s) 1,200,000 BTU each in this proposal.
    - The boiler and mechanical equipment are assumed to be installed in the mechanical room per plan. It is assumed there is a floor drain and sufficient space for all items to be installed in a serviceable manner.
    - All mechanical room piping to be PPR-CT with butt or socket fusion joint fittings. All pumps, gauges, fittings, valves, drains, expansion tanks and air scrubbers as needed for an operable system.
    - Vibration isolators for pumps are included in this proposal.
    - Glycol feed tank is included with this proposal. Per Plan
    - Electrical (including Pump Starters and emergency shutoff switches) are NOT included with this proposal. The design of the utility systems is to be provided by others.
    - It is assumed all power and conduit for mechanical system is done by the electrician.
    - Housekeeping pads are not included in this proposal.
- System controls will be furnished and installed for a complete and operable system.
    - All low voltage wire, conduit and controls will be provided in controls or HVAC sections of this proposal.

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- Startup and Finish
  - The system will be filled with chemically treated 40% glycol / DI water with inhibitors.
  - Installation and operation manuals will be provided.
  - It is assumed the system will be filled once all the areas are done. This proposal does not include filling sections as they are completed.
  - Maintenance programs are available. We can discuss this with the owners once the system is commissioned.
- Seismic Engineering and insulation budget is given, true numbers cannot be given until systems are installed.
- Test and Balance of snowmelt system is included in this pricing.

Select	Bid Item	Bid Amount
☐	Building A Mechanical Piping:	$3,141,163.00
☐	Building B Mechanical Piping:	$3,462,163.00
☐	Building C Mechanical Piping:	$2,785,112.00
☐	Mechanical Piping Proposal:	$9,661,482.00
☐	Seismic Engineering/installation Budget:	$25,000.00
☐	Add: Construction Heat Cleaning ($/each cleaning)	Minimum $1,150
☐	Add: Core Holes	$250/hole

- CONSTRUCTION HEATING
  - Manufacturers consider warranty period to start with initial startup of system, not at owner occupancy.
  - Running equipment during construction will require equipment cleaning. Each cleaning is not included in this proposal and will be submitted as a change order.

Mechanical Piping VE Budget Option

This is budget only:

- Reduction in FCU numbers and changes PPR-CT piping, pipe sizes and Glycol. -$459,215.00
- Reduction in FCU numbers and changes to PEX piping and sizes. -531,577.00
- Reduction in FCU numbers hook up and control valves. -$21,866.00
- Reduction in boiler heating size. -$25,626.00
- Change heat pump manufacturer. Spec and silencers are unknow. -$126,300.00

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Boiler Flue Proposal

We propose to furnish and install the following:

- Engineering is performed by others. Thermal Engineering will install materials and equipment per engineering drawings.
- **Thermal Engineering has reservations with the current developed length to exit the building.**
- **Thermal Engineering will need the boiler manufacturer to approve the boiler flue design.**
- This proposal includes snowmelt boilers, plumbing heaters, building A, B and C heating boilers and pool boiler.
- This includes BEF-1 thru BEF-C-2 Enervex BEF fans with controls modulating draft dampers, VFD's.
- Flue is per plan, in the event of clash or a need for deviation from plan routing it could impact schedule and or increase material cost.

Select	Bid Item	Bid Amount
☐	Boiler Flue Building A:	$222,550.00
☐	Boiler Flue Building B:	$173,690.00
☐	Boiler Flue Building C:	$163,866.00
☐	Pool Boiler Flue:	$175,836.00
☐	DHW Boiler Flue:	$120,850.00
☐	Snowmelt Boiler Flue:	$338,158.00
☐	Seismic Engineering/installation Budget:	$15,000.00

Boiler Flue Piping VE Budget Option

This is budget only:

- Building A flues change routing, Eliminate common venting. Change flue materials. -$95,922.00
- Building B flues change routing, Eliminate common venting. Change flue materials. -$74,424.00
- Building C flues change routing, Eliminate common venting. Change flue materials. -$70,101.00
- Pool boilers eliminate pool boilers and add heat exchangers off snowmelt boiler system. -$90,101.00
- DHW boiler flues change routing, Eliminate common venting. Change flue materials. -$51,174.00
- Snowmelt flue change routing, Eliminate common venting. Change flue materials and reduction in boiler sizing. -$146,000.00

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HVAC Proposal

We propose to furnish and install the following:

Thermal Engineering and Premier Strand Heating & Air have teamed up to provide a complete HVAC system:

- Engineering is performed by others. Thermal Engineering will install materials and equipment per engineering drawings.
- Fan Coils, AHU, Unit heats and make up units are included in the HVAC section of this proposal.
    - Fan coils are assumed for all buildings.
    - Air Handles Units are assumed for all buildings.
    - Unit heaters are assumed for all buildings.
    - Duct layout is per plan and per spec.
    - Zone dampers will be installed per plan. Wiring and controls will be provided in controls sections of this proposal.
    - Duct mounted temp sensor will be installed per plan. Wiring and controls will be provided in controls sections of this proposal.
    - Fire/smoke damper will be installed per plan.
    - Exhaust fans with controller panel per plan.
    - It is assumed that access doors are provided by the general contractor.
    - It is assumed that we will be given adequate space for service access.
    - Vibration isolators are included in this proposal.
    - With approved submittals as needed.
- Parking Garage exhaust fans per plan, Co/N02 detectors are provided in control proposal.
- Louvers are excluded from this proposal unit more information is provided.

Select	Bid Item	Bid Amount
☐	Building A:	$3,958,910.80
☐	Building B:	$3,669,234.40
☐	Building C:	$2,027,734.80
☐	Seismic Engineering/installation Budget:	$25,000.00

HVAC VE Budget Option

This is budget only:

- Building A: Combine fan coils. Units with 6 fan coils will decrease to 3, Units with 5 fan coils will decrease to 3, Units with 4 fan coils will decrease to 2 units and units with 3 units will decrease to 2 units. Exhaust duct will be horizontal with sidewall termination. Linear diffusers will be stock boots with stock diffusers. Remove lined duct. -$682,650.00
- Building B: Combine fan coils. Units with 6 fan coils will decrease to 3, Units with 5 fan coils will decrease to 3, Units with 4 fan coils will decrease to 2 units and units with 3 units will decrease to 2 units. Exhaust duct will be horizontal with sidewall termination. Linear diffusers will be stock boots with stock diffusers. Remove lined duct. -$632,700.00
- Building C: Combine fan coils. Units with 6 fan coils will decrease to 3, Units with 5 fan coils will decrease to 3, Units with 4 fan coils will decrease to 2 units and units with 3 units will decrease to 2 units. Exhaust duct will be horizontal with sidewall termination. Linear diffusers will be stock boots with stock diffusers. Remove lined duct. -$349,650.00

System Control Proposal

We propose to furnish and install the following:

Thermal Engineering and Atkinson Electronics Inc have teamed up to provide a complete control system:

Atkinson Electronics Inc. is pleased to provide this scope of work for the above-mentioned project. Our pricing is based on plans from the office of WSP USA dated 11-18-2022. We have reviewed 0 (zero) addenda. If you have any questions, then please feel free to contact me.

Master List of Systems:

Campus Network Head End

- Provide and install head end network controller.
- Provide floor plan and system graphics.
- Provide remote access.
- Provide building scheduling.
- Provide system alarm.

Air Handling Unit

- Provide DDC controller.
- Provide control panel, control transformer, control relays.
- Provide start/stop/status of supply and return fans.
- Provide supply and return air duct temperature sensors.
- Furnish control valves for coils - Piping installation by others.
- Provide damper actuators for economizer dampers provided as part of the AHU.
- Provide differential pressure transducers in return and supply duct.
- Provide filter differential pressure sensors on filter section.
- Provide high duct static pressure switch.
- Provide mixed air temperature sensor.

Hot Water System

- Provide DDC controller.
- Provide control panel, control transformer, and control relays.
- Provide building loop supply and return temperature sensors.
- Provide return temperature per boiler.
- Provide differential pressure sensors.
- Provide outside air temperature sensor.
- Start/stop/status of the boilers and heat pumps.
- Furnish boiler isolation valves - Piping installation by others.
- Start/stop/status of the pumps.
- Provide emergency kill switch.

Domestic Hot Water System

- Provide DDC controller.
- Provide control panel, control transformer, and control relays.
- Provide building loop supply and return temperature sensors.
- Provide return temperature per boiler.
- Start/stop/status of the pumps and booster pump.
- Provide emergency kill switch.

Central Snow Melt Hot Water System

- Provide DDC controller.
- Provide control panel, control transformer, and control relays.
- Provide building loop supply and return temperature sensors.
- Provide return temperature per boiler.
- Provide differential pressure sensors.
- Provide outside air temperature sensor.
- Start/stop/status of the boilers.
- Furnish boiler isolation valves - Piping installation by others.
- Start/stop/status of the pumps.
- Provide emergency kill switch.
- Tie slab snow melt sensors into our control panel.

Chilled Water System

- Provide DDC controller.
- Provide control panel, control transformer, and control relays.
- Provide building loop supply and return temperature sensors.
- Provide differential pressure sensor.
- Start/stop/status of the heat pumps.
- Start/stop/status of the chilled water pumps.

Fan Coil Units

- Provide controls for 4-pipe fan coil units serving common areas.
    - Wall mount zone temperature sensor.
    - Leak detection sensors in condensate pan.
    - Discharge air temperature.
    - Hot water and chilled water control valves – Piping installation by others.
    - DDC controller.
    - 24v Transformer.
    - Start/stop/status of supply fan.

Fan Powered Terminal Units

- Provide DDC VAV controller.
- Provide control panel, control transformer, and control relays.
- Furnish reheat control valve – piping installation by others.
- Provide discharge air temperature sensor.
- Provide zone temperature sensor.

Garage Exhaust

- Provide DDC controller.
- Provide control panel, control transformer, control relays.
- Provide start/stop/status of garage exhaust fans and garage transfer fans.
- Provide CO/NO2 sensors.

Stairwell Pressurization

- Provide UL864 Listed DDC controller.
- Provide control panel, control transformer, control relays.
- Provide start/stop/status of stair pressure fans.
- Provide a 2-hour rated wire.

- Low voltage installation in all-conduit.
- Provide Stairwell Pressure Fire Fighter Control panel to be installed near fire alarm room/panel – one per building.

Residential Unit Deck Snow Melt – One per Unit

- Provide DDC controller.
- Provide control panel, control transformer, control relays.
- Provide zone control valve – Piping installation by others.
- Provide slab temperature sensor.
- Provide digital timer switch.

Building A:

- Air Handling Units – Qty 2 (2 are listed as future)
- Hot Water System – Qty 1
- Chilled Water System – Qty 1
- Common Area FCUs – Qty 6
- Fan Powered Terminal Units – Qty 14
- Garage Exhaust – Qty 15 CO/NO2 sensors, Qty 4 GEF, Qty 9 GTF
- Stairwell Pressure Fans – Qty 2
- Residential Unit Deck Snow Melt – Qty 15

Building B:

- Air Handling Units – Qty 2
- Hot Water System – Qty 1
- Domestic Hot Water System – Qty 1
- Snow Melt Hot Water System – Qty 1
- Chilled Water System – Qty 1
- Common Area FCUs – Qty 9
- Fan Powered Terminal Units – Qty 12
- Garage Exhaust – Qty 40 CO/NO2 sensors Qty 5 GEF, Qty 13 GTF
- Stairwell Pressure Fans – Qty 4
- Residential Unit Deck Snow Melt - Qty 23

Building C:

- Air Handling Units – Qty 1
- Hot Water System – Qty 1
- Chilled Water System – Qty 1
- Common Area FCUs – Qty 2
- Fan Powered Terminal Units – Qty 6
- Garage Exhaust – Qty 8 CO/NO2 sensors Qty 1 GEF, Qty 4 GTF
- Stairwell Pressure Fans – Qty 2
- Residential Unit Deck Snow Melt – Qty 13

Select	Bid Item	Bid Amount
☐	Building A:	$294,213.00
☐	Building B:	$435,942.00
☐	Building C:	$224,521.00

Excluded – The following is excluded from the price for this project

- Any goods, services, materials, or labor not specifically stated or described in this scope of work.
- Fire, smoke, fire/smoke dampers, or duct smoke detectors
- Provide installation and start-up of any part of the fire alarm system
- Providing, installing, or start-up of any part of the building Ethernet/internet network including routers and servers not listed in the scope of work
- Installing valves or dampers
- Providing motor starters, disconnects, high voltage wiring, or any work typically provided by the electrical contractor
- Providing access panels
- Any scope inside the residences not mentioned above
- Providing or installing stand a-lone thermostats in the residence

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TE | THERMAL ENGINEERING

Bid Clarifications

Terms and Conditions:

- This bid is valid for **30 days from bid date (7-27-23)**. If this bid is accepted by owner after 30 days, Thermal Engineering reserves the right to review and resubmit a new bid with new pricing.
- System engineering, including heating/cooling load calculations are performed after owner/contractor accepts this bid. Our bids rely on "rule of thumb" or industry standard sizing and may be subject to change based upon actual engineering calculations. Supplemental heating capacity is not included in this bid should it become necessary.
- Owner/contractor acknowledges that the construction cycle for projects may stretch out or be delayed for extended periods of time and for various reasons. During the construction cycle, should Thermal Engineering's costs increase for materials, fuels, labor or other supplies, these costs may be passed on to Contractor/Owner. Thermal Engineering will supply documentation justifying such price increases and owner/contractor agrees to absorb these increased costs.
- This bid and invoices related to this bid are provided with NET 30 payment terms. Interest on past due invoices will accrue at the rate of 1.5% compounded monthly. If Thermal Engineering invoices are not paid within the Net 30 window, interest will be calculated from the date of the invoice. Thermal Engineering reserves the right to stop work on all jobs related to owner/contractor if there are delinquent unpaid invoices related to the scope of the work on this bid or on any other project or bid associated with owner/contractor. Owner/contractor agrees to waive all claims for delay or other damages due to Thermal Engineering's decision to stop work due to delinquent invoices.
- If Thermal Engineering pursues collection efforts owner/customer agrees to pay all attorney's fees and costs of collection in addition to accrued interest.
- Thermal Engineering provides a 1-year warranty from date of start-up for its labor and for any products supplied by Thermal Engineering which have less than a one-year manufacturer's warranty. Thermal Engineering does not warrant any products or labor beyond 1-year after startup. For product or material with less than a 1-year manufacturer's warranty, Thermal Engineering's extension of that warranty to one year does not overlap the manufacturer's warranty and Thermal Engineering is not required to go out of pocket or replace defective product or materials at its own expense so long as the manufacturer's warranty is in place.
- Any scope of work not detailed within this bid, regardless of callouts on plans, specifications or such is not included. If contractor/owner believes Thermal Engineering's bid is incomplete or does not comport with the plans and specifications it is the responsibility of owner/contractor to alert Thermal Engineering to such omissions and obtain a corrected bid. Thermal Engineering does not perform work or provide materials for free.
- Project scheduling: The Project Schedule must be disclosed to Thermal Engineering with sufficient allowance of time to acquire materials and properly perform the work. Thermal Engineering reserves the right to modify schedule(s) as required. No allowance for overtime is included in this bid. Owner/contractor agrees to pay for overtime labor charges in the event overtime labor is required or requested by owner/contractor or is necessitated by owner/contractor demands and deadlines.

Permits, Fees, and Insurance:

- Due to unforeseen requirements imposed by each jurisdiction, permits and fees are excluded from the bid. We will pull any required permits and pass these costs to the contractor/owner based on time and expenses +20%.
- Thermal Engineering carries $2,000,000 general liability, $1,000,000 workers compensation and $1,000,000 automobile liability insurance policies. Policy amounts, specialty insurance and/or umbrella requirements greater than this will be priced accordingly and passed to Contractor/Owner at cost + 10%.
- Bonds are not included with this bid. Should a bond be required, Thermal Engineering will pass these costs onto the Contractor/Owner at cost + 10%.

*** _____ Bid Accepted

*** _____ Date

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