

May 13, 2026 (Revised May 22, 2026)

Joshua Burman  
Director of Public Works  
Village of Homewood  
17755 Ashland Ave.  
Homewood, IL 60430

Re: Public Safety Campus HVAC Improvements – ‘Project’  
Kluber, Inc. Proposal No. 260427.01R1

Dear Mr. Burman:

Thank you for the opportunity to present this Proposal for Professional Services for the above referenced Project. It is our understanding that the Village of Homewood (‘Owner’) desires to engage Kluber, Inc. (Architect’) to provide usual and customary architectural and engineering Basic Services for the proposed HVAC system renovations at the Public Safety Campus located at 17950 Dixie Hwy., Homewood, IL (herein referred to as ‘Project’).

### **OVERVIEW OF PROJECT SCOPE**

The Project consists of the implementation of the HVAC improvements at the Public Safety Campus. The existing facility is comprised of three (3) levels (partial basement, first and second) totaling approximately 25,000 square feet. Kluber has completed a Study/Assessment Phase dated May 26, 2026 (Exhibit A), which presented two (2) options. Option 1 is the implementation of a Variable Refrigerant Flow System and Option 2 is the implementation of a Hot Water / Chilled Water System. Based on final review with the Owner, the Owner has selected Option 2, boiler chiller central plant.

It has also been determined that the Project will have two (2) phases resulting in separate documents for Construction Documents, Procurement and Construction Administration Phases. The initial Phase 1 will be the overall improvements to the Public Safety Campus. Phase 2 will be isolated to the Shooting Range. The intent is that Kluber prepare the Procurement documents for Phase 1 only with Phase 2 documents as a future project determined by the Owner.

### **INITIAL INFORMATION**

- The Owner’s budget for the Cost of the Work (CoW) is \$2,300,000.00 for Phase 1. The Cost of the Work is the total cost to construct all elements of the Project designed or specified by Kluber, Inc.; it does not include A/E fees, land acquisition costs, permit fees, utility service connection or activation fees, financing costs, contingencies for changes in the Work, or other soft costs that are the responsibility of the Owner.
- The anticipated Project schedule is to be determined as mutually agreed.
- The intended Project delivery method is a single contract for General Construction; single bid package.
- The Owner’s representative for the Project will be Joshua Burman or appointed.
- Kluber, Inc.’s representative for the Project will be Charli Johnsos.

Assumptions/Exclusions include the following:

- A. It is our understanding that the Owner has provided or will provide all environmental testing and abatement of all hazardous materials in the area where renovation work will occur.

- B. The assumption is that the current facility is code compliant with the codes that were in effect when constructed. Our scope of services does not include bringing the facility up to current codes and standards beyond the scope of Work for the Project.
- C. The existing utilities (water, sewer, gas, electric) are capable of supporting the proposed renovations.
- D. The existing drawings provided by the Owner align with the as-built conditions with some minor adjustments that have occurred over the years.

The foregoing is based on our communications over the past several weeks and the completed HVAC Study/Assessment deliverable dated May 26, 2026.

## **BASIC SERVICES**

Kluber, Inc. proposes to provide usual and customary architectural and engineering Basic Services for the Project as set forth in the standardized *AIA B101 - 2017 Standard Form of Agreement between Owner and Architect*, and in accordance with the general understandings applicable to our relationship with you, with limitations as follows:

### Construction Document Phase (Phase 1):

- Update documents to incorporate Owner comments from the HVAC Study/Assessment Phase
- Review final information furnished by the Owner
- Additional non-invasive site review as required to document the existing conditions related to the Project scope of work
- Kick-off meeting with Owner to discuss Project in detail
- Perform code review related to Project scope of work
- Prepare specifications
  - Owner bidding requirements
  - Technical requirements for architectural and engineering systems
- Prepare technical drawings
- Prepare final estimate of Cost of the Work
- Administer virtual meetings with Design Team & vendors to review project
- Review final documents with Owner prior to bidding
- Prepare documents for permit submission by the Contractor and respond to permit comments from the Authority Having Jurisdiction.

### Procurement Phase (Phase 1):

- Assist Owner in contacting potential bidders for Project
- Prepare agenda and attend pre-bid meeting
- Review substitution requests
- Respond to contractor questions during bidding
- Issue addenda (if required)
- Participate in bid opening
- Perform contractor bid review evaluations
- Prepare and issue contractor bid results letter

### Construction Administration Phase (Phase 1):

- Prepare agenda and attend pre-construction meeting
- Issue ASI's and RFP's as required
- Respond to Contractor questions
- Review progress pay requests if requested
- Participate in conference calls administered by the Contractor with Contractor, Owner, Vendors and Design Team
- Review Contractor change order requests and prepare change order documents
- Perform site visits for progress meetings, to address contractor questions and to observe the work is proceeding in general conformance with the contract documents with a maximum of six (6) visits for Phase 1.
- Perform up to two (2) reviews of each construction submittal



- Perform one (1) site visit to confirm Substantial Completion and identify punch list items
- Perform one (1) site visit to verify completion of punch list items and confirm Final Completion of the Work
- Issue Certificate of Substantial Completion
- Assumed Construction duration: 8 months for Phase 1.

## SUPPLEMENTAL AND ADDITIONAL SERVICES

Supplemental Services are not included in the Basic Services described above, but may be required for the Project or specifically requested by the Owner. The list below indicates Supplemental Services that will be provided by Kluber, Owner, To Be Determined (TBD) or Not Provided for the Project.

Supplemental Services:	Provided by:
Programming, or Validation of Owner's Project Program, as described below	Not Provided
<b>Existing Facilities:</b>	
Survey of existing facility(ies) ( <u>required</u> if Owner's "as-built" drawings are discovered to be unavailable, inaccurate, incomplete or otherwise inconsistent with actual existing conditions)	Not Provided
Measured drawings documenting existing conditions of existing facility(ies)	Not Provided
Other Facility Support Services (as described in AIA B210 – 2017)	Not Provided
Environmental Testing and Abatement for hazardous materials (assumption is the facility does not contain hazardous materials)	Owner
<b>Site Evaluation and Design:</b>	
Site Evaluation and Planning (in accordance with AIA B203 – 2017)	Not Provided
Civil Engineering	Not Provided
Landscape Design	Not Provided
<b>Architectural and Interior Design:</b>	
Multiple preliminary designs/options during Schematic Design Phase	Not Provided
Building information modeling (BIM)	Not Provided
Renderings, models, mockups, or other presentation materials requested by Owner	Not Provided
Historic Preservation (in accordance with AIA B205 – 2017)	Not Provided
Architectural Interior Design, including assistance with selection of interior finish colors, preparation of color boards, (in accordance with AIA B252 – 2019)	Not Provided
Furniture, Furnishings and Equipment (FF&E) (in accordance with AIA B253 – 2019)	Not Provided
<b>Green Design:</b>	
Extensive environmentally responsible design	Not Provided
LEED Certification (in accordance with AIA B214 – 2012)	Not Provided
<b>Engineered Systems:</b>	
Commissioning of engineered systems	TBD
Telecommunications/data systems design	Not Provided
Door Control & Security Access design	Not Provided
Audio Visual system design	Not Provided
<b>Cost Control:</b>	
Value Analysis (in accordance with AIA B204 – 2007)	Not Provided
Detailed opinions of probable construction cost (beyond conceptual costs as determined by per unit area or unit volume techniques)	Not Provided
Opinion of total project cost (including incorporation of soft costs such as A/E fees, permit fees, land acquisition costs, and costs of Additional Services not provided by Kluber, Inc.)	Not Provided
<b>Architect's Instruments of Service:</b>	
As-designed record drawings (incorporating Work documented in Supplemental Instructions, Change Orders and Change Directives) (Included as part of Basic Services)	Kluber
As-built record drawings (incorporating conditions as constructed by the Contractor)	Not Provided
Measured drawings, Design Documents, Construction Documents, as-designed record drawings or as-built record drawings furnished to Owner in AutoCAD .dwg format	Not Provided
<b>Project Delivery, Coordination and Management:</b>	
Coordination of design/engineering consultants employed directly by Owner. Limited to as required for the Architect to prepare its Instruments of Service.	Not Provided
Multiple prime construction contracts	Not Provided
Fast-track project delivery/design services	Not Provided
<b>Construction:</b>	
Conformed construction documents (incorporating Addenda and permit revisions) (Included as part of Basic Services)	Kluber
On-site project representation (not including the site visits noted under the Construction Administration Phase)	Not Provided
Post-occupancy evaluation	Not Provided
Construction Testing Services	Owner or Contractor

Commissioning:



- Owner or Architect will retain Consultant for Commissioning services. Scope TBD.

Additional Services are not included in the Basic Services described above, but may be required for the Project. The list below indicates Additional Services that may arise at no fault of the Architect and approved by the Owner are as follows.

1. Services necessitated by a change in the Initial Information, previous instructions or approvals given by the Owner, or a material change in the Project including size, quality, complexity, the Owner's schedule or budget for Cost of the Work, or procurement or delivery method.
2. Services necessitated by the enactment or revision of codes, laws, or regulations, including changing or editing previously prepared Instruments of Service.
3. Changing or editing previously prepared Instruments of Service necessitated by official interpretations of applicable codes, laws or regulations that are either (a) contrary to specific interpretations by the applicable authorities having jurisdiction made prior to the issuance of the building permit, or (b) contrary to requirements of the Instruments of Service when those Instruments of Service were prepared in accordance with the applicable standard of care.
4. Services necessitated by decisions of the Owner not rendered in a timely manner or any other failure of performance on the part of the Owner or the Owner's consultants or contractors.
5. Preparing digital models or other design documentation for transmission to the Owner's consultants and contractors, or to other Owner-authorized recipients.
6. Preparation of design and documentation for alternate bid or proposal requests proposed by the Owner.
7. Preparation for, and attendance at, a public presentation, meeting or hearing.
8. Preparation for, and attendance at, a dispute resolution proceeding or legal proceeding, except where the Architect is party thereto.
9. Evaluation of the qualifications of entities providing bids or proposals.
10. Consultation concerning replacement of Work resulting from fire or other cause during construction.
11. Assistance to the Initial Decision Maker (third party consultant, such as Owner's Representative), if other than the Architect.

**COMPENSATION**

Kluber, Inc. proposes to provide the Basic Services described above for the Stipulated Sum noted below.

Kluber, Inc. proposes to provide the Supplemental and Additional Services described above for the fees scheduled below.

Compensation for Basic, Supplemental and Additional Services does not include the services of other independent professionals, associates, or other consultants. If they are required, our fee will be increased by the direct costs of those services multiplied by a factor of 1.15 for overhead, coordination and management of the delivery of those services.

Our billing for Services will be based on progress of the work performed and is outlined as follows:

<u>Basic Services:</u>	
Construction Documents Phase (Phase 1).....	\$142,600.00
Procurement Phase (Phase 1) .....	\$3,600.00
Construction Administration Phase (Phase 1).....	<u>\$25,800.00</u>
Total Basic Services Fee:.....	\$172,000.00
Specialty Consultant Allowance (Cx):.....	\$45,000.00
Estimated Reimbursable Expenses:.....	<u>\$750.00</u>
Total Basic Services + Specialty Consultant Allowance + Reimbursable Expenses:....	\$217,750.00



Supplemental and Additional Services:

As requested .....	At Hourly Rates listed below
Responding to Permit Comments from AHJ.....	At Hourly Rates listed below
Supplemental Services (if required) .....	To be Determined
Additional Services .....	At Hourly Rates listed below
Construction Documents Phase (Phase 2).....	Future Proposal
Procurement Phase (Phase 2) .....	Future Proposal
Construction Administration Phase (Phase 2).....	Future Proposal
Each additional Site Visit during construction.....	\$750.00

Reimbursable Expenses (not included in fees noted above) incurred in connection with our Basic and Supplemental Services, and our consultants, will be charged on the basis of cost, without additional markup. Anticipated reimbursable expenses for this project include expedited courier services, printing and plotting, document reproduction, premiums for professional liability insurance in excess of usual and customary coverage and models, renderings or professional photography, and are anticipated not to exceed \$750.00.

Changes in services, when authorized, will be charged on an hourly rate as scheduled hereafter and amended annually in accordance with our hourly rate schedule (2026):

<b>Kluber Architects + Engineers Staff</b>	<b>Hourly Rate</b>
Senior Project Manager .....	\$220.00
Project Manager .....	\$194.00
Director of Mechanical Engineering .....	\$248.00
Senior Mechanical Engineer.....	\$184.00
Senior Mechanical Designer.....	\$170.00
Project Mechanical Engineer .....	\$155.00
Project Mechanical Designer .....	\$140.00
Mechanical Engineer.....	\$127.00
Mechanical Designer .....	\$120.00
Junior Mechanical Designer.....	\$115.00
Director of Electrical Engineering .....	\$248.00
Senior Electrical Engineer .....	\$184.00
Senior Electrical Designer.....	\$170.00
Project Electrical Engineer.....	\$155.00
Project Electrical Designer .....	\$140.00
Electrical Engineer .....	\$127.00
Electrical Designer.....	\$120.00
Junior Electrical Designer.....	\$115.00
Director of Structural Engineering .....	\$248.00
Senior Structural Engineer.....	\$184.00
Senior Structural Designer .....	\$170.00
Project Structural Engineer.....	\$155.00
Project Structural Designer .....	\$140.00
Structural Engineer .....	\$127.00
Structural Designer.....	\$120.00
Junior Structural Designer.....	\$115.00
Director of Architecture .....	\$225.00
Senior Architect.....	\$175.00
Senior Architectural Designer .....	\$160.00
Project Architect .....	\$145.00
Project Architectural Designer.....	\$130.00
Architect.....	\$120.00
Architectural Designer .....	\$110.00
Junior Architectural Designer.....	\$100.00



Senior Project Coordinator.....	\$125.00
Project Coordinator.....	\$100.00
Technology Director.....	\$200.00
Technology Coordinator.....	\$165.00
Director of Business Development.....	\$170.00
Senior Marketing Coordinator.....	\$125.00
Marketing Coordinator.....	\$100.00
Mark-up for hourly Projects (indirect costs, OH & P).....	20.0%
Hourly rates for dispute resolution or legal proceedings are 2.0 times the rates noted above.	

Limitation of Liability: Notwithstanding any other provision of this Agreement, and to the fullest extent permitted by law, the total liability, in the aggregate, of Kluber, Inc.'s officers, directors, partners, employees, agents, and Kluber's Consultants, and any of them to Owner/Client and anyone claiming by, through, or under Owner/Client for any and all claims, losses, costs, or damages whatsoever arising out of, resulting from, or in any way related to the Project or the Subagreement from any cause or causes, including but not limited to the negligence, professional errors or omissions, strict liability or breach of contract, or warranty express or implied of Kluber's officers, directors, partners, employees, agents, or Kluber's Consultants, or any of them shall not exceed the total amount of two times fee, excluding reimbursable expenses, up to the and not exceeding the insurance policy limits. The services provided herein are governed solely with regards to permanent building codes only, compliance with OSHA regulations is specifically excluded.

**INSURANCE**

Kluber, Inc. will maintain its standard insurance as noted below until termination of this Agreement. If the Owner requirements are above the types and limits the Architect normally maintains, the Owner shall pay the Architect as a reimbursable expense.

- Commercial General Liability: \$2,000,000.00 for each occurrence, \$4,000,000.00 in the aggregate for bodily injury and property damage.
- Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Architect: \$1,000,000.00 per accident for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles, along with any other statutorily required automobile coverage.
- Workers' Compensation: At statutory limits.
- Employers' Liability: \$1,000,000.00 for each employee, and \$1,000,000.00 policy limit.
- Professional Liability: \$2,000,000.00 per claim, \$5,000,000.00 in the aggregate covering negligent acts, errors and omissions in the performance of professional services.

**COPYRIGHTS AND LICENSES**

1. The Architect and the Owner warrant that in transmitting Instruments of Service, or any other information, the transmitting party is the copyright owner of such information or has permission from the copyright owner to transmit such information for its use on the Project.
2. The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and shall retain all common law, statutory and other reserved rights, including copyrights. Submission or distribution of Instruments of Service to meet official regulatory requirements or for similar purposes in connection with the Project is not to be construed as publication in derogation of the reserved rights of the Architect and the Architect's consultants.
3. The Architect grants to the Owner a nonexclusive license to use the Architect's Instruments of Service solely and exclusively for purposes of constructing, using, maintaining, altering and adding to the Project, provided that the Owner substantially performs its obligations under this Agreement. The license granted under this section permits the Owner to authorize the Contractor, Subcontractors, Sub-subcontractors, and suppliers, as well as the Owner's consultants and separate contractors, to reproduce applicable portions of the Instruments of Service, solely and exclusively for use in performing services or construction for the Project. If the Architect rightfully terminates this Agreement for cause, the license granted shall terminate.



4. In the event the Owner uses the Instruments of Service without retaining the authors of the Instruments of Service, the Owner releases the Architect and Architect's consultant(s) from all claims and causes of action arising from such uses. The Owner, to the extent permitted by law, further agrees to indemnify and hold harmless the Architect and its consultants from all costs and expenses, including the cost of defense, related to claims and causes of action asserted by any third person or entity to the extent such costs and expenses arise from the Owner's use of the Instruments of Service. The terms shall not apply if the Owner rightfully terminates this Agreement for cause.
5. No other license or right shall be deemed granted or implied under this Agreement. The Owner shall not assign, delegate, sublicense, pledge or otherwise transfer any license granted herein to another party without the prior written agreement of the Architect. Any unauthorized use of the Instruments of Service shall be at the Owner's sole risk and without liability to the Architect and the Architect's consultants.
6. These provisions shall survive the termination of this Agreement.

## **CLAIMS AND DISPUTES**

- A. The Owner and Architect shall commence all claims and causes of action against the other and arising out of or related to this Agreement, whether in contract, tort, or otherwise, in accordance with the requirements of the binding dispute resolution method selected in this Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work.
- B. To the extent damages are covered by property insurance, the Owner and Architect waive all rights against each other and against the contractors, consultants, agents, and employees of the other for damages, except such rights as they may have to the proceeds of such insurance as set forth in AIA Document A201-2017, General Conditions of the Contract for Construction. The Owner or the Architect, as appropriate, shall require of the contractors, consultants, agents, and employees of any of them, similar waivers in favor of the other parties enumerated herein.
- C. The Architect and Owner waive consequential damages for claims, disputes, or other matters in question, arising out of or relating to this Agreement. This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination of this Agreement.
- D. Any claim, dispute or other matter in question arising out of or related to this Agreement shall be subject to mediation as a condition precedent to binding dispute resolution. If such matter relates to or is the subject of a lien arising out of the Architect's services, the Architect may proceed in accordance with applicable law to comply with the lien notice or filing deadlines prior to resolution of the matter by mediation or by binding dispute resolution.
- E. The Owner and Architect shall endeavor to resolve claims, disputes and other matters in question between them by mediation, which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of this Agreement. A request for mediation shall be made in writing, delivered to the other party to this Agreement, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of a complaint or other appropriate demand for binding dispute resolution but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration proceeding is stayed pursuant to this section, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.
- F. The parties shall share the mediator's fee and any filing fees equally. Mediation shall be held in the place where the Project is located unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.
- G. If the parties do not resolve a dispute through mediation, the method of binding dispute resolution shall be litigation in the Circuit Court for the Sixteenth Judicial Circuit, Kane County, Illinois. The prevailing party shall be entitled to recover its costs, including expert witness fees and reasonable attorney fees.



PRELIMINARY ENGINEERING PHASE

- Final Report – May 26, 2026



# Village of Homewood – HVAC Renovations

SUBMITTED TO:

**Village of Homewood**

2020 Chestnut Road  
Homewood, Illinois 60430

Project number: 26-347-1670



May 26, 2026

Mr. Joshua Burman  
Director of Public Works  
Village of Homewood  
17755 Ashland Ave.  
Homewood, IL 60430

Re: Public Safety Campus HVAC Replacement  
Kluber Project No. 26-347-1670

The Kluber team has enjoyed the opportunity to work with the representatives from the Village of Homewood on the Heating, Ventilation, and Air Conditioning (HVAC) Replacement for the Public Safety Campus.

The following document has been grouped into several sections as described below:

#### **Project Scope**

The work defined by Kluber's Proposal and as clarified or modified through discussions with Village representatives during the current phase of Kluber's work.

The Village of Homewood would like to replace the current HVAC system at the Public Safety Campus and is looking for recommendations, budgets, and options to phase future HVAC projects.

#### **Preliminary Evaluation**

An analysis of the existing conditions including Kluber's review of available existing drawings and site visits to review existing conditions.

#### **Recommendations**

Recommendations for improvements to and replacement of the current HVAC system including design options and phasing.

#### **Preliminary Cost Estimate**

An opinion of probable cost for the recommendation discussed. It includes costs for materials, selective demolition, allowances, contingencies and soft costs.

#### **Next Steps**

The Village of Homewood has reviewed the plan and desires to implement Option 2. Upon acceptance of the Study the next steps would be to proceed with the Construction Documents phase of the project.

This phase will include detailed Drawings and Technical Specifications, as well as front-end bidding requirements for the Village.

As always, if you have any questions regarding the attached information, please contact our office.

It has been a pleasure working with you and your team, and we look forward to proceeding with the next phase of this project.

Sincerely,



Charli Johnsos  
Senior Project Manager  
[cjohnsos@kluberinc.com](mailto:cjohnsos@kluberinc.com)



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# Project Scope

This section describes the scope of work that has led to this report.





## THE PROJECT SCOPE IS FURTHER DEFINED AS FOLLOWS:

### Homewood Public Safety Campus – HVAC Improvements

The project consists of developing options and cost estimates for a new HVAC system for the Public Safety Campus. The existing facility is comprised of three levels (partial basement, first and second) totaling approximately 25,000 square feet. This includes reviewing the existing conditions, evaluating modern system alternatives and recommending solutions that ensure reliable performance, energy efficiency and long-term maintainability for this mission-critical, 24/7 facility.

# Preliminary Evaluation

Review of available existing drawings or as-builts and site visit to review existing conditions.



## Existing Systems Descriptions

### MECHANICAL SYSTEMS

The building is heated and cooled with a ground source heat pump (GSHP) system. The system consists of a water loop (ground loop) that is pumped between a set of geothermal wells and indoor ground-sourced heat pumps. There are twenty-four, 400-foot-deep geothermal wells at the Public Safety Center, located in the adjacent parking lot on the west side of the building. These wells use the earth's relatively constant ground temperature to maintain the ground loop water temperature within a specific range. The water loop absorbs heat from the ground in the winter and rejects heat in the summer. The indoor ground source heat pumps are refrigerant based systems which provide the heating or cooling to the building. Heat pumps contain a reversing valve in the refrigerant system which allows the system to operate in heating or cooling. When the heat pump is in cooling mode, heat from the building is rejected to the ground loop. In heating mode, heat is absorbed from the ground loop.

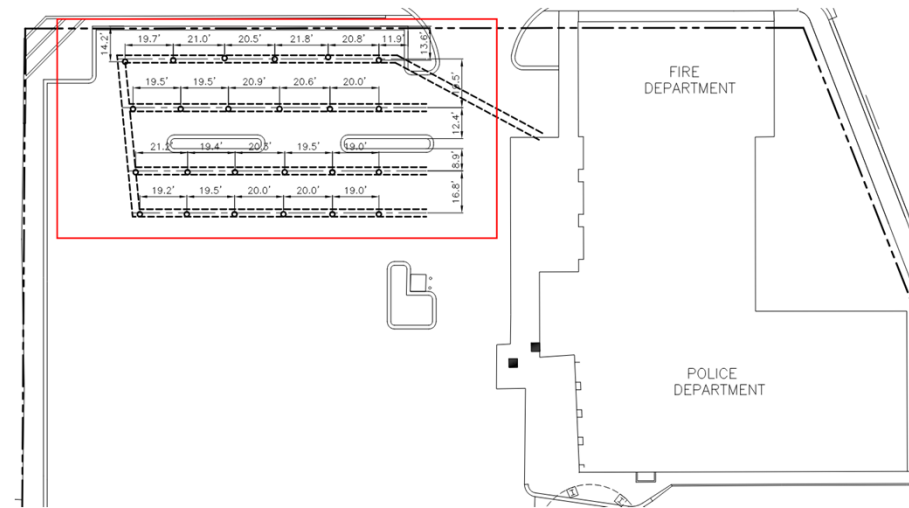
The fire station and the police station have separate piping connections to the geothermal field. One building's part of the ground loop could potentially be shut down without impacting the other building's heating and cooling capabilities. The ground water supply and return piping mains enter and leave the buildings in the first-floor mechanical room behind the sallyport of the police station and the first-floor maintenance room of the fire station. Inline pumps direct the ground water flow from the geothermal field into the buildings. Propylene glycol is utilized to prevent the water from freezing.

#### Police Station: First floor

The first floor of the police station is heated and cooled by ten floor-mounted ground-sourced heat pumps (GSHP) and eight ducted GSHP's located above the ceiling. Code required ventilation air is supplied by a ducted, vertical GSHP. This unit pulls ventilation air from the wall louver on the west side of the building and pre-conditions the outside air. An electric duct heater provides additional heating capacity for the unit. This air is then supplied directly into the first-floor plenum space which mixes with the return air of the ducted GSHP's. GSHP's located above the first-floor ceiling distribute ventilation to the space by returning this mixed air from the plenum space. This includes the interview rooms, high-security holding area, and the interior rooms. First floor offices along the perimeter of the building are heated and cooled by floor-mounted GSHP's. The windows in these offices are operable, which meet the requirements for natural ventilation. Piping is routed in the ceiling space and down to the floor mounted units through piping chases and enclosures. Hydronic piping and ductwork from the previous HVAC system is abandoned throughout the first-floor ceiling space.

#### Police Station: Lower Level

The lower level of the police station is heated and cooled by six ducted GSHP's located above the ceilings and inside the mechanical room. A roof-mounted energy recovery ventilator (ERV) distributes ventilation to the lower level. An ERV is an energy recovery device which transfers energy from an exhaust airstream to the outdoor airstream without mixing of air. Similar to the first floor, the ventilation is supplied directly into the plenum space which mixes with the return air of the ducted GSHP's. These ducted GSHP's distribute the mixed air to the space. The bathrooms and locker rooms are exhausted through the same energy recovery ventilator that supplies outside air to the lower-level.



### Geothermal Field Location

## Existing Systems Descriptions - CONTINUED

### MECHANICAL SYSTEMS - CONTINUED

#### Police Station: Sallyport

The sallyport is heated by two gas-fired unit heaters. Exhaust is provided by a roof mounted exhaust fan interlocked with a gravity ventilator for makeup air. The ventilation system is controlled by a wall switch.

#### Police Station: Lower-Level Shooting Range

The shooting range on the lower level is heated and ventilated by a gas-fired makeup-air unit. The shooting range equipment is only operated when the shooting range is in use. Heated outside air is ducted to a supply plenum located on the entry side of the range. The supply plenum contains a perforated wall which evenly distributes air across the face of the wall and into the range. Air is pulled across the range with an exhaust intake located downrange. The exhaust air is filtered by HEPA filters before discharging above the roof of the building. The shooting range does not have any air conditioning making the space very uncomfortable during the warmer months. In addition, based on feedback from the using agency, when the range is not in use, the space can become very cold in the winter and warm during the summer.

#### Fire Station: First Floor

The first floor of the fire station is heated and cooled by eight floor-mounted ground-sourced heat pumps (GSHP) and two ducted GSHP's located above the ceiling. The windows in the fire station are operable, which meet the requirements for natural ventilation. Piping is routed in the ceiling space and down to the floor mounted units through piping chases and enclosures. Hydronic piping and ductwork from the previous HVAC system is abandoned throughout the first-floor ceiling space.

#### Fire Station: Second Floor

The second floor of the fire station is heated and cooled by six floor mounted GSHP's and a packaged constant-volume rooftop unit. The GSHP's provide heating and cooling to the day room, kitchen, and locker room. Piping to these GSHP's is routed from the first-floor ceiling space below. Code required ventilation air is provided by a roof-mounted energy recovery ventilator with an electric duct heater for supplemental heat. The outside air is ducted directly to the day room, kitchen, and dormitory corridor. The men's locker room is exhausted through the energy recovery ventilator. The rooftop unit provides heating, cooling and ventilation to the dormitory and the chief's room. These spaces operate as a single zone with one thermostat controlling the entire dormitory.

#### Fire Station: Apparatus Bay

The apparatus bay is heated by four gas-fired unit heaters. Exhaust is provided by two roof mounted exhaust fans interlocked with gravity ventilators for makeup air. The ventilation system is controlled by a wall switch. A source-capture exhaust system is installed to connect the tailpipe of emergency vehicles directly to exhaust. Piping from the previous HVAC system is abandoned throughout the Apparatus Bay.



## Existing HVAC Drawing (Police Station)

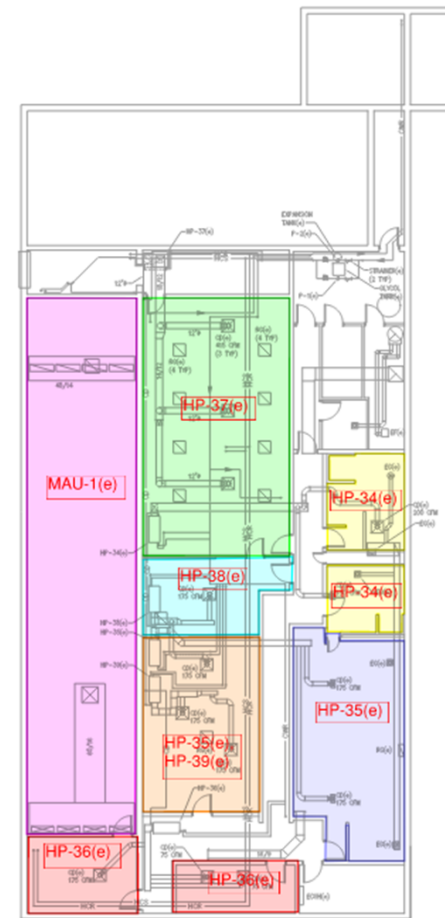
Floor-mounted  
ground-source  
Heat pump

### Abbreviations:

- GUH – gas-fired unit heater
- HP – ground-source heat pump
- EUH – electric unit heater
- ECUH – electric cabinet unit heater
- CD – ceiling diffuser
- RG – return grille
- EG – exhaust grille

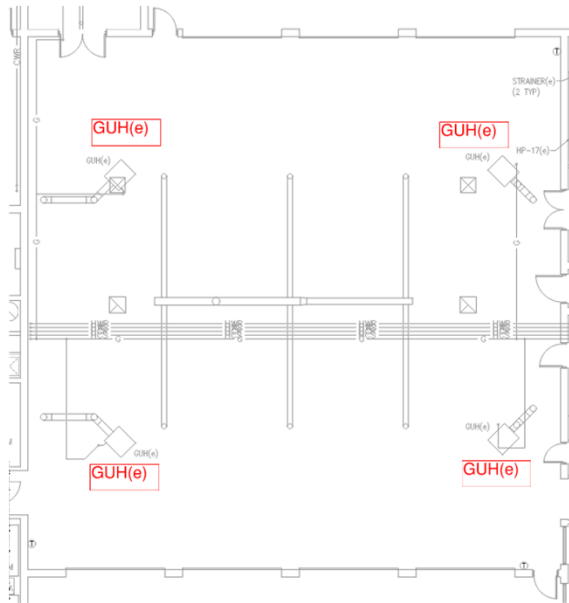


Police Station First Floor



Police Station Lower Level

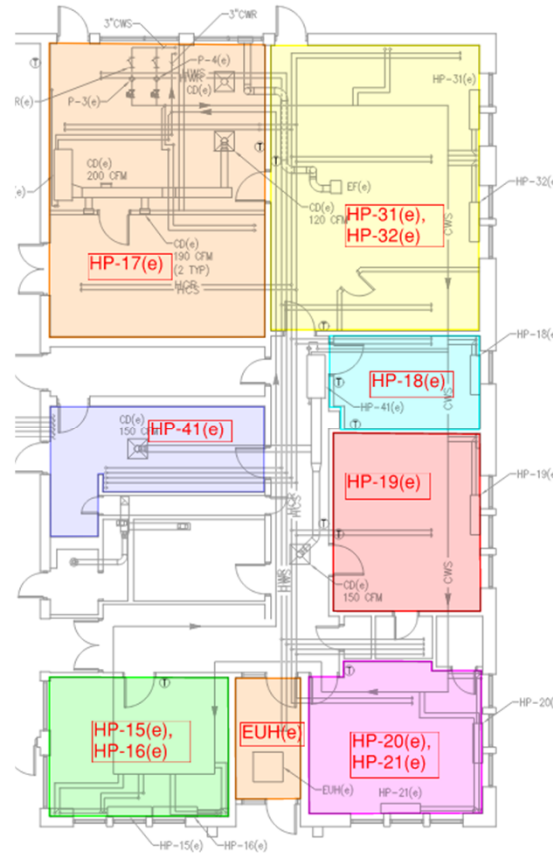
## Existing HVAC Drawing (Lower Level, Second Floor)



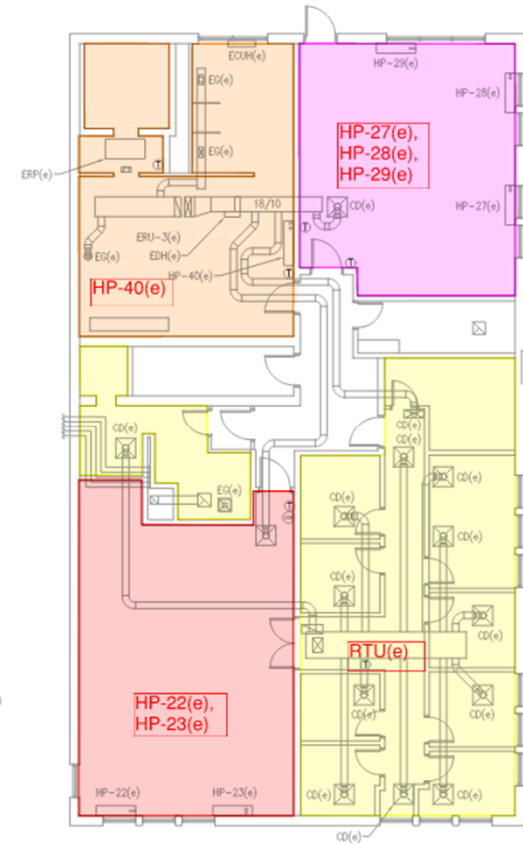
**Apparatus Bay**

### Abbreviations:

- RTU – rooftop unit
- HP – ground-source heat pump
- ERP – electric radiant panel
- ECUH – electric cabinet unit heater
- CD – ceiling diffuser
- RG – return grille
- EG – exhaust grille

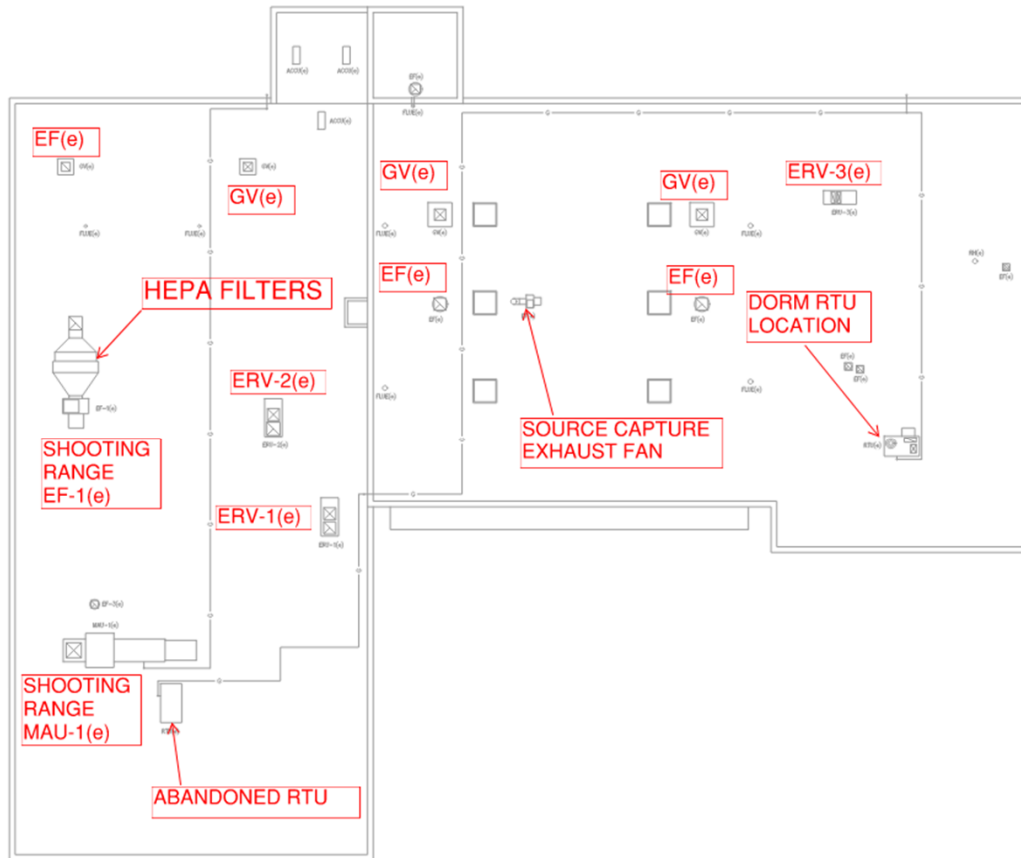


**Fire Station First Floor**



**Fire Station Second Floor**

## Existing HVAC Drawing (Roof)



Roof

Abbreviations:  
 RTU – rooftop unit  
 EF – exhaust fan  
 ERV – energy recovery unit  
 MAU – makeup air unit  
 GV – gravity ventilator

## HVAC Systems Photos



Typical ducted ground source heat pump



Shooting Range perforated supply air wall



Shooting Range

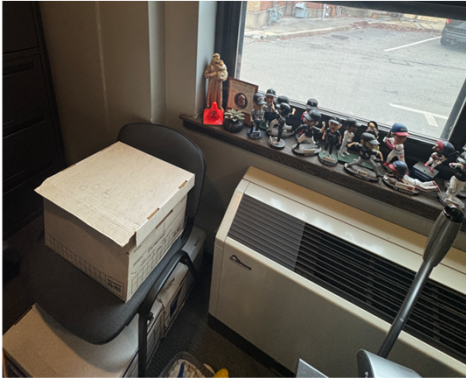


Police Department ground loop pumps



Police Station ground loop equipment (glycol feeder, expansion tank, pot feeder & side-stream filter)

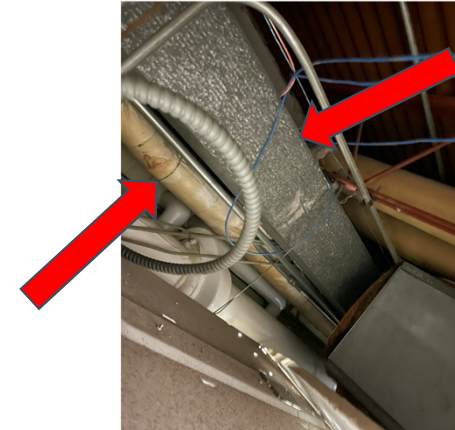
## HVAC Systems Photos - Continued



Typical floor-mounted HP



Piping to / from geothermal field  
(Police Department)



Abandoned HVAC infrastructure  
above ground water piping



Fire Station ground pump



Piping to / from geothermal  
field (Fire Station)



Typical gas-fired unit heater

## HVAC Systems Photos - Continued



Shooting Range makeup air unit



Shooting Range exhaust fan and HEPA filter housing



Apparatus Bay source-capture exhaust fan



Police Department energy recovery ventilators



Fire Station dormitory rooftop unit

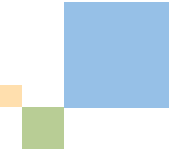


Typical roof mounted exhaust fan

# Recommendations

The Recommendations are a series of written descriptions that reference the building codes; descriptions of HVAC systems; system modifications and possible equipment selections.





## Applicable Building Codes

### Code Information:

This project site falls within the Village of Homewood and will be designed to meet the requirements of the adopted building codes below:

2018 International Building Code

2018 International Existing Building Code

2018 International Mechanical Code

2014 State of Illinois Plumbing Code

2018 International Fuel Gas Code

2017 National Electrical Code

2024 Illinois Energy Conservation Code

2018 Illinois Accessibility Code

Local amendments to the above code

## Recommendations - Summary

### MECHANICAL SYSTEMS

#### Option 1 Summary:

##### Variable Refrigerant Flow System:

Remove the geothermal system, abandon the geothermal field, and install a variable refrigerant flow (VRF) system for heating and cooling. Install a combination of floor-mounted, wall-mounted, recessed ceiling cassette, and above-ceiling ducted indoor units. Install dedicated outdoor air systems (DOAS) with energy recovery for ventilation.

#### Option 2 Summary:

##### Hot Water / Chilled Water System

Remove the geothermal system, abandon the geothermal field, and install a 4-pipe hot water / chilled water system. Create separate mechanical rooms for a chiller and boilers. Install a split air-cooled chiller with the condenser on the roof for cooling. Install multiple natural gas-fired high efficiency condensing boilers for heating. Hot and chilled water would be distributed throughout the building to various fan coil units to heat and cool the building. Install dedicated outdoor air systems for the fire station and police department to provide ventilation.

#### Misc. Infrastructure Summary:

Replace the shooting range MAU with a packaged dedicated outdoor air system to provide heating and cooling. Replace the shooting range exhaust and air filtration system with a similar system. Install a hazardous gas detection system for the Sallyport and Apparatus Bay. Re-use the existing roof top unit and install VAV diffusers for the dormitory rooms.

## Recommendations

### MECHANICAL SYSTEMS

#### Option 1: Variable Refrigerant Flow System (VRF):

A VRF system is a refrigerant based split system heat pump utilized to heat and cool a building. The outdoor heat pumps operate in heating or cooling year-round based on the building's requirements. VRF systems provide superior zone control as each office can have its own indoor unit with thermostat. Branch selectors control the amount of refrigerant flowing to each indoor unit.

Indoor VRF units are decoupled systems. This means that the ventilation systems and heating/cooling systems are separated. A dedicated outdoor air system with energy recovery (DOAS) would be necessary with the installation of a VRF system. A DOAS is a refrigerant-based packaged roof top unit used to condition the ventilation air. A DOAS would be sized to condition the code required outdoor air amount. The required outdoor air amount would be a much smaller airflow than is required for space conditioning purposes. Treated outdoor air would be supplied to each room at a room neutral condition.

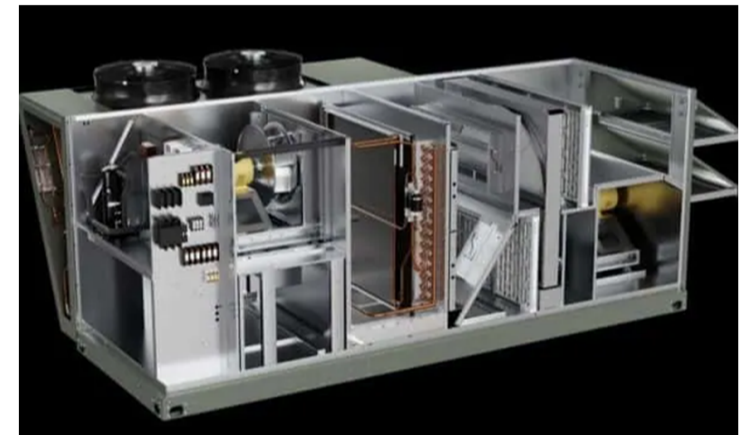
The outdoor equipment for the VRF system will be located on the roof. One VRF outdoor unit would be located on the roof of the fire station and would serve the VRF indoor units in the fire station. One VRF outdoor unit would be located on the roof of the police station and would serve the VRF indoor units in the police station. Refrigerant would be piped inside the building to the indoor equipment.

#### Police Station: Lower Level

The lower level of the police station has a very low structure. Remove above ceiling heat pumps and replace with wall-mounted or ceiling cassette style VRF indoor units to provide heating and cooling to the lower level. Remove existing roof-mounted ERV and replace with a roof-mounted DOAS to provide ventilation to the lower level. Existing outdoor air and exhaust air duct chases will be utilized. Outdoor air ductwork would be routed through the corridor ceiling space and supplied into the lower-level rooms with sidewall diffusers. This solution would maximize ceiling heights in the lower-level rooms.



VRF outdoor unit



DOAS

## Recommendations - Continued

### MECHANICAL SYSTEMS - CONTINUED

#### Option 1: VRF Recommendations

##### Police Station: First Floor

Replace floor-mounted heat pumps with floor-mounted VRF indoor units. Refrigerant piping would be routed in the joist space, pipe chases, and pipe enclosures. Replace the existing ducted heat pumps with ducted VRF indoor units. Existing building zoning will be reviewed during the design phase to determine where additional zoning may be required for optimal occupant comfort. Supply ductwork would be routed through the ceiling space to the ceiling diffusers. A DOAS would be used for the first floor of the police station. This DOAS would be a packaged unit mounted on the roof. The outdoor air ductwork would be routed in the first-floor ceiling space and connected to the return ductwork of each ducted VRF indoor unit. The outdoor air can be supplied directly into the space for each space containing ductless VRF units. The first-floor ceiling space can remain a plenum return.

##### Fire Station:

Replace the floor-mounted heat pumps with floor-mounted VRF indoor units for the fire station. Refrigerant piping would be routed down from the roof to the first-floor ceiling space through a pipe chase. Refrigerant piping to the first-floor VRF indoor units would be routed in the joist space, new pipe chases, and new pipe enclosures. Replace the existing ducted heat pumps on the first floor with ducted VRF indoor units. Existing building zoning will be reviewed during the design phase to determine where additional zoning may be required for optimal occupant comfort. Refrigerant piping to the second-floor VRF indoor units would be routed from the ceiling space on the floor below. A DOAS would be used for the fire station. This DOAS would be a packaged unit mounted on the roof of the fire station. The outdoor air ductwork would be routed down to the first-floor ceiling space through a new duct chase. The outdoor air can be supplied directly into the space for each space containing a floor-mounted VRF unit.



Wall-mounted VRF indoor unit



Floor-mounted VRF indoor unit

## Recommendations - Continued

### MECHANICAL SYSTEMS - CONTINUED

#### Option 2: Hot Water / Chilled Water Recommendations

Install a four-pipe hot water / chilled water system. Two high-efficiency, natural gas-fired, condensing boilers would be installed in the lower-level mechanical room for heating. Based on the preliminary assessment, a new chase would be installed to vent the boilers to the roof. Final locations for venting will be determined during the design phase. Based on feedback from the Village, the indoor generator may be relocated to the exterior. If the generator is relocated, the generator room will be utilized as a mechanical room. Install a split air-cooled chiller with a remote condenser for cooling. The chiller would be installed in the lower-level with the remote condenser on the roof. The compressors for a split air-cooled chiller are contained within the indoor unit. This reduces the radiated noise generated from the outdoor equipment. The entire building can be served by one central hot water / chilled water system. In a four-pipe hydronic system, the hot water and chilled water have separate piping systems which allows simultaneous cooling and heating operation throughout the year.

#### Police Station: Lower-Level

The lower level has a very low structure. Remove above ceiling heat pumps and replace with wall-mounted fan-coil units to provide heating and cooling to the lower level. Remove existing roof-mounted ERV and replace with a roof-mounted DOAS to provide ventilation to the lower level. Existing outdoor air and exhaust air duct chases will be utilized. Outdoor air ductwork would be routed through the corridor ceiling space and supplied into the lower-level rooms with sidewall diffusers. This solution would maximize ceiling heights in the lower-level rooms.

#### Police Station: First Floor

Replace the floor-mounted heat pumps with floor-mounted fan-coil units. Hot water and chilled water piping would be routed in the joist space, new pipe chases, and new pipe enclosures. Replace the existing ducted heat pumps with ducted fan coil units. Supply ductwork would be routed through the ceiling space to the ceiling diffusers. Existing building zoning will be reviewed during the design phase to determine where additional zoning may be required for optimal occupant comfort. A DOAS would be used for the first floor of the police station. The DOAS would be a packaged unit mounted on the roof. The outdoor air ductwork would be routed in the first-floor ceiling space and connected to the return ductwork of each ducted fan coil unit. It is recommended that the outdoor air be supplied directly into the space for each space containing a floor-mounted fan-coil unit. The first-floor ceiling space can remain a plenum return.



Floor-mounted fan-coil unit



High-efficiency boilers

## Recommendations - Continued

### MECHANICAL SYSTEMS - CONTINUED

#### Fire Station:

Replace the floor-mounted heat pumps with floor-mounted fan-coil units. Hot water and chilled water piping would be routed from the police station through the apparatus bay. Hot water and chilled water piping to the second-floor fan-coil units would be routed up from the first-floor ceiling space. Hot water and chilled water piping to the first-floor fan-coil units would be routed in the joist space, new pipe chases, and new pipe enclosures. It is recommended that the existing ducted heat pumps on the first floor be replaced with ducted fan-coil units. Existing building zoning will be reviewed during the design phase to determine where additional zoning may be required for optimal occupant comfort. A DOAS is recommended for the fire station. This DOAS would be a packaged unit mounted on the roof of the fire station. The outdoor air ductwork will be routed down to the first-floor ceiling space through a new duct chase. The outdoor air will be supplied directly into the space for each space containing a floor-mounted fan-coil unit.

#### Sallyport:

The sallyport heating and ventilation system will be replaced with similar equipment. Due to the elevation of the existing structure, infrared radiant heaters would not be feasible for this space. New gas-fired unit heaters will be installed. If option 2 is selected, these unit's can be converted to hot water unit heater in lieu of gas-fired unit heaters. The existing exhaust fan will be replaced with similar equipment, and a hazardous gas detection system will be installed to monitor the Sallyport carbon monoxide and nitrous dioxide levels. The hazardous gas detection system will be interlocked with the exhaust fan. The manual override switch would remain for summer ventilation.

#### Apparatus Bay:

The gas-fired unit heaters appear to be in good condition and will remain. If option 2 is selected, these units can be converted to hot water unit heaters if desired. Although the structure of the apparatus bay is taller than the sallyport, installing infrared radiant heaters would not be feasible for this space. Infrared heaters require a large clearance below them due to the amount of heat they produce. With the vehicles parked in the apparatus bay, the required clearances would not be met. If the infrared heaters were installed between the vehicle lanes, any combustible materials would have to be relocated to meet the required clearances. The exhaust fans serving the Apparatus Bay will be replaced with similar equipment and a hazardous gas detection system will be installed to monitor the Apparatus Bay carbon monoxide and nitrogen dioxide levels. The hazardous gas detection system will be interlocked with the exhaust fans. The manual override switch would remain for summer ventilation.

#### Fire Station Second Floor Dormitory:

The existing roof top unit will remain. VAV diffusers will be installed for each bunk room to provide additional space temperature control. VAV diffusers utilize a temperature-sensitive wax to adjust the airflow through the diffuser in response to space temperature.

## Recommendations - Continued

### MECHANICAL SYSTEMS - CONTINUED

#### Shooting Range:

The shooting range heating-only makeup air and exhaust fan will be replaced. The unit was manufactured in 2007 and is near the end of its median service life of 15-20 years. Shooting ranges have very specific safety requirements for ventilation to minimize any exposure associated with lead ammunition and other health hazards associated with a shooting range. The shooting range ventilation system should be tested and balanced at the early stages of design. A specialized testing and balancing company familiar with shooting ranges should perform functional testing of the shooting range controls and ventilation system. This step is key to ensuring the existing supply and exhaust infrastructure inside the range is adequate for the range prior to replacing any equipment. The existing supply air perforated wall may need to be replaced with radial diffusers based on the results of preliminary testing.

The shooting range ventilation system will be replaced with a packaged roof top unit (RTU). Since the shooting range requires 100% outdoor air, energy recovery will be incorporated into the design of the new unit. The RTU will pre-treat the outside air and reduce the amount of mechanical heating / cooling required. New HEPA filters will be installed on the roof similar to the current system, however, the exhaust fan will be incorporated into the roof top unit. The shooting range controls will be replaced with new direct digital controls. The new controls will incorporate space temperature control for both occupied and unoccupied modes. The new unit will be a variable air volume unit to allow for reduced airflow when the range is not in use.

The shooting range ventilation system is independent of the rest of the building's HVAC system. Kluber listed the preliminary opinion of cost for this work as an alternate. The Village may wish to bid this out as a separate project.

#### Building Automation System:

A central direct-digital control (DDC) building automation system will be installed. A building automation system will be utilized to control and monitor the HVAC systems. The system will be a non-proprietary, web-based central control system such as a Johnson Controls Facility Explorer Tridium system

## Recommendations - Continued

### MECHANICAL SYSTEMS - CONTINUED

#### Miscellaneous Notes:

A few additional HVAC options were explored. Further discussions on these options would be required with the client agency on viability:

- Replace equipment in kind. This option would replace heat pumps in kind. This option is not recommended as the existing geothermal field is leaking water and the location of the existing geothermal field may be up for redevelopment. In addition, the current system has experienced multiple compressor failures and difficulty in procuring replacement parts.
- Packaged air-cooled chiller in lieu of split air-cooled chiller: The split-system air-cooled chiller may be substituted with a packaged air-cooled chiller. All components of a packaged air-cooled chiller are contained within the outdoor unit. This option is not recommended as the compressors may become a nuisance for the neighbors. With this option, glycol would have to be introduced into the chilled water system to prevent freezing of the outdoor chiller.
- Two-pipe hydronic system in lieu of 4-pipe system: Chilled water and hot water piping can share the same distribution mains, thus requiring a manual change over in the spring and fall. This is similar to the HVAC system the Police Department and Fire Station had prior to the geothermal system. This system is not recommended as the entire building would have to be in cooling mode or heating mode. Space comfort during the shoulder seasons would be difficult to maintain.
- Air conditioning of the apparatus bay and / or the sallyport: Air conditioning the vehicle storage spaces is not recommended due to the high energy cost of conditioning a garage space. These spaces have large overhead doors which frequently open and close. When these doors open, IECC requires that equipment be turned off / reset temperature.
- Packaged roof top units for fire station. Kluber investigated the viability of adding packaged roof top units to condition the second floor of the fire station. Kluber noted the elevation of the bottom of the joists to be 8'-6" and ceiling heights of 8'-0". Due to the low elevation of the structure and limited space for ductwork, this option would not be feasible.

#### Project Phasing:

The public safety center is a critical facility which operates 24/7. Due to this, the project must be installed in phases. Close coordination with the client agency will be required and exact sequencing of phases will be determined during the design phase of the project. Project phasing may be different depending on which option is chosen. Areas of the building will be required to be temporarily vacated during construction. Temporary heating and cooling of occupied spaces will be required during construction when the central heating and cooling system is shut down.

## Recommendations - Continued

### Structural Existing Documentation Review

Our office is in receipt of existing building construction documents prepared by Pereira & Associates dated May 20, 1966. In review of the structural information, we note the following:

Existing structure is comprised of three main buildings. The plan West building, currently the police station, has a footprint of approximately 8,500 square feet. This portion of the building is a single story structure with partial basement. The foundations are conventional cast-in-place (C.I.P.) concrete stem walls and spread footings. The grade level first floor is constructed with a mix of 6"-8" precast hollow core slabs and reinforced concrete beams. Reinforcement masonry construction has been utilized from the first level up to the roof structure which was to be constructed using 8" precast hollow core planks. In review of the existing documents and the listed design superimposed loadings for the roof structure for this portion of the building, it appears the roof framing was likely designed for a second floor addition. The plan south stairwell on the plans indicates a "future" stairwell which would reinforce this assumption.

The centrally located building on the plan is a single story masonry construction volume space approximately 5,200 square feet. This portion of building does not have a basement and currently acts as the garage space for the fire station. The foundations and bearing walls for this area are the same as what was described previously for the eastern police station apart from the long-span roof construction which was to utilize reinforced precast single "T" roof framing. The superimposed loading listed for this roof area indicates it was strictly designed for roof loading applications with no added capacity for use/occupancy change. One area location, plan west of this roof, shows a CIP housekeeping pad for support of large rooftop equipment.

The third building just east of the garage has an approximate footprint of 3,600 square feet and is constructed similar to the police station. This building has a full basement, first level and second floor. All levels were to be framed with precast planking.

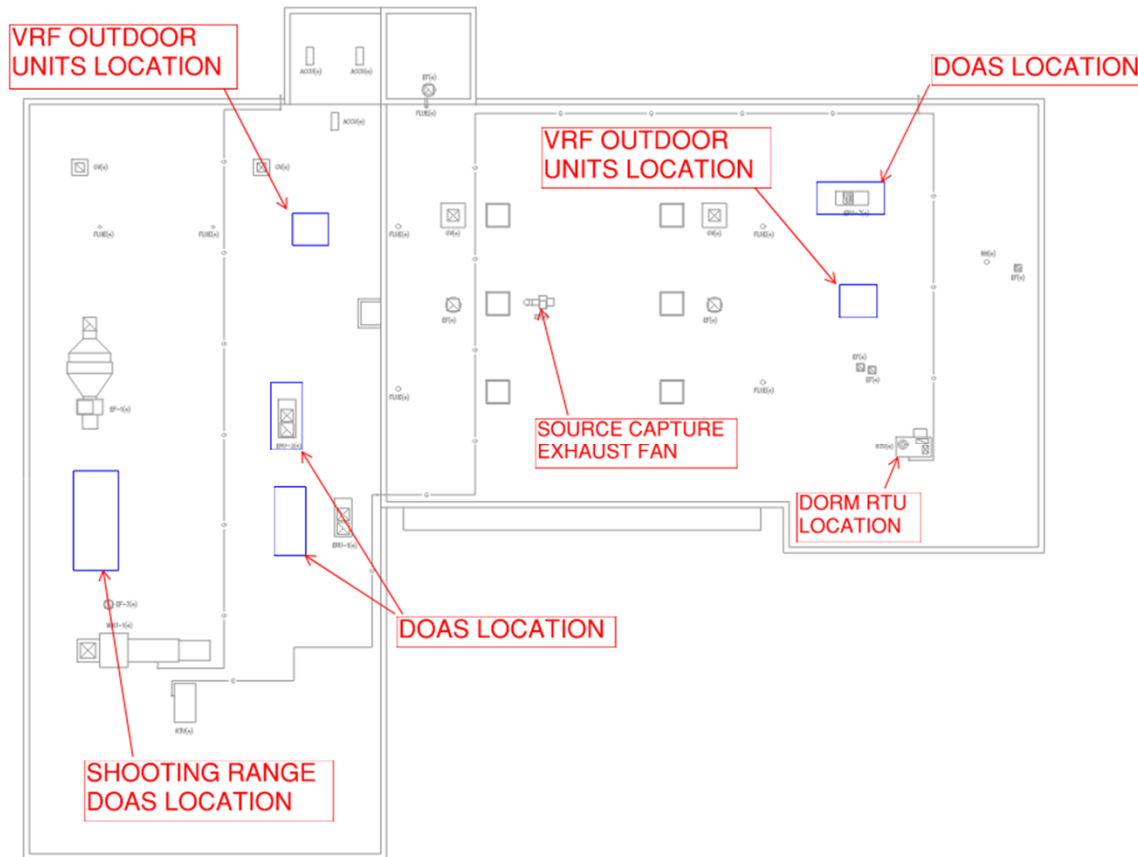
### Structural As-built Review

After completion of the site walkthrough, evidence of some value engineering is believed to have occurred during construction. The grade level floor framing for each building noted previously were confirmed in utilizing precast hollow core planks and slab-on-grade construction. However, conventional steel open web bar joist framing has been implemented for all roof framed areas and elevated floors. It is unclear whether this was completed to reduce either weight, costs or both.

### Structural - Recommendations

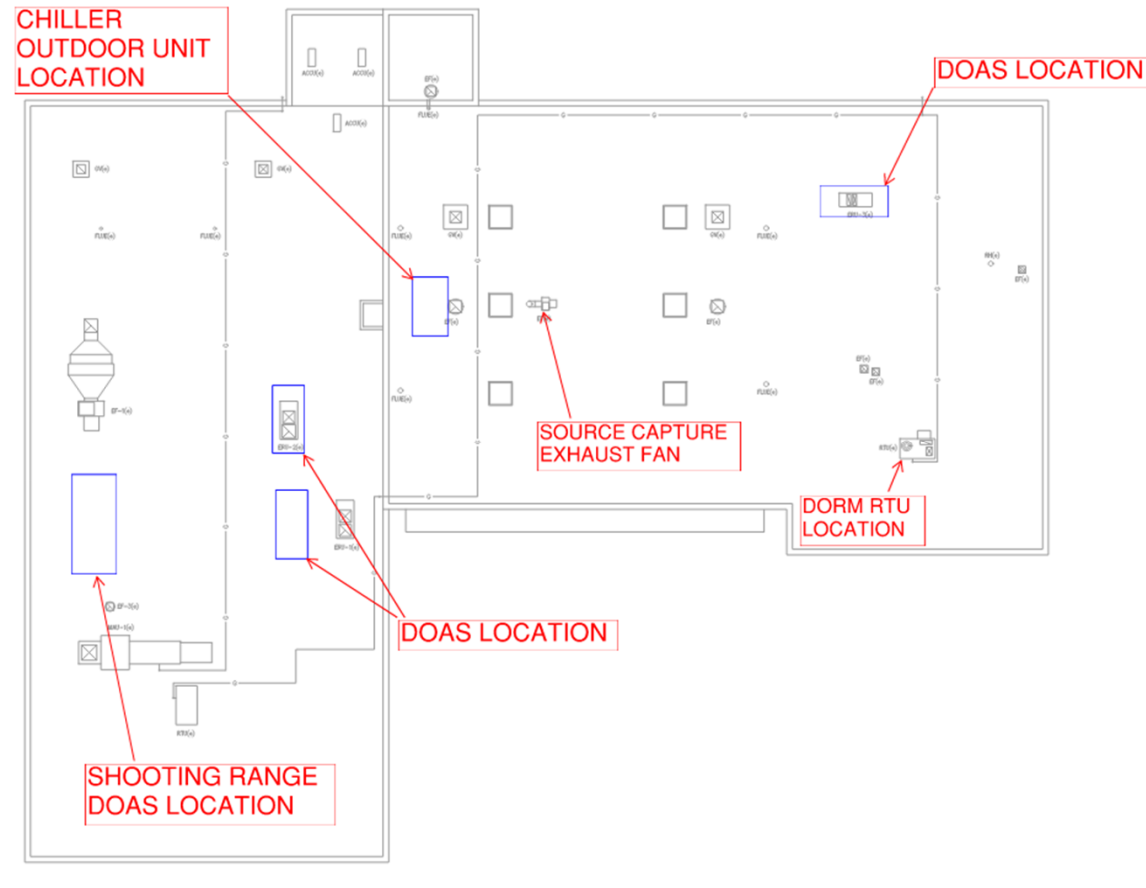
Based on the framing differences between the existing documents and field observations, we recommend care be taken when locating any new rooftop equipment. Due to unknown joist framing depths and spacings, the most economical solution for any roof supported equipment should take an effort to removal and replace equipment one-for-one. With an effort to keep new/replacement equipment in the same location, footprint and weight as existing equipment will ultimately reduce the structural cost impact to the existing framing. Should new equipment be located at a new roof location where no prior equipment is present, we anticipate that reinforcements would be required to the existing bar joists to add total load carrying capacity. This typically requires site welding additional steel to the existing joist bearing seats to provide added shear capacity and miscellaneous bars and plates along the chord and web members to increase bending capacities and to control deflection. Joist reinforcements also carry costs for temporary shoring of the modified bar joist since typically we would not recommend completing these types of reinforcement repairs on a "loaded" member. Shoring would need to remain in place until all reinforcements are completed.

## Recommendations - Continued



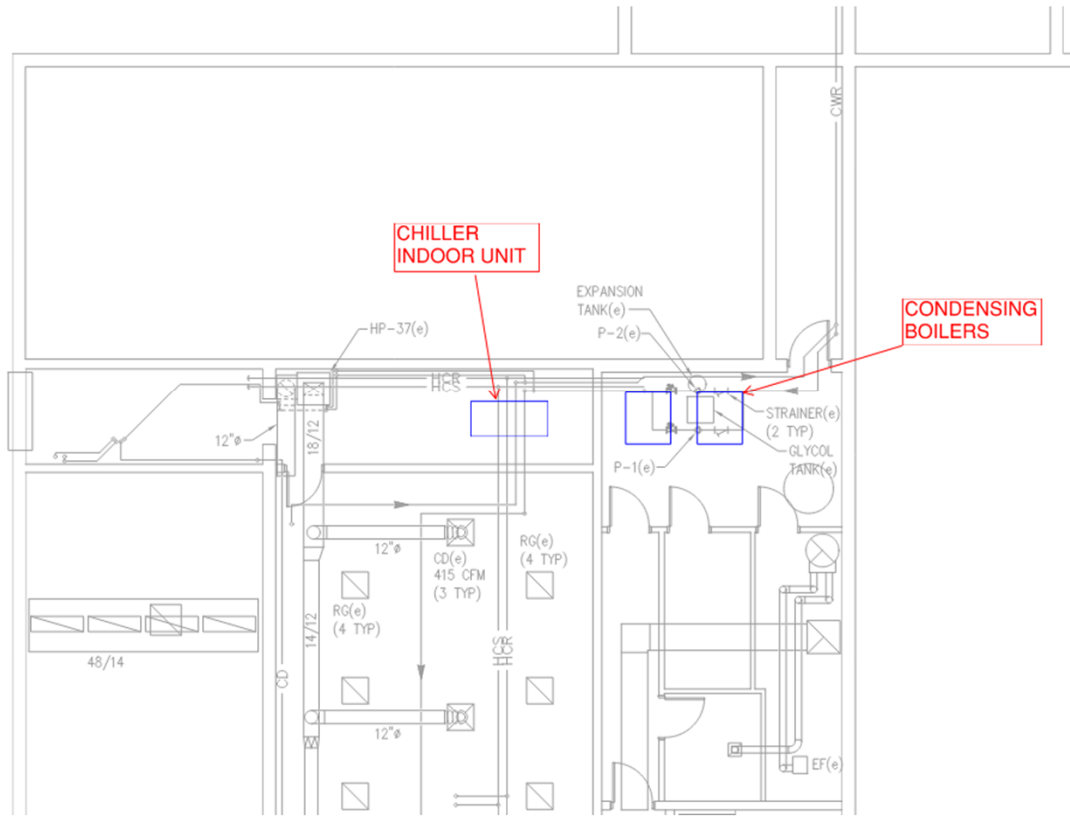
Roof Equipment – Option 1

## Recommendations - Continued

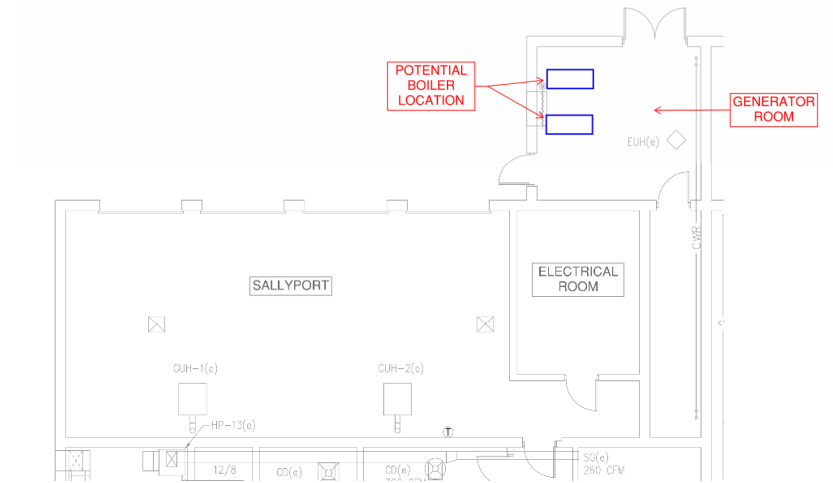


Roof Equipment – Option 2

## Recommendations - Continued



**Lower-level Equipment Option 2**



**First Floor Equipment Option 2**

# Preliminary Cost Estimate

Preliminary Estimate of Probable Construction Costs.



## Preliminary Estimate: Public Safety Campus - Option 1

LINE	COST ITEM	COST
01	Building Remodel Construction Raw Cost	\$1,063,943
02	Building Design Contingency (10.00%)	\$106,394
03	<b>SUBTOTAL BUILDING CONSTRUCTION COST</b>	<b>\$1,170,337</b>
04	General Contractor OH & P (15.00%)	\$175,551
05	General Contractor Bond & Insurance (2.00%)	\$26,918
06	<b>TOTAL BUILDING CONSTRUCTION COSTS</b>	<b>\$1,372,806</b>
07	Building Construction Contingency	\$100,000
08	Estimated Permit Fees	\$0
09	Abatement (Not Included)	N/A
10	A/E Fees (TBD)	TBD
11	<b>TOTAL SOFT COSTS</b>	<b>\$100,000</b>
12	<b>TOTAL PROJECT COST</b>	<b>\$1,472,806</b>
	Alternates: (including OH&P, Bond & Insurance)	
13	Bldg Alternate No. 1 - Apparatus Bay / Sallyport	\$45,161
14	Bldg Alternate No. 2 - Shooting Range	\$630,356
15	<b>TOTAL PROJECT COST WITH ALTERNATES</b>	<b>\$2,148,323</b>

Notes:

- 1) Cost does not include hazardous material abatement.
- 2) A/E fees will include commissioning costs and testing and balancing for shooting range.

## Preliminary Estimate: Public Safety Campus - Option 2

LINE	COST ITEM	COST
01	Building Remodel Construction Raw Cost	\$1,642,667
02	Building Design Contingency (10.00%)	\$164,267
03	<b>SUBTOTAL BUILDING CONSTRUCTION COST</b>	<b>\$1,806,934</b>
04	General Contractor OH & P (15.00%)	\$271,040
05	General Contractor Bond & Insurance (2.00%)	\$41,559
06	<b>TOTAL BUILDING CONSTRUCTION COSTS</b>	<b>\$2,119,533</b>
07	Building Construction Contingency	\$100,000
08	Estimated Permit Fees	\$0
09	Abatement (Not Included)	N/A
10	A/E Fees (TBD)	TBD
11	<b>TOTAL SOFT COSTS</b>	<b>\$100,000</b>
12	<b>TOTAL PROJECT COST</b>	<b>\$2,219,533</b>
	<b>Alternates: (including OH&amp;P, Bond &amp; Insurance)</b>	
13	Bldg Alternate No. 1 - Apparatus Bay / Sally Port	\$45,161
14	Bldg Alternate No. 2 - Shooting Range	\$630,356
15	<b>TOTAL PROJECT COST WITH ALTERNATES</b>	<b>\$2,895,050</b>

Notes:

- 1) Cost does not include hazardous material abatement.
- 2) A/E fees will include commissioning costs and testing and balancing for shooting range.

**TIMING**

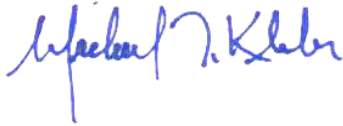
All services contemplated within this proposal shall be completed within 18 months for Phase 1 after the acceptance date. Services performed after closure of that window will be billed hourly in accordance with the rates set forth above. This proposal is valid for a period of up to 45 days from the date noted on this proposal.

**FINAL NOTE**

If this proposal satisfactorily sets forth your understanding of our agreement, we would appreciate your authorization to proceed with this Work. We are available to discuss any aspect of this proposal with you at your convenience.

Kluber, Inc. appreciates the interest expressed in our firm and we look forward to serving your needs in the future.

Sincerely,



\_\_\_\_\_  
Michael T. Kluber, P.E.  
President  
Kluber, Inc.

\_\_\_\_\_  
Accepted (Signature) Date

\_\_\_\_\_  
By (printed name and title)

Confidentiality Notice: The contents of this proposal are confidential and may not be distributed to persons other than the Owner.

