



Office of Physical Plant  
Physical Plant Building  
University Park, PA 16802-1118

Date: August 22, 2018

Subject: **Request for Proposals – Architect/ Engineering Team Selection**  
**New Allied Health Building**  
Penn State Mont Alto

To: Ayers Saint Gross  
Bostwick Design Partnership  
CannonDesign  
Gensler  
Hord Coplan Macht  
Kimmel Bogrette Architecture & Site  
Noelker and Hull Associates, Inc.  
PAGE + Spillman Farmer Architects  
Perkins Eastman  
SMP Architects  
VEBH Architects + Kahler Slater

## A. INTRODUCTION

Congratulations, your organization has been selected for the Long List of Architect/Engineer (AE) firms for the New Allied Health Building project located on the Penn State Mont Alto Campus. The firms listed above are invited to respond to this Request for Proposal (RFP).

The Pennsylvania State University AE Screening Committee is excited to continue the Mont Alto New Allied Health Building AE selection process. We will review Proposal responses to this Request for Proposal. Proposals are due to my office by **Noon on September 12, 2018**.

After review of the RFPs, the Screening Committee will identify a Short-list of three teams to be interviewed. The Interview notification and list of Short-Listed firms will be posted to our website by end of day on **October 3, 2018**. Interviews will take place on **October 18, 2018 at the Nittany Lion Inn, in State College, PA**. The results will be announced at the Board of Trustees meeting on **November 9th, 2018** and posted to this website.

Participation in this selection process by submitting firms shall be at no cost or obligation to The Pennsylvania State University (PSU). The University reserves the right to waive any informality in any or all Proposals, and to reject or accept any Proposal or portion thereof. Additionally, the University may also hold all proposals for up to 45 days and to reject all proposals or to award on the basis of technical merit and the best interests of the University.

## B. PROJECT OVERVIEW & PROGRAM OF REQUIREMENTS

Originally constructed in 1976, the Science / Technology Laboratory building provides the Mont Alto campus with program space for their current Nursing and Physical Therapy (PT) curriculums along

with other science and chemistry labs and general purpose classrooms. The current nursing program is a 4-year degree program and anticipates modest growth over the next 10 years. However, the PT program is poised to expand into a 4-year program and will require additional lab, instructional and administrative space to do so.

The Occupational Therapy (OT) program currently resides in the Residence B building; a 1946 2-story arts and crafts style residential structure. While Residence B building provides some real-life training opportunities for OT students, it does not offer adequate space for the all OT instructional and administrative functions. Similar to PT, OT also plans to expand to a 4-year degree offering. Considering the existing and future space needs for the OT program, the University desires to locate the OT program in close proximity to the nursing and expanding PT programs.

The goals for this project include the following:

- Provide a facility that fully addresses the current space limitations for the growing Allied Health programs.
- Utilize portions of the existing Science/Technology Building to accommodate portions of the program needs. Renovations of these areas would provide fire sprinkler system, asbestos abatement and any necessary infrastructure improvements.
- Address the majority of space needs through a building addition to the Science / Technology Building.
- Create an expansion that will enhance the existing campus aesthetic and character.
- Consider a building connection and new entrance to the adjacent General Studies Building.
- Determine the optimal location for the OT program. The University's preference is to collocate all Allied Health programs together in the new building. However, remaining in an expanded Residence B is still a consideration.

The convergence of these three growing programs necessitates the creation of an Allied Health Building. The University, with the assistance of the firm Hoffman Leakey Architects, has conducted a building program and expansion study. Excerpts from this study dated February 2017 are attached for your information.

As stated in the Letter of Interest, this project is being envisioned as an approximate 21,000 square feet addition to the existing Science / Technology Building (labeled 'Science Building' on attached exhibit). As shown on the attached exhibit, the project is also considering a physical connection to the existing General Studies building including a new entrance to access perimeter campus parking for faculty and staff. Modest renovations to the existing Science and Technology Building include program administrative offices and fire sprinkler system. If determined to remain in Residence B, a 3,000 square feet addition could be added to the existing Occupational Therapy House (labeled as 'Student Service Annex' on campus maps) rather than an addition to the Science /Technology Building.

In total, the anticipated program will provide a Nursing/Clinical Simulation Lab, classrooms, class labs, student lounge/study areas, lab support and storage spaces, student locker rooms, laundry area, and an ambulance port. Review and verification of the program will be the initial project phase for the selected project team. After the program validation phases, the project will follow the standard design phases: SD, DD, CD and CA Phases.

The total project budget, including soft costs and FF&E is \$13,000,000. This is broken down into \$9.5M for construction, \$2.2M in soft costs and \$1.3M in contingency.

The successful A/E firm will be expected to work in conjunction with a Construction Manager selected by the University throughout design and construction phases.

We anticipate the A/E agreement award following the team selection at the November 2018 Board of Trustee meeting. We anticipate final plan approval by May 2020 with construction to start in June 2020. The expected occupancy date is July 2021.

### C. RFP ATTACHMENTS AND REFERENCED STANDARDS

Enclosed you will find the following supplemental documents:

- **PSU Mont Alto Allied Health Program and Expansion Study, dated February 2018 (Excerpt)**
- **Form of Agreement.** Included is the link to our Form of Agreement 1-P:  
<https://wikispaces.psu.edu/display/OPPDCS/Division+00+-+Procurement+and+Contracting+Requirements>.  
Please review this agreement to ensure that your firm accepts all terms and conditions as written. In submitting a proposal for this project, you acknowledge that you concur, without exception, with all terms, conditions and provisions of Form of Agreement 1-P.
- **Design Phase Deliverables.** Reference this document under the heading *00 51 00 MISCELLANEOUS FORMS* at the following link:  
<https://wikispaces.psu.edu/display/OPPDCS/Division+00+-+Procurement+and+Contracting+Requirements>
- **Office of the Physical Plan (OPP) Standards.** The web sites [www.opp.psu.edu](http://www.opp.psu.edu) and <https://wikispaces.psu.edu/display/OPPDCS/Design+and+Construction+Standards> provide information regarding specific design submission requirements and standards, of the University. Please review to ensure that your team is able to deliver a compliant building.
- **OPP High Performance Standards.** The University has a commitment to environmental stewardship and requires the maximum possible use of sustainable and energy-efficient designs and specifications, for architectural, site, utility, structural, mechanical, electrical, and plumbing work. Refer to the following link for the University's high performance standards that exceed building code minimum requirements:  
<https://wikispaces.psu.edu/display/OPPDCS/01+80+00+PERFORMANCE+REQUIREMENTS>

Apart of this is PSU's High-Performance Building Design Standards: Building projects shall comply with ASHRAE Standard 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings, 2010 version AND as superseded by more stringent requirements of ASHRAE Standard 189.1 Standard for the Design of High-Performance Green Buildings, 2011 version.

The standard defines a minimum requirement of LEED Certified for this project.

#### D. SELECTION AND IMPLEMENTATION MILESTONES

• RFP Issued to Long-Listed Teams:	August 22, 2018
• <b>Submission of A/E Proposals Due:</b>	<b>Noon EST, September 12, 2018</b>
• Post Short-List results and Interview notice:	October 3, 2018
• <b>A/E Team Interviews:</b>	<b>October 18, 2018 (Nittany Lion Inn)</b>
• Board of Trustees Selection of Team + Post Results:	November 9, 2018
• <b>Contract Award / Letter of Intent:</b>	<b>November 21, 2018</b>
• Construction start date:	June, 2020
• <b>Project Occupancy:</b>	<b>July, 2021</b>

#### E. PRE-PROPOSAL SUBMISSION CONTACT

The Office of Physical Plant encourages you to visit the site and discuss the project with representatives of the user group in order to understand all goals and the major issues driving this project. Contact Doug Wenger, Project Manager at [JDW132@psu.edu](mailto:JDW132@psu.edu) or 814-863-9622 with any project questions. Contact myself with any Campus Planning and Design questions.

Site tours will occur for Long-Listed teams will be on August 28<sup>th</sup> from 10am-11:30am or 12:30pm-2pm. Contact Brad Kendall at (717) 552-5825 or [bgk3@psu.edu](mailto:bgk3@psu.edu) at Penn State Mont Alto to schedule your site visit.

#### F. PROPOSAL REQUIREMENTS

**Deliver Twelve (12) hard copies of your proposal and one (1) digital copy on a thumb drive to:**

Greg Kufner, AIA, NCARB  
University Architect  
The Pennsylvania State University  
206 Physical Plant Building, University Park, PA 16802

**Hard copies of the Proposals are due September 12, 2018 at Noon, Eastern Standard Time. A PDF version of your proposal should be included on a thumb drive within your submission. Proposals received after this date and time may be automatically rejected. Proposals shall be provided in an 8.5" x 11" format. Limit submission to thirty (30) single-sided pages maximum (15 double-sided). Double-sided printing is strongly encouraged.**

**A cover letter shall be provided from the proposed leader(s) of the Candidate Team submitting.** The cover letter should be one page maximum. The cover letter should include the following:

- A. This letter should establish the contact information (address, phone, and e-mail) for your team's main point of contact
- B. Primary office location of the submitting candidate team
- C. A concise summary as to why your team is best suited for this project
- D. Statement of certification that all information provided in your submittal is accurate

**Collate and bind proposals according to the following four (4) Sections:**

Proposals shall follow the below format, in the order stated to ensure that all pertinent information necessary for evaluation is included and easily comparable by Selection Committee. The cover letter, table of contents, and divider pages will not count towards the RFP page limitation. OPP encourages you to be as brief as possible without sacrificing accuracy and completeness.

**\* Note 1: As applicable throughout proposal, provide professional credit to architectural partners (including design architect, architect of record, and academic / lab planning partners) for all projects discussed within the proposal and for all project images shown.**

**Section 1.0 –TEAM STRUCTURE**

- A. Identify prime firm and key consultant firms, size of prime firm, each firm’s role on this project, and each firm’s qualification and experience on similar projects. Identify past collaboration between prime firm and key consultants, including number/ value of projects. Describe overall team commitment to sustainable design, including number of completed LEED projects.
- B. Provide team organizational chart. Include prime and key consultant firms, and provide the name and role of key team members. Clearly identify which team members are designated for leadership positions on the team. Please highlight Diverse Business Enterprise Program (DBE) representation on your team.
- C. Provide role descriptions and resumes of key team members identified in the organizational chart. Include registrations/ certifications, educational background, years of experience, relevant project experience and define each key team member’s role on each project. Include at least two client references for each key team member. **If possible, please avoid using Penn State employees as references.**

**Section 2.0 – TEAM QUALIFICATIONS**

- A. Provide a summary of qualifications and expertise of the firms with specific emphasis on:
  - 1. Design Excellence, including national recognitions.
  - 2. Distinguishing factors of team differentiation.
  - 3. Experience delivering projects of a similar scope, scale, and complexity. **(See Note 1)**
  - 4. Expertise in the planning, design, and delivery of state-of-the-art Allied Health buildings, including space types such as: Nursing/Clinical Simulation, Physical Therapy Labs, and Occupational Therapy spaces. **(See Note 1)**
- B. Identify a maximum of seven (7) example projects (or studies) within the last ten (10) years, which BEST exemplify qualifications and expertise listed above for the proposed team and are in similar size, scope and budget range to the proposed project. Include brief description of each project, project gross square feet, project budget, final project cost, and completion date of project. If project is a study, clearly define the scope of the study. Show illustrative

representation of the example projects, particularly those highlighting the work of your team's proposed Lead Design Architect. **(See Note 1)**

Develop a matrix that illustrates the similarities between the example projects to this project.

In matrix form, show the participation of individuals from the proposed team on the identified projects. List team member's respective role on each of the example projects.

- C. Briefly describe your proposed methodology to help address PSU's Diverse Business Enterprise Program (DBE), including outreach, and how you propose to maximize DBE firm participation within your proposed team. DBE requirements can be found in this link: <https://opp.psu.edu/planningdesignconstruction/diverse-business-enterprise-program-dbe>
- D. List errors and omissions insurance coverage limits of the lead/ prime entity of the candidate team. Provide information on errors and omissions claims in the last (7) seven years.
- E. Provide historic breakdown of project performance. Include project delivery method, history of project budgets compared to completed construction cost, history of change orders, average response time to RFIs, and any other key project profiles relevant to this project.
- F. Acknowledgment of your review and acceptance of the attached Form of Agreement 1-P, ensuring that your firm accepts all terms and conditions as written. In submitting a proposal for this project, you concur, without exception, with all terms, conditions and provisions of this Form of Agreement.

### **Section 3.0 – PROJECT APPROACH AND SCHEDULE**

- A. Describe your team's design approach, including:
  - 1. Validating project program.
  - 2. Helping to define project vision, goals and expectations and methodology for achieving goals/ expectations from concept design through construction.
  - 3. Programming, space planning and programmatic adjacencies, including the creation of blocking and staking options to respond to project aspirations, sustainability and other factors relevant to the program elements.
  - 4. Your approach to develop the interior/ exterior "look and feel", from visioning to design concepts and through execution of the project.
- B. Describe your team's overall approach to:
  - 1. Planning, managing, and executing the project. Include approach to including decision making process(es), consensus building, and tools that you will utilize.
  - 2. Innovative design.
  - 3. Use of BIM, technology, predictive modeling, and digital tools.
  - 4. Cost estimating, cost control, and quality control through the design and construction phases.
  - 5. Creating a collaborative environment between architects, academic/ lab planners, engineering consultants, and PSU stakeholders.
  - 6. Creating a collaborative design and construction process, including integration of the design team with the Construction Manager and trades.

- C. Briefly describe your approach to Penn State reviews, PSU design reviews, and jurisdictional reviews. Anticipated jurisdictional reviews include Labor & Industry and building code. Local municipal reviews and permits may be required and the professional shall be responsible for securing these permits with assistance of the University. Any fees associated with permits shall be paid for by the Professional and will be reimbursed by the University.
- D. Brief narrative approach to MEP planning/ design/ delivery of a commission-ready, energy efficient, and high performing facility.
- E. Approach to Sustainability. After reviewing PSU's High Performance Standards, describe your team's approach to driving towards PSU's sustainability goals on the project, including exceeding our standards. Highlight your experience meeting similar high performance standards. Define which individuals are leading certain sustainability efforts.

Among other applicable topics, discuss your team's approach and experience applying advanced sustainability measures, ability to apply best practice in sustainable design, applications of creative innovations to obtain the optimum performance for projects, and experience using energy models to drive design thinking.

- F. Provide statement validating the proposed project schedule and your entire team's availability to appropriately staff the anticipated workload.

Create a graphic project schedule showing phase durations, owner engagement and review, critical milestone and other critical schedule elements. This can be printed on an 11x17 fold-out and only count as a single page.

#### **Section 4.0 – PROJECT-SPECIFIC KEY DRIVERS AND IDEAS**

- A. Project Understanding. Briefly demonstrate your understanding of the project. Provide any observations of the project program or other provided information.

To indicate your understanding of the uniqueness of this project, describe key project drivers, critical design elements, and potential constructability considerations your team has identified as a priority for this specific project. Discuss how you addressed similar issues on other projects.

- B. Delivering a highly functional and efficient building is critical to project success. We are seeking teams that can drive our decision making, including determining adjacencies/space types/space functionality and access/security/circulation between uses in order to meet all programmatic needs. Describe programming, planning, benchmarking tools and methodologies that your team will use to meet these objectives.

Related to the above, provide specific principles/ideas or project anecdotes for the following:

1. Buildings that support Allied Health and related programs.
2. Planning/Design/Execution of space types such as: Nursing/Clinical Simulation, Physical Therapy Labs, Occupational Therapy spaces, ambulance port, flat/tiered classrooms,

student lounge/collaboration areas, and other space types and support spaces such as those identified in the program.

3. Approach to facilitating design and planning ideas to achieve a high level of user collaboration and creating collaboration spaces within dense/ efficient buildings.
- C. Your firm's vision of what, beyond purely functional issues, constitutes the essence of this type of facility. Provide additional evidence of your firm's ability to translate design intentions into a meaningful project.

Discuss example project(s), relevant to our project, that best indicates the appropriate resolution of an understanding of the uniqueness of a project, design intentions, and how those design intentions translated into a meaningful and synthesized final solution.

- D. Provide any initial design ideas, thoughts or considerations regarding the project. We are not seeking design solutions, but rather your design thinking and/or point-of-view. Considerations should be related to the potential location of this addition, including from the following standpoints:
1. Programmatic adjacencies and overall functionality for the new building/program.
  2. Programmatic adjacencies and overall functionality and as it relates to the Science / Technology Building and existing General Studies building. Stated another way: discuss advantages and/or disadvantages of connecting the new addition to one or both existing buildings.
  3. Aesthetics and architectural style and character
  4. Campus planning, connectivity and placemaking perspective

Thank you for your anticipated participation in this RFP process. The Pennsylvania State University looks forward to reviewing your responsive proposal for this important project.

Respectfully,

Greg Kufner, AIA, NCARB



University Architect  
The Pennsylvania State University  
206 Physical Plant Building, University Park, PA 16802  
Phone: 814-865-4402 | Email: [gak21@psu.edu](mailto:gak21@psu.edu)

CC: Screening Committee





**PennState**  
Mont Alto



Feasibility Report

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## PSU Mont Alto Allied Health Program and Expansion Study

Penn State Mont Alto  
Mont Alto, PA

**EXCERPT**



Executive Summary Letter

Campus Map

Architectural Existing Conditions

~~Existing Block Plans~~

Program Information

MEP Existing Conditions

Architectural Analysis

~~Initial Options~~

~~Final Option 1~~

Final Option 2

MEP Analysis

Final Options 1 & 2

~~Estimates~~

~~Appendix~~

~~Preliminary Campus Master Plan~~

~~Previous Allied Health Feasibility Study~~

~~Existing Site Utility Plan~~

February 2018

Mr. Douglas Wenger, RLA, LEED AP, DBIA  
Project Manager  
Commonwealth Services  
Office of the Physical Plant  
The Pennsylvania State University  
325 The 328 Building  
University Park, PA 16802  
jdw132@psu.edu

Re: Allied Health Program  
Expansion Study, Penn State Mont Alto

Mr. Wenger,

In the Fall of 2017 Hoffman Leakey Architects was contracted by Penn State University to undertake a feasibility study of the current Allied Health Program facilities at Penn State Mont Alto. The purpose of this study is to examine the current facilities used by the Nursing, Physical Therapy, and Occupational Therapy programs and to examine options for future expansion of the facilities. Oversight for the study has been provided by a committee of the following people:

J. Douglas Wenger – Project Manager PSU Commonwealth Services  
Michael Doncheski – PSU Mont Alto Academics  
Ann Miller – PSU Mont Alto Finance and Business  
Bradley Kendall – PSU Mont Alto Facilities Supervisor  
Renee Borromeo – Mont Alto Physical Therapy Program  
Carranda Barkdoll – Mont Alto Nursing Program  
Angela Hissong – Occupational Therapy Program  
J. Michael Leakey, AIA – Hoffman Leakey Architects -Design Lead  
Robert Sells, PE – Barton Associates – MEP Engineering  
Andrew Shrenk – PJ Dick Corporation – Estimating

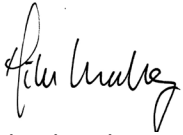
The methodology used for this study was as follows:

1. HLA conducted a detailed survey of all existing program space and documented the current use of each space. This included meetings with department heads and faculty to understand how each department utilizes their current space and what the current facilities lacked for each program.
2. Program Matrix: Based on the information garnered from the facility survey and faculty interviews HLA developed a current and projected square foot matrix for each department and the Allied Health Program as a whole.
3. Site and Building Options: The study committee reviewed several campus site locations for expansion of the Allied Health program facility and ultimately decided to study the possibility of constructing an addition to the Science/ Technology (ST) Building that could also act as connector to the General Studies (GS) Building. The rationale for this is:
  - a. The Nursing and Physical Therapy programs are currently located on the ground floor of the ST Building.
  - b. The site between the ST Building and the GS Building is an underutilized and difficult to maintain outdoor space.
  - c. This site is large enough to accommodate the projected SF space requirements of the Allied Health Program.
  - d. Could accommodate a west building entrance for both the GS Building and the ST Building.

4. HLA developed two building addition options for the site: Preliminary Option 1 and Preliminary Option 2. The Study Committee reviewed both preliminary options and directed HLA to further develop option 1 (Final Option 1). In addition, another option (Final Option 2) was developed. Final Option 2 is a smaller addition to the GS Building 18,000 SF and a 3000 SF addition to Residence B for Occupational Therapy.
5. Conceptual cost estimates have been developed for both final options.

The following pages of the study document the existing conditions of the current facilities and offer expansion options and the estimated cost for each option.

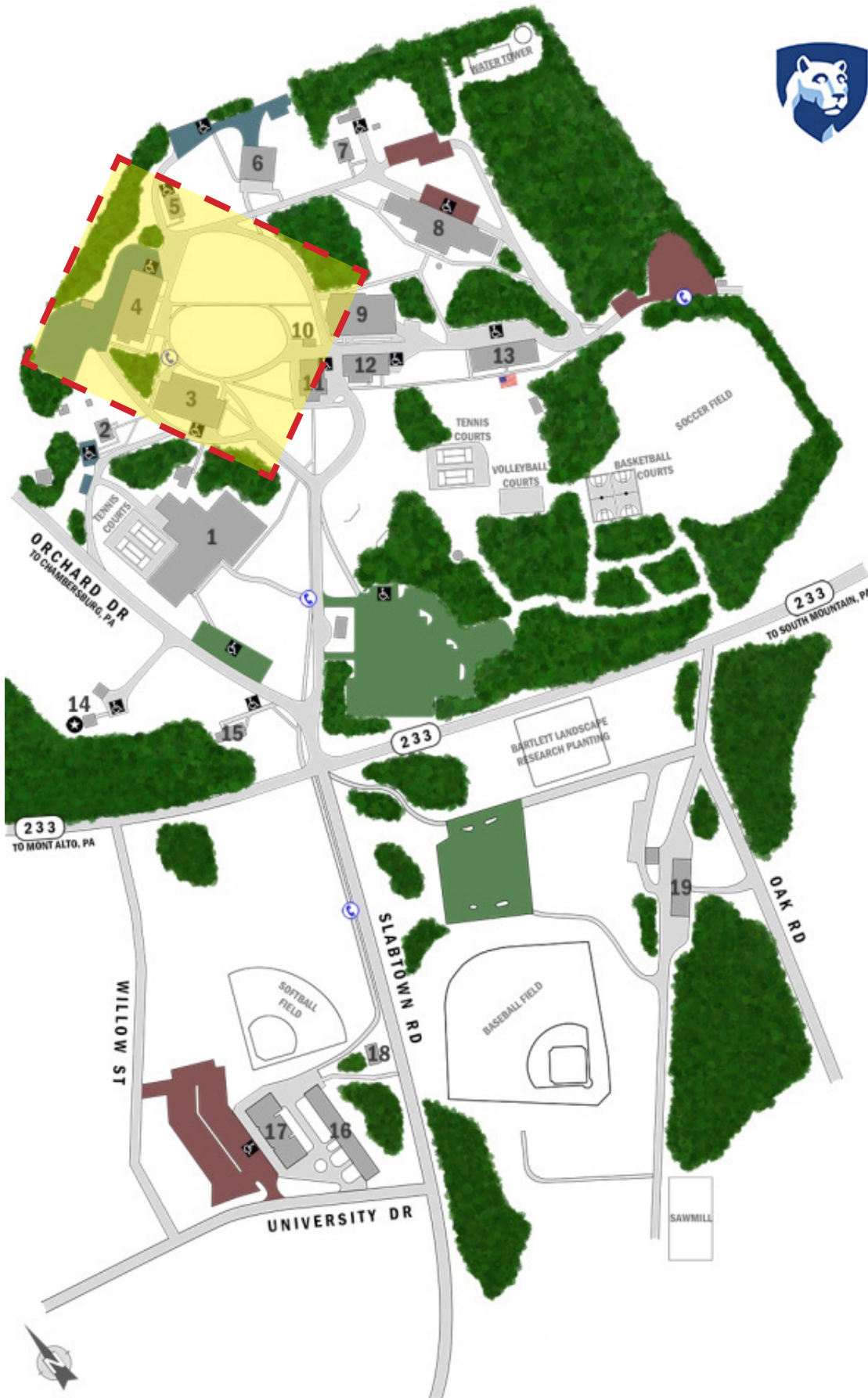
Sincerely,



J. Michael Leakey, AIA  
Principal  
HOFFMAN LEAKEY ARCHITECTS LLC



**PennState**  
Mont Alto



## Existing Facilities



Overlooking space between Science/Technology Building from the General Studies Building

### Science/Technology Building: Nursing and Physical Therapy Programs

In the current Science/Technology Building, Nursing and Physical Therapy (PT) labs and faculty offices occupy the ground floor/basement. In terms of lab space, the PT lab is approximately 1200 square feet, which includes the beds and equipment needed for practicum as well as desks, a podium, and projector for lab-based lectures. The lecture space is about one-third of the lab, seating fifteen students. PT tables along the back wall are able to be retracted and hung when not in use. There is a white board spanning the wall farthest from the hallway. Two offices adjacent to the lab have been converted into equipment storage with shelves reaching to the ceiling on one side on the room.

The Nursing Lab is approximately 950 square feet with four hospital beds and accompanying equipment located along two adjoining walls, curtains dividing the bays. In the center of the lab there is a group of tables and chairs seating about 15 students for lectures, along with a white board, projector and projector screen. In one corner there is a desk with two computers for student use. To the right there is a storage closet and laundry. The L-shaped storage is for syringes as well as equipment used for specific exercises. Equipment is stacked on shelves reaching to the ceiling. The larger items and less frequently used medical simulation mannequins are in front of the shelving, narrowing the walkways. The laundry machines in this closet are shared with the Physical Therapy program.



Existing Nursing Lab in ST Building



The faculty offices for nursing take up a wing of the basement. The reception area is down a short corridor off of the main hallway. One of the rooms is used as a small break area but also serves as a storage/practice area, housing a stretcher with a medical simulation mannequin. There is a small table where students can wait for appointments with faculty and do some studying.

The second floor of the Science/Technology Building consists of some newly renovated lab spaces for classes outside of the Allied Health Program. There are also three large lecture-style classrooms each with a 100-person capacity.



Existing Physical Therapy Lab in ST Building



### Residence B: Occupational Therapy Program

Occupational Therapy is in a two-story house named Residence B that is 2000 square feet. Lecture space is set up in the living room with tables and chairs to seat about 18 to 20 students and a movable television and AV set. Behind the living room there is a small student lounge with a couch and chairs; a separate storage closet is to the right of the lounge. There is also a set of storage shelves in the living room.

The kitchen has a functioning oven, stove, sink, and refrigerator, as well as about one yard of counter space on each side of the sink. There is a small pantry to the left of the refrigerator. Off of the kitchen is a half bath with handicap railings next to the toilet. The back porch is a ramp with a small Zen garden against the house and a separate herb garden measuring about three square feet.



Existing Occupational Therapy Classroom and Lab in Residence B



Stairs lead to the second floor from the front of the kitchen. There are four “bedrooms.” The first is set up with therapy tables as well as a small table where students can sit and take notes. There is also a table off to the side with a tabletop printer/copier, a set of storage cubbies and a book shelf. A few wheelchairs are stored next to the therapy beds. The second room is partially divided by a set of shelves. One section is for pediatrics, made up of a play area with a shelf for board games and toys. The other side is arranged for relaxation with lounge chairs and pillows. This room also has a small closet to store equipment.

Across the hallway are the final two rooms set up as full-time faculty offices along with desks for adjunct professors. At the far end of the hallway there is also a full bathroom intentionally left non-accessible. In the shower/bathtub of this bathroom there are a few shower chairs for practicing the adaptation of a non-accessible room.



Mont Alto Allied Health Program Feasibility Study:  
Program Space

Room	Existing Square Feet	Desired Square Feet	
Dedicated Classrooms	0	4500	3 -(2-100 student, can be subdivided to 50/1-25 student)
Computer Lab	0	1500	1- 50 student
Ampitheater	0	2000	1- 75 student
Conference Rooms	0	1000	3 - 16 person
Offices	1609	2000	20
Open Office	0	500	1
Faculty Restrooms	304	400	2
Students Restrooms/Locker Rooms	0	1600	4
Student Lounge	252	600	(Part of general circulation in new)
Laundry Areas	250	400	2
Reception Area	0	300	1
Nursing Lab/Sim	945	1800	(1- includes observation areas)
Physical Therapy Lab(s)	1172	2100	(existing Nursing & PT Labs)
General Storage (Nursing/PT)	108	800	
Nursing Storage	538	600	
PT Storage	385	500	
Mail Room/Coffee	185	300	1
OTA House Overall	2000	3500	(Gross SF of OTA House- includes labs, classrooms, offices)
OTA Kitchen	115		
OTA Classroom	381		
OTA Student Lounge	96		
OTA Storage	124		
OTA Restrooms	73		
OTA Offices	309		
OTA Other Lab Space/Rooms	418		
Sub-Totals	7748	24400	
Circulation Space (10% of GSF)	450	2440	(includes seating/lounge areas)
Mechanical Space	existing	1800	
<b>Totals</b>	<b>8198</b>	<b>28640</b>	

New square foot amounts are based on meetings with program faculty and assessment of current facilities



## Nursing Program Numbers

### **Current Program Size Under 4-Year Program:**

Average **25-30** students per class year  
Total Average **170** students in program

### **Projected Size in Five Years:**

Average **30** students per class year  
Total Average of **175** students in program

### **Projected Size in Ten Years:**

Average **50** students per class year  
Total Average of **200** students in program

## Physical Therapy Program Numbers

### **Current Program Size under 2-Year Program**

Average **25** students per class year  
Total Average of **50** students in program

### **Projected Size under 4-Year Program**

Average **25** Students per class year  
Total Average of **100** students in program

## Occupational Therapy Program Numbers

### **Current Size under 2.5-year Program**

Average **23** students per class year  
Total Average of **46** students in program

### **Projected Size under 4-year Program**

Average **23** students per class year to remain the same  
Total Average of **92** students in program

## Site

Existing Conditions (Refer to Appendix Existing Site Utility Plan)

## Fire Protection

The existing S/TL and OTH do not have sprinkler fire protection coverage.

## Plumbing

Existing Conditions

### F. Science and Technology Laboratory

1. A 4 inch water service enters the building on the north side of the building and will be relocated.
2. A 6 inch sanitary main leaves the building on the west wall and will remain. A separate acid waste main leaves the building after passing through a neutralizing pit which will remain.
3. An 8 inch storm main leaves the building on the south side and will remain.
4. A 1-1/4 inch propane line enters the building on the west side. A propane tank is located across the road from the building. The propane serves the emergency generator and gas outlets in the labs and will remain for the lab gases.
5. An electric hot water generator provides hot water to the building. The hot water generator is original to the 1974 building, is far beyond its expected service life, and will be replaced.

### G. OT House

1. Water service and sanitary enters the basement on the southeast corner of the house and will be upgraded to support the proposed connected load.
2. Natural gas service enters the basement on the north side of the house and will be upgraded to support the proposed connected load.

## Heating, Ventilating & Air Conditioning (HVAC)

Existing Conditions

### A. Science and Technology Laboratory

1. The existing first floor renovation area is served by a 7-zone multi-zone air handling unit located in the mechanical room. The unit is original to the building, well beyond its expected service life, and will be replaced.
2. Heat for the building is provided by electric heating coils and terminal heating units. Many of the units are original to the building, well beyond their expected service life, and will be replaced under Option 1B.
3. Cooling for the building is provided by a centrifugal chiller located in the mechanical room and a cooling tower located on the roof. The chiller and cooling tower were installed in 2003 and the chiller was re-furbished in 2017. Although the chiller is within its expected service life, it does present a noise nuisance to adjacent spaces and is proposed to be removed under Option 1B.
4. Multiple air handling units located in a mechanical penthouse serve the 2nd and 3rd floor laboratory spaces and will remain. Some units are original to the building and others have been replaced in the past 4 years. Electric heating coils in these units will be replaced under Option 1B.

### B. OT House

1. Heat for the building is provided by a hot water boiler located in the basement. Finned-tube baseboard and cast-iron radiators provide terminal heat. The equipment appears to be beyond its expected service life and will be replaced.
2. Window units provided cooling in select rooms and will be removed.

## Electrical

### Existing Conditions

#### A. Science and Technology Laboratory

1. The existing building is served by an existing pad mounted transformer located at the south end of the building. A 2000 ampere, 480/277 volt switchboard is located in the first floor mechanical room. The equipment is in fair condition and will remain.
2. A 50KW, 120/208 volt, 3-phase, 4-wire propane-fired emergency generator is located in the first floor mechanical room. The generator and associated transfer equipment was installed in 2015 and will be replaced.
3. The existing lighting in the renovation areas is fluorescent and will be replaced.

#### B. OT House

1. The existing service to the building is 100A, 120/240V, 1-phase and is served from the adjacent Library Building electrical service and will be replaced with a dedicated service from the campus distribution.



Existing Nursing Lab in ST Building

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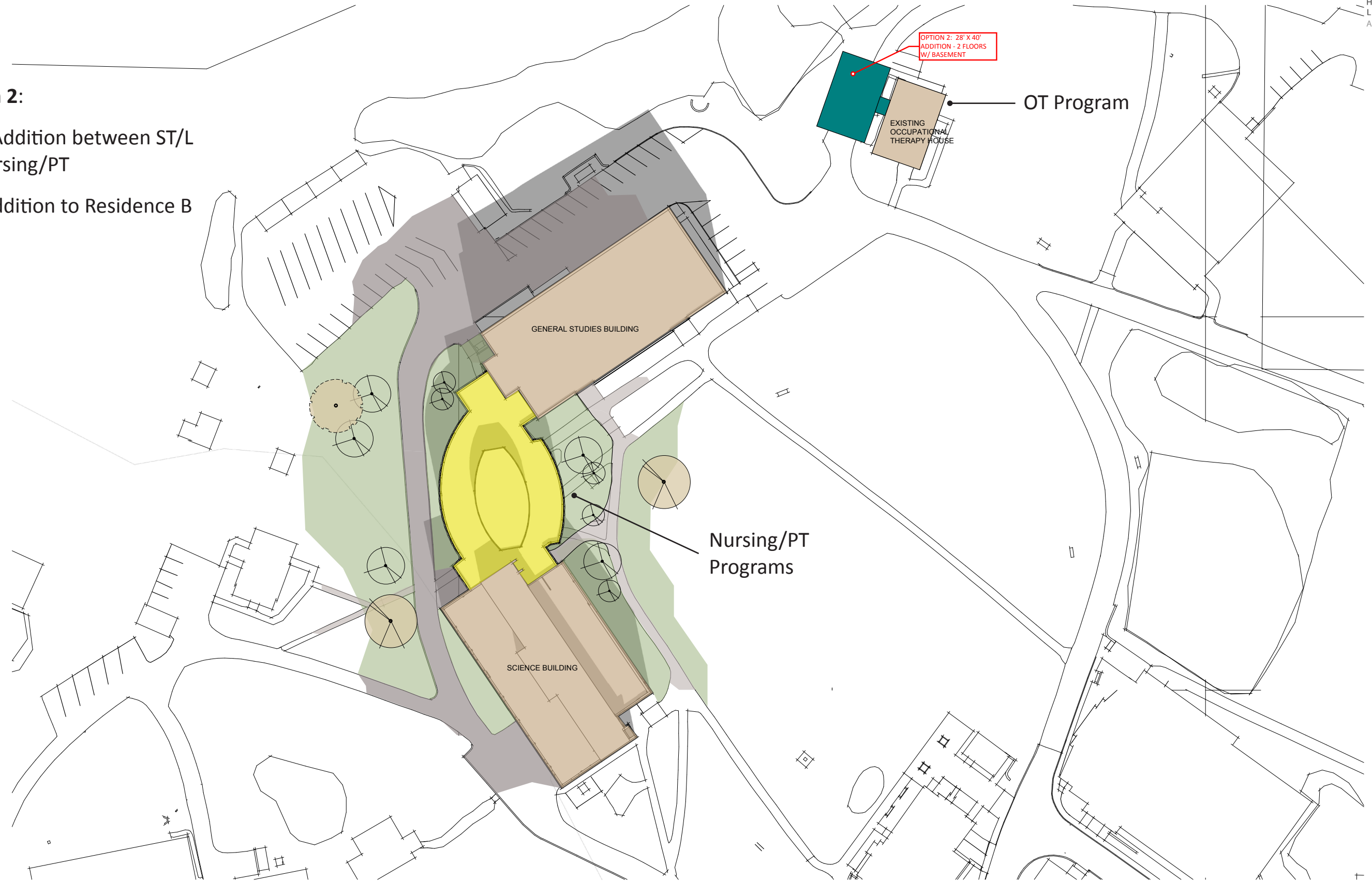
Architectural Options

Final Option 2

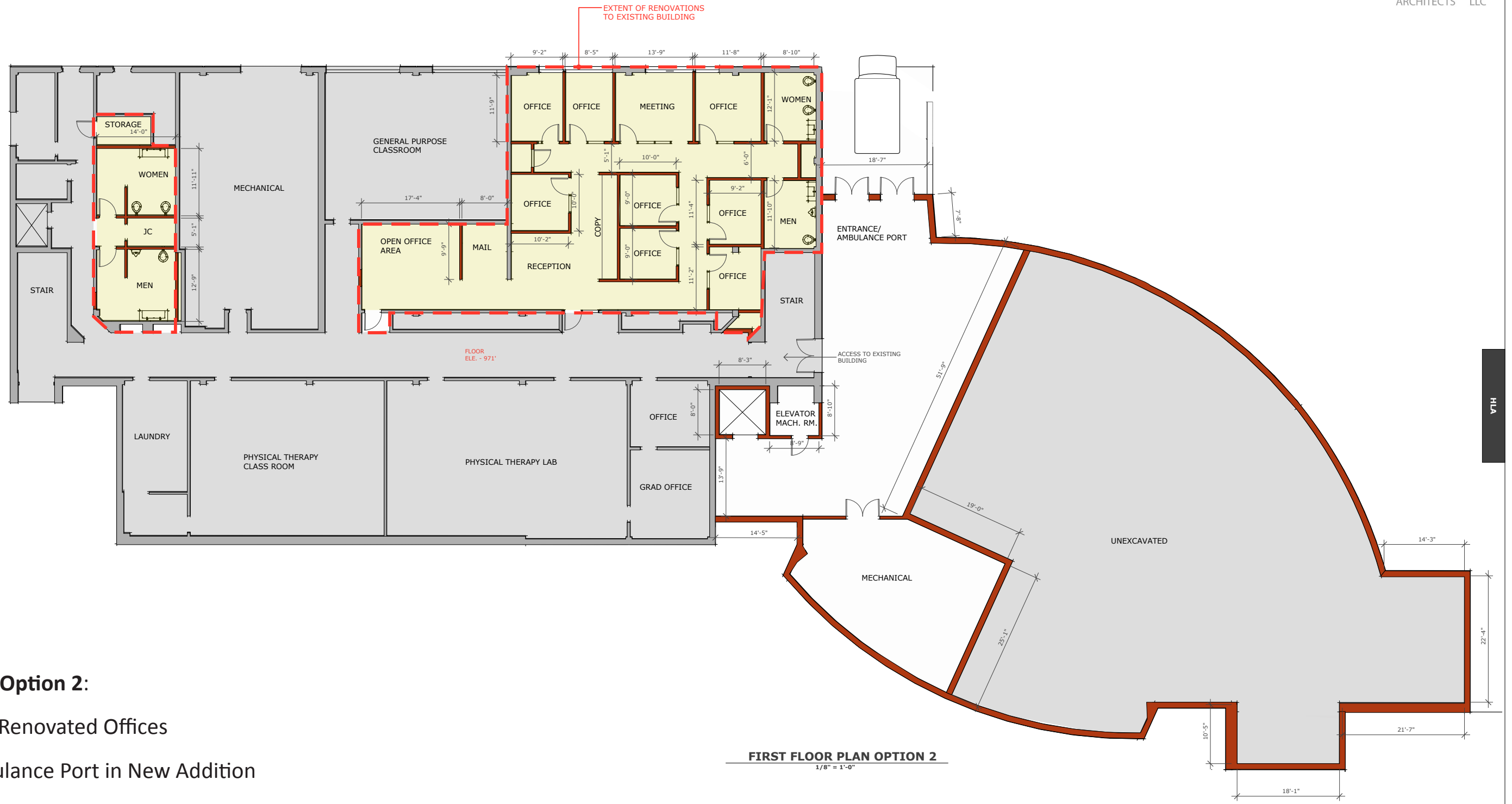
**Final Option 2:**

18,000 S.F. Addition between ST/L  
& GS for Nursing/PT

3,000 S.F. Addition to Residence B  
for OT



HLA



**Final Option 2:**  
 PT & Renovated Offices  
 Ambulance Port in New Addition

**FIRST FLOOR PLAN OPTION 2**  
 1/8" = 1'-0"

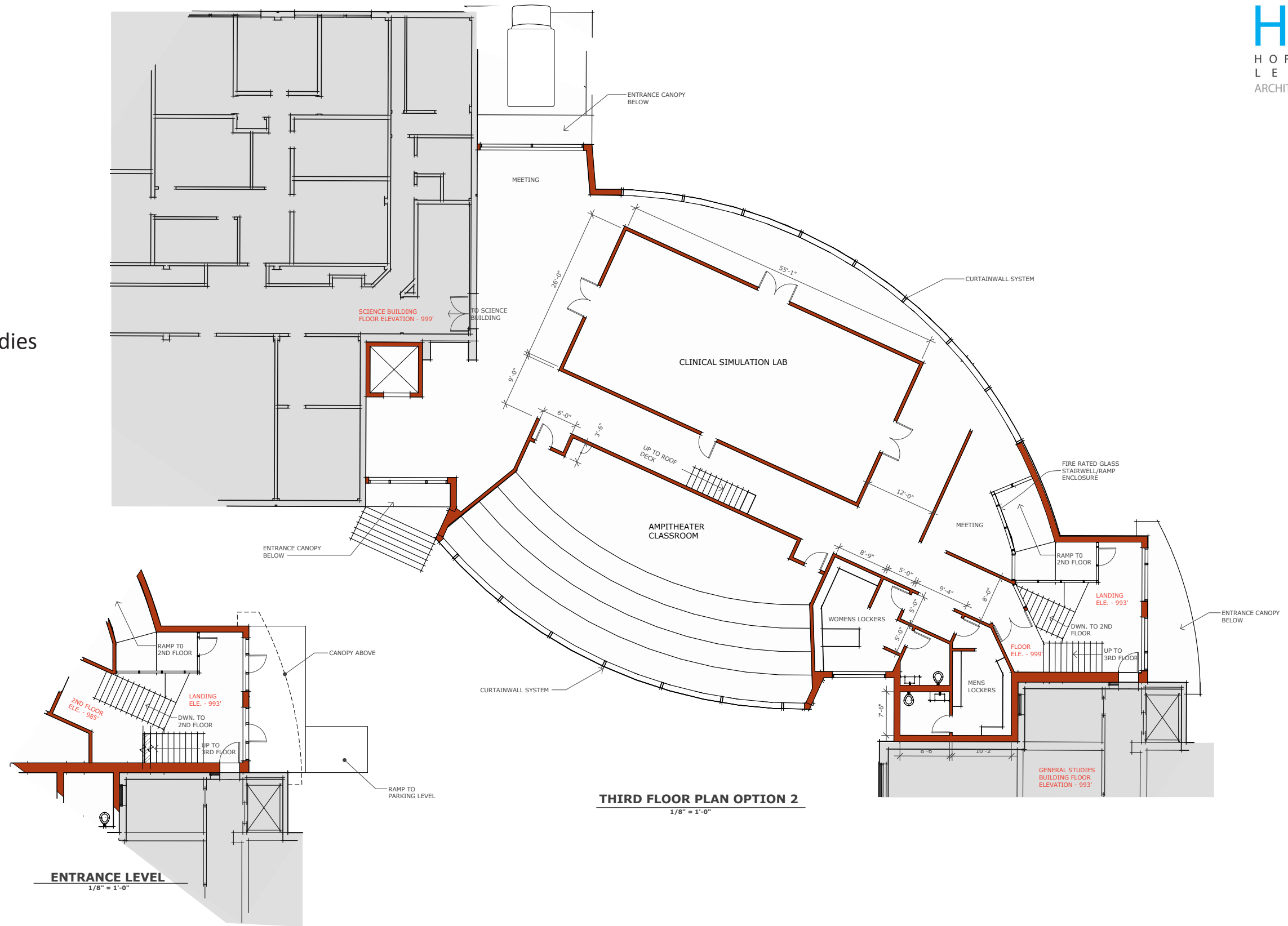


**SECOND FLOOR PLAN OPTION 2**  
 1/8" = 1'-0"

**Final Option 2:**  
 Shared Classrooms/Computer Lab  
 Connecting Ramp to General Studies  
 West Entrance  
 Connection to General Studies Building

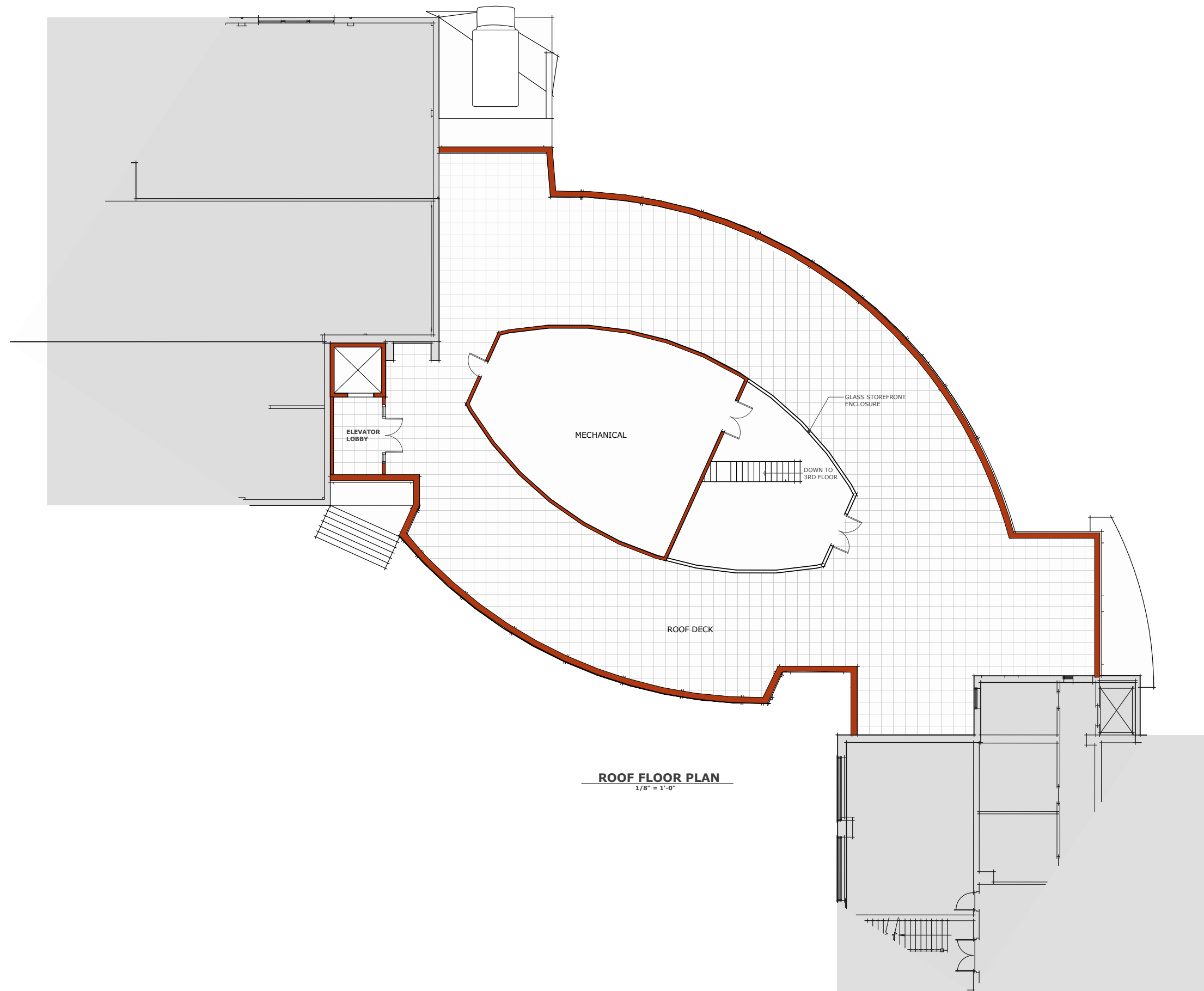
HLA

**Final Option 2:**  
 Nursing Program Area  
 West Entrance  
 Connection to General Studies  
 Building



HLA





**ROOF FLOOR PLAN**  
1/8" = 1'-0"

**Final Option 2:**  
Roof Terrace

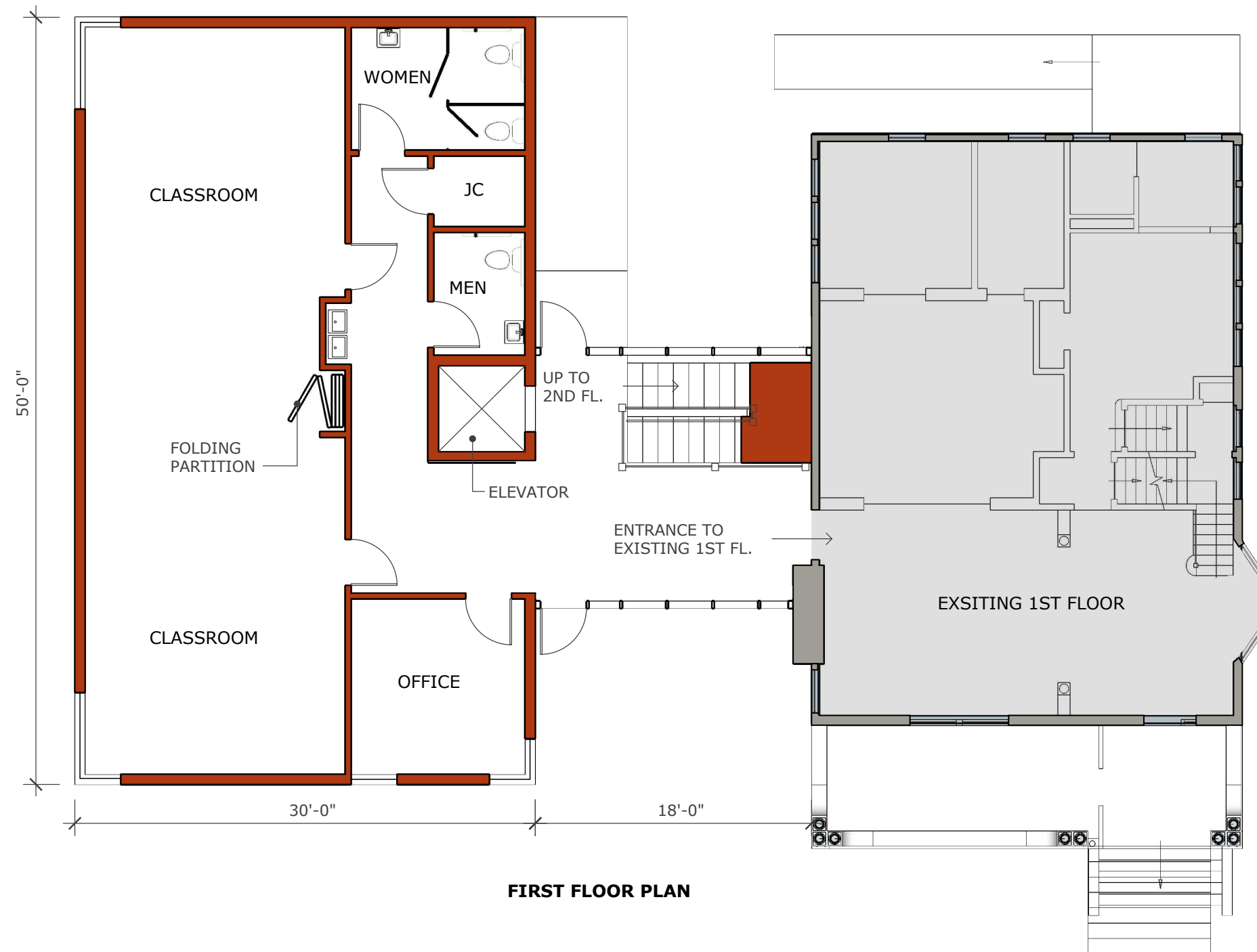
HLA



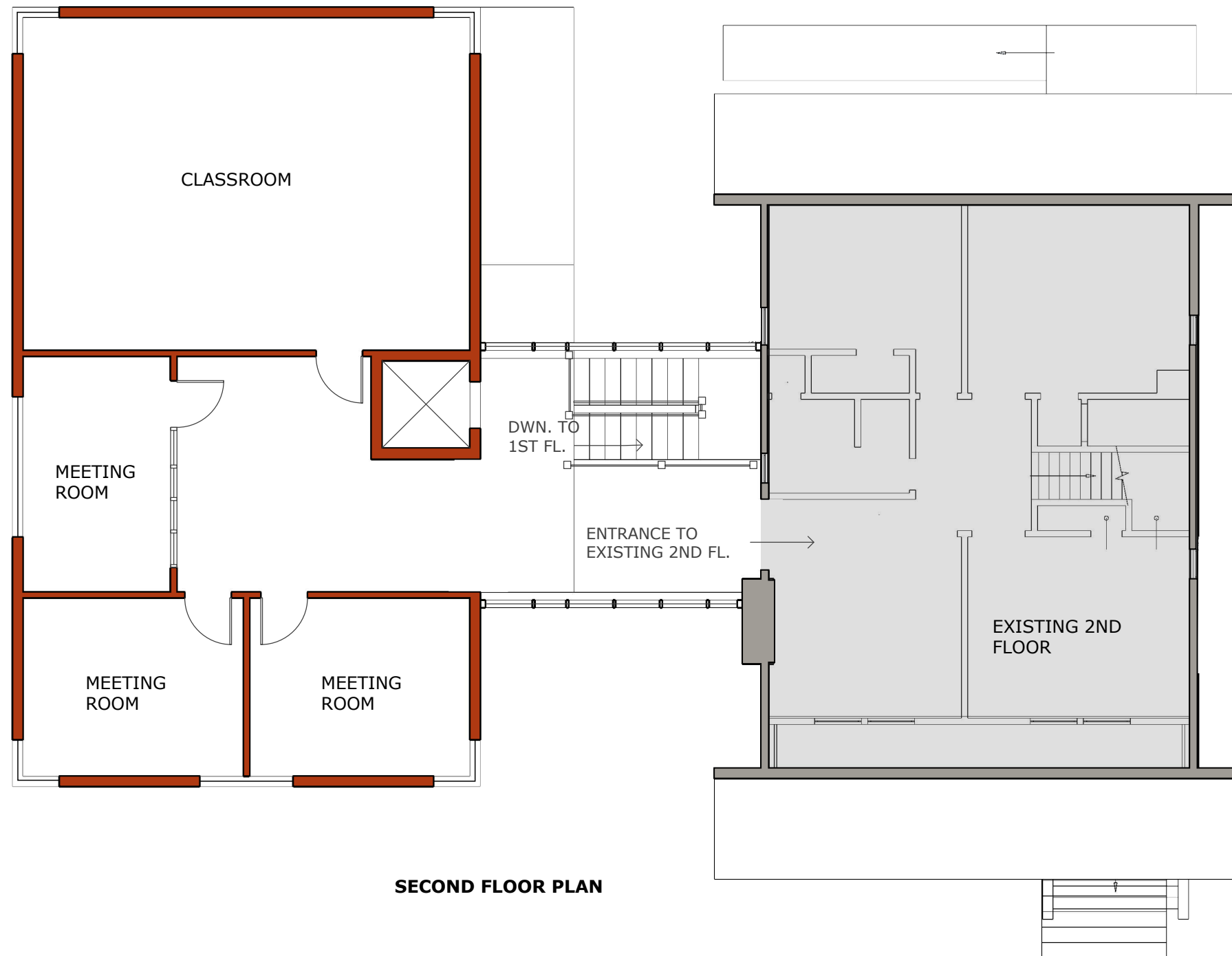
**Final Option 2:**

Science/Technology Building Addition

**Final Option 2:**  
Residence B Addition  
pg 1 of 2



HLA



**SECOND FLOOR PLAN**

**Final Option 2:**  
 Residence B Addition  
 pg 2 of 2

H1A

MEP Analysis

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Final Options 1 & 2

## GENERAL PROVISIONS – MECHANICAL AND ELECTRICAL

### Project Description

**Option 1:** Renovations to approximately 7,000 sq. ft. of existing space on the first floor of the 3-story, 32,700 sq. ft. Science/Technology Laboratory (S/TL) for offices and restrooms, and a 3-story, 24,600 sq. ft. Allied Health Addition (AHA) between the S/TL and General Studies Building (GSB) for classrooms, labs, and circulation space. There will be a penthouse on the addition roof for mechanical equipment.

**Option 1A:** The AHA will be served by HVAC and electrical services independent of the existing building with systems located in proposed mechanical rooms and penthouse.

**Option 1B:** The existing electric heating equipment throughout the existing S/TL will be replaced with a hot water heating system located in the existing S/TL mechanical room to service both the existing building and proposed addition. The existing chiller and cooling tower serving the S/TL will be removed and replaced with a new chiller and cooling tower located in AHA penthouse and on the AHA roof to serve both the S/TL and AHA. Removing the existing electric heat from the S/TL electrical service will allow the existing service to serve both the S/TL and AHA.

**Option 2:** Renovations to approximately 7,000 sq. ft. of existing space on the first floor of the S/TL for offices and restrooms, and a 3-story (partial 1st floor), 16,400 sq. ft. Allied Health Addition between the S/TL and GSB for classrooms, labs, and circulation space. There will be a penthouse on the AHA roof for mechanical equipment. In addition, the existing 2-story, approximately 2500 sq. ft. OT House (OTH) will be renovated for lab space. A 2-story, 2500 sq. ft. OT Addition (OTA) connected to the OTH will provide classroom and office space. Both the existing house and proposed addition will have basements for mechanical and electrical services.

**Options 2A and 2B:** Similar to Options 1A and 1B above for the smaller proposed addition to the S/TL.

### Site:

#### A. Science and Technology Laboratory and Proposed Allied Health Addition

1. An existing 8 inch water main runs through the area of the proposed addition. This main will be re-routed around the south end of the S/TL and reconnected to the main in the Commons Area.
2. There is an existing sanitary manhole near the south corner of the building. The manhole and piping from the existing building will remain.
3. An existing 10 inch storm line runs through the area of the proposed addition. This line will be re-routed around the west side of the S/TL and connect to an existing storm line at the south corner of the building.
4. An existing 2 inch natural gas main runs through the area of the proposed addition. This main will be re-routed around the south end of the S/TL and reconnected to the main in the Commons.
5. The electrical service and transformer for the GSB is within the footprint of the proposed addition. This service will be relocated to the east side of the proposed addition. The service will enter an electrical room in the proposed addition and from there be extended to refeed the existing GSB distribution system.
6. The telecommunications service to the GSB is within the footprint of the proposed addition. This service will be relocated to the east side of the proposed addition and through the building to the current termination point.

#### B. OT House and OT Addition

1. There is a water main on the east side of the house that will remain.
2. There are sanitary and storm lines that leave the house on the southeast corner of the house that will remain.
3. There is a natural gas main west of the existing house; close to the northwest corner of the proposed addition. This line will need to be located in the field to determine if it needs to be extended around the corner of the proposed addition.
4. The electrical and telecommunications service for the house come from the nearby Library building and enter on the east side of the house.

**Fire Protection:****SPRINKLER SYSTEMS**

## System Description

## A. Science and Technology Laboratory and Proposed Allied Health Addition

1. A 6 inch combination fire/water service will be extended from the 8 inch water main located at the north corner of S/TL. The combination service will split inside a mechanical room on the first floor into a 4 inch fire line and a 2-1/2 inch water line. The mechanical room will contain a double detector backflow preventer for each service.
2. The building addition and renovation areas will be fully protected by a wet pipe sprinkler system. The fire protection contractor will be responsible for final design and installation in accordance with applicable code and agency requirements.

## B. OT House and OT Addition

1. A 4 inch combination fire/water service will be extended from the water main located on the east of the OTH. The combination service will split inside the basement into a 4 inch fire line and a 2 water line. The mechanical room will contain a double detector backflow preventer for each service.
2. The building addition and renovation areas will be fully protected by a wet pipe sprinkler system. The fire protection contractor will be responsible for final design and installation in accordance with applicable code and agency requirements.

**FIRE EXTINGUISHING SYSTEMS**

## System Description

## A. Science and Technology Laboratory and Proposed Allied Health Addition

1. A clean-agent fire extinguishing system will be provided for the MDT in the AHA.

**Plumbing:**

## Demolition

## A. Science and Technology Laboratory

1. The existing plumbing fixtures and piping in the area of the proposed renovations will be removed and modified as required to accommodate the renovations.

## B. OT House

1. All existing plumbing equipment, piping and fixtures will be replaced.

**PLUMBING PIPING AND PUMPS**

## Systems Descriptions

## A. Science and Technology Laboratory and Proposed Allied Health Addition

1. A 6 inch combination fire/water service will be extended from the 8 inch water main located at the north corner of S/TL. The combination service will split inside a mechanical room on the first floor into a 4 inch fire line and a 2-1/2 inch water line. The mechanical room will contain a double detector backflow preventer for each service. Domestic water will be distributed to fixtures and equipment throughout the building.
2. The building will be served by a 4 inch sanitary sewer line extended to the existing site sanitary piping at the south end of the S/TL. A house trap will be installed on the sanitary sewer lateral adjacent to the building. Sanitary drainage will be collected from all plumbing fixtures and connected to the sanitary drainage system.
3. The elevator pit will be provided with oil sensing sump pump to discharge to the storm drainage system.
4. Roof drains will be collected to multiple storm drain laterals and will be extended from the building to the site storm drainage system.

5. An emergency (overflow) roof drainage system will be installed as required by code. The emergency roof drainage system will discharge to grade via multiple vertical risers with downspout discharge nozzles.
- B. OT House and OT Addition
1. A 4 inch combination fire/water service will be extended from the water main located east of the OTH. The combination service will split inside the basement into a 4 inch fire line and a 2 inch water line. The basement will contain a double detector backflow preventer for each service. Domestic water will be distributed to fixtures and equipment throughout the existing building and addition.
  2. The building will be served by a 4 inch sanitary sewer line extended to the existing site sanitary piping southeast of the OTH. A house trap will be installed on the sanitary sewer lateral adjacent to the building. Sanitary drainage will be collected from all plumbing fixtures in the existing building and addition and connected to the sanitary drainage system.
  3. The elevator pit will be provided with oil sensing sump pump to discharge to the storm drainage system.
  4. For areas of the building with sloped roofs, the storm drainage system will consist of gutter and downspouts connecting to the site storm water system.

## PLUMBING EQUIPMENT

### System Description

#### A. Science and Technology Laboratory and Proposed Allied Health Addition

1. The existing electric hot water generator will be replaced with two (2) high efficiency, condensing, natural gas fired water heaters located in the existing mechanical room to provide hot water to the existing building and addition. Each water heater will have a storage capacity of 100 gallons and a gas input of 120 MBH. The storage temperature of the water heating system will be set at 120 degrees F.
2. Mixing valves will be provided to generate 110 degrees F water for distribution to the building. A circulating pump and return piping will be provided for the hot water recirculation system.

#### B. OT House and OT Addition

1. Domestic hot water will be furnished to the building by a high efficiency, condensing, natural gas fired water heater located in the basement. Water heater will have a storage capacity of 50 gallons and a gas input of 76 MBH. The storage temperature of the water heating system will be set at 120 degrees F.
2. Mixing valves will be provided to generate 110 degrees F water for distribution to the building. A circulating pump and return piping will be provided for the hot water recirculation system.

## PLUMBING FIXTURES

#### A. Science and Technology Laboratory and Proposed Allied Health Addition

1. Water Closets
  - a. Water Closets (student & staff areas): Wall hung, ADA compliant where required, vitreous china, 1.6 gallons per flush with hard-wired electronic flush valve.
  - b. Water Closets (OT lab area): Residential floor mounted tank style, ADA compliant, vitreous china, with flush valve.
2. Urinals
  - a. Urinals (student and staff areas): Wall hung, ADA compliant where required, vitreous china, 1 gallon per flush with hard-wired electronic flush valve.
3. Lavatories
  - a. Lavatory (student and staff areas): Wall hung, ADA compliant where required, vitreous china. with hard-wired electronic faucet and thermostatic mixing valve.
  - b. Lavatory (student and staff areas): Oval countertop, ADA compliant where required, vitreous china. with hard-wired electronic faucet and thermostatic mixing valve.
  - c. Lavatory (OT lab area): Oval countertop, ADA compliant, vitreous china. with dual lever manual faucet.



4. Sinks
  - a. Sinks: Deep, single compartment, stainless steel, gooseneck spout with dual lever manual faucet.
5. Mop Receptors
  - a. Mop Receptor: Floor mounted, one-piece precast terrazzo with stainless steel protective caps, hose and mop hanger.
6. Electric Water Coolers
  - a. Electric Water Coolers: Wall hung, dual level, ADA compliant, with bottle filler.
- B. OT House and OT Addition
  1. Water Closets
    - a. Water Closets (student & staff areas): Wall hung, ADA compliant where required, vitreous china, 1.6 gallons per flush with hard-wired electronic flush valve.
    - b. Water Closets (OT lab area): Residential floor mounted tank style, ADA compliant, vitreous china, with flush valve.
  2. Urinals
    - a. Urinals (student and staff areas): Wall hung, ADA compliant where required, vitreous china, 1 gallon per flush with hard-wired electronic flush valve.
  3. Lavatories
    - a. Lavatory (student and staff areas): Wall hung, ADA compliant where required, vitreous china. with hard-wired electronic faucet and thermostatic mixing valve.
    - b. Lavatory (OT lab area): Oval countertop, ADA compliant, vitreous china. with dual lever manual faucet.
  4. Sinks
    - a. Sinks: Deep, single compartment, stainless steel, gooseneck spout with dual lever manual faucet.
  5. Mop Receptors
    - a. Mop Receptor: Floor mounted, one-piece precast terrazzo with stainless steel protective caps, hose and mop hanger.
  6. Tub/Shower Units
    - a. One piece fiberglass reinforced plastic with grab bars, curtain rod, "L" shaped fold-up seat, drain, and slip resistant bottom. ANSI A117.1, ADA compliant. Flexible hose shower with adjustable water spray and mounting hardware.
  7. Electric Water Coolers
    - a. Wall hung, dual level, ADA compliant, with bottle filler.

## **SPECIAL (MEDICAL GAS AND VACUUM) SYSTEMS**

### System Description

- A. Science and Technology Laboratory and Proposed Allied Health Addition
  1. Compressed air for simulated medical oxygen and vacuum systems will be provided for the building simulation labs. Outlets in will be integral to the patient headwall system.
  2. The compressed air system will be served by a 2 horsepower, tank mounted air compressor and a desiccant drying system. The ASME rated receiver tank for the compressed air system will be 80 gallons.
  3. The vacuum system will be served by a simplex tank mounted vacuum pump system. Each pump will be 2 horsepower. The ASME rated receiver tank for the vacuum system will be 80 gallons.

## **FUEL GAS SYSTEMS**

### System Description

- A. Science and Technology Laboratory and Proposed Allied Health Addition
  1. Option 1A: A 3 inch natural gas main will be extended from the existing main relocated to the west side of S/TL into the existing mechanical room.

2. Option 1B: A 3 inch natural gas main will be extended from the existing main relocated to the west side of S/TL into a mechanical room in the building addition.
  3. Gas will be distributed to all gas-fired equipment. Individual gas regulators with vents will serve each piece of equipment.
- B. OT House and OT Addition
1. A 1-1/2 inch natural gas main will be extended from the existing main located north of the building into the basement. Gas will be distributed to all gas-fired equipment. Individual gas regulators with vents will serve each piece of equipment.

### Heating, Ventilating & Air Conditioning (HVAC)

#### HVAC PIPING AND PUMPS

##### System Description

###### A. Science and Technology Laboratory and Proposed Allied Health Addition

1. Options 1A and 1B:
  - a. Heating hot water will be distributed by a pair of base-mounted pumps with variable frequency drives. The pumps will operate in a lead-standby sequence. Constant speed, inline primary pumps will be provided for each boiler.
  - b. Chilled water will be distributed by a pair of base-mounted pumps with variable frequency drives. The pumps will operate in a lead-standby sequence. Constant speed, based-mounted primary pumps will be provided for each chiller.
  - c. Condenser water will be distributed by a base-mounted pump for each chiller.

#### AIR DISTRIBUTION

##### System Description

###### A. Science and Technology Laboratory and Proposed Allied Health Addition

1. Temperature control in occupied spaces will be provided by variable air volume (VAV) boxes with hot water heating coils. Spaces with similar functions and exposures will be grouped together. Temperature control in unoccupied spaces will be provided by variable air volume (VAV) shutoff boxes.
2. Ventilation for toilet rooms will be provided by roof exhaust fans. The fans will be controlled by the building automation system.

###### B. Ventilation for mechanical and electrical rooms will be provided by roof exhaust fans. The fans will be thermostatically controlled.

###### C. OT House and OT Addition

1. Ventilation for toilet rooms will be provided by a cabinet fans ducted to the exterior. The fans will be controlled through occupancy sensor lighting controls or through manual timer switches.
2. Ventilation for mechanical and electrical rooms will be provided by a cabinet fans ducted to the exterior. The fans will be thermostatically controlled.

#### CENTRAL HEATING EQUIPMENT

##### System Description

###### A. Science and Technology Laboratory and Proposed Allied Health Addition

1. **Option 1A:** Hot water for the building will be provided by two (2), 1,000 MBH input high efficiency condensing type boilers located in a first floor mechanical room in the AHA.
2. **Option 1B:** Hot water for the building will be provided by two (2), 2,500 MBH input high efficiency condensing type boilers located in the existing S/TL mechanical room in place of the existing chiller.
3. Hot water will be supplied to the building at 140 degrees F. Hot water terminal units will be designed for a

nominal 40 degrees F temperature drop.

**CENTRAL COOLING EQUIPMENT**

System Description

A. Science and Technology Laboratory and Proposed Allied Health Addition

1. **Option 1A:**

- a. Chilled water for building cooling will be provided by a nominal 100 ton water-cooled magnetic bearing centrifugal chiller located in the AHA penthouse mechanical room. Chilled water will be supplied to the building at 45 degrees F. Chilled water terminal units will be designed for a nominal 16 degrees F temperature rise.
- b. The chiller will be served by a nominal 125 nominal tonnage fiberglass forced draft, counter flow cooling tower located on the AHA roof adjacent to the penthouse. The cooling tower will be selected with an entering water temperature of 95 degrees F and a leaving water temperature of 85 degrees F at an ambient temperature of 78 degrees F wet bulb.

2. **Option 1B:**

- a. Chilled water for building cooling will be provided by a nominal 250 ton water-cooled magnetic bearing centrifugal chiller located in the AHA penthouse mechanical room. Chilled water will be supplied to the building at 45 degrees F. Chilled water terminal units will be designed for a nominal 16 degrees F temperature rise.
- b. The chiller will be served by a nominal 315 nominal tonnage fiberglass forced draft, counter flow cooling tower located on the AHA roof adjacent to the penthouse. The cooling tower will be selected with an entering water temperature of 95 degrees F and a leaving water temperature of 85 degrees F at an ambient temperature of 78 degrees F wet bulb.

**CENTRAL HVAC EQUIPMENT**

System Description

A. Science and Technology Laboratory and Proposed Allied Health Addition

- 1. Heating, cooling and ventilation will be provided by indoor variable air volume air handling units with hot water heating and chilled water cooling coils. The units will be located and nominally sized as noted below.
- 2. The building will be zoned into the following air systems:

Design	Location	Area(s) Served	Nominal Airflow (cfm)
AHU-1	S/TL Exist Mech Rm	1st Flr S/TL	10,000
AHU-2	AHA 1st Fr Mech Rm	1st Flr AHA	12,500
AHU-3	AHA Penthouse	2nd Flr AHA	12,500
AHU-4	AHA Penthouse	3rd Flr AHA (1)	12,500

Option 1 only

B. OT House and OT Addition

- 1. Heating, cooling, and ventilation will be provided by multiple gas-fired furnaces located in the existing and proposed basement and attic spaces. The furnaces will be provided with DX cooling coils and associated condenser-compressor units located on grade.

**DECENTRALIZED HVAC EQUIPMENT**

System Description

A. Science and Technology Laboratory and Proposed Allied Health Addition

1. Cooling for main data frame (MDF) rooms and other data rooms will be provided by ductless split system air conditioning units.
  2. Supplemental heat for large window areas will be provided by hot water wall-hung radiation. The perimeter heat and VAV box heating coils will be sequenced through the building automation system to provide staged heating control in those areas.
  3. Heating for stairwells, vestibules, toilet rooms, etc. will be provided by hot water cabinet or wall insert heaters.
  4. Heating for mechanical and electrical rooms and other “back-of-house” spaces without finished ceilings will be provided by hot water heaters.
- B. OT House and OT Addition
1. Supplemental heat will be provided by electric baseboard radiation or unit heaters.

## BUILDING AUTOMATION SYSTEM

### System Description

- A. The existing building automation system will be extended and modified to accommodate the proposed addition and renovations.

### Electrical:

## LOW-VOLTAGE ELECTRICAL DISTRIBUTION, 600V AND BELOW

### System Description

#### A. Science and Technology Laboratory and Proposed Allied Health Addition

1. Building Service
  - a. **Option 1A:** The building addition will be served by a 480/277 volt, 3-phase, 4-wire, 600 ampere underground service from a pad mounted transformer located at the southwest corner of the addition.
  - b. **Option 1B:** The existing building and addition will be served by the existing 480/277 volt, 3-phase, 4-wire, 2000 ampere switchboard and service.
2. Normal Power Distribution
  - a. **Option 1A:** A 600 ampere, 3-phase, 4-wire, 480/277 volt distribution panelboard will be installed as the main 480/277 volt distribution panelboard. The distribution panelboard will contain a main circuit breaker and digital power monitor connected to the Owner’s telecommunication network.
  - b. **Option 1B:** The existing normal power distribution system will be extended and modified to accommodate the proposed addition and renovations
  - c. **Options 1A and 1B:** The main switchboard will supply normal power 277/480 volt lighting and HVAC panelboards throughout the building and also a 120/208 volt distribution switchboard via a dry-type transformer.
3. Emergency Power Distribution
  - a. The emergency power distribution system will be separated into two systems, the Life Safety System and the Equipment System.
  - b. Each transfer switch will supply a 480/277 volt, 3-phase, 4-wire distribution panel rated the same as its transfer switch.
  - c. Each distribution panelboard will supply a 120/208 volt distribution panelboard via a step-down transformer.

#### B. OT House and OT Addition

1. Building Service
  - a. The building will be served by a 120/208 volt, 3-phase, 4-wire, 225 ampere underground service from pad mounted transformer located at the northeast corner of the building.
2. Normal Power Distribution

- a. A 225 ampere, 3-phase, 4-wire, 208 volt panelboard will be installed as the main 120/208 volt panelboard.
- b. The panelboard will supply normal power loads throughout the building.

**ELECTRICAL POWER GENERATING EQUIPMENT**

System Description

A. Science and Technology Laboratory and Proposed Allied Health Addition

- 1. A 100 KW, 277/480 volt, 3-phase, 4-wire, natural gas fired emergency generator located in an exterior weatherproof, sound-attenuated enclosure. Separate automatic transfer switches will be provided to service life safety and equipment loads.

B. OT House and OT Addition

- 1. Emergency lighting will be provided by the use of light fixtures with integral batteries.

**LIGHTING**

**Lighting Fixture Types & Application**

Areas	Fixture Type/ Description
Amphitheater Classroom	Recessed linear (4-in x 12-ft length) LED lighting fixtures.
Classrooms and Sim Lab	Recessed linear (4-in x 12-ft length) LED lighting fixtures.
Public corridors	Recessed 2x2 direct/indirect architectural LED.
Private Offices	Recessed 2x2 direct/indirect architectural LED.
Lobbies, reception and lounges	6-inch diameter LED downlight for general illumination, decorative pendant fixtures at main entry.
Locations with wall cabinets	Solid-front LED under cabinet lights, clear acrylic, prismatic lens, integral rocker switch.
Toilet rooms, individual	2 or 4 foot wall mounted LED fixtures mounted above mirrors. Supplemental 4" diameter LED downlight in larger rooms.
Utility Rooms and "back-of-house" spaces with finished ceilings	2 x 2 or 2 x 4 foot, recessed LED, 0.125 prismatic lens.
Electrical and mechanical rooms, telecommunication rooms, elevator machine rooms, and other "back-of-house" spaces without finished ceilings	4' industrial LED fixture, pendant mounted.

Areas	Fixture Type/ Description
Stairs	Wall mounted, lensed 4-ft LED architectural fixture at landings. Fixtures will have integral occupancy sensors to dim lighting levels when no occupancy is detected.
Exterior entries w/ overhangs	6-inch diameter, LED recessed lensed downlights (damp listed).

**A. Lighting Control**

1. The public spaces (corridors, lounges, and reception area), classrooms, and labs will be controlled by a Digital Lighting Control system.
  - a. Public spaces, classrooms, and labs will have automatic and low-voltage manual controls. Automatic controls will consist of ceiling-mounted dual-technology occupancy sensors and daylight sensors (where located adjacent to fenestration).
2. All private offices, meeting rooms, conference rooms and small offices spaces will have independent local controls consisting of occupancy sensors and wall station for dimming capabilities.
3. Each room/area will be controlled by at least one wall switch located within the room/area.
4. All electrical/mechanical spaces will have standard toggle on/off wall switch.
5. Single gang toilet rooms and small utility type rooms will utilize wall-mounted dual technology (infrared & ultrasonic) occupancy sensors.
6. Locker rooms with toilet rooms will utilize ceiling mounted dual technology (infrared & ultrasonic) occupancy sensors.

B. LED edge-lit acrylic exit signs will be installed throughout the building.

**COMMUNICATIONS**

**CABLING**

System Description

A. A raceway system and cables will be installed for Owner furnished and installed data system equipment.

**DATA COMMUNICATIONS SYSTEMS**

System Description

A. Science and Technology Laboratory and Proposed Allied Health Addition

1. The data communications infrastructure system will be fed from telecommunications closets located in the S/TL. Each workstation will receive two data drops. Multiple wireless access points will be provided per floor to provide wireless coverage.

B. OT House and OT Addition

1. The data communications infrastructure system will be fed from a telecommunications closet located in the OTA. Each workstation will receive two data drops. Multiple wireless access points will be provided per floor to provide wireless coverage.

**VOICE COMMUNICATIONS**

System Description

A. Science and Technology Laboratory and Proposed Allied Health Addition

1. The voice communications infrastructure system will utilize VOIP telephones and will be fed from telecommunications closets located in the S/TL.
- B. OT House and OT Addition
1. The voice communications infrastructure system will utilize VOIP telephones and will be fed from a telecommunications closet located in the OTA.

### **AUDIO-VISUAL COMMUNICATIONS**

#### System Description

##### A. Science and Technology Laboratory and Proposed Allied Health Addition

1. Multi-media Support Systems
  - a. A multi-media interface, audio amplification and multi-media control system for Owner furnished and installed classroom projectors will include ceiling mounted projector media interface outlets, wall mounted source equipment interface outlets, wall mounted interface outlets and interface cables as coordinated with the Owner. The system will include wall mounted controls and ceiling or projector pole mounted audio amplifiers and audio video control system for input selection and volume control of the Owner furnished and installed projector and media source equipment. The system will also include ceiling mount speakers (two per classroom typical) connected to the ceiling mounted audio system amplifier as required by room layout and configuration and as coordinated with the Owner.

### **DISTRIBUTED COMMUNICATIONS SYSTEMS**

#### System Description

##### A. Science and Technology Laboratory and Proposed Allied Health Addition

1. Assistive Listening System
  - a. An assistive listening system will be furnished and installed and interconnected to the sound reinforcement system in the Amphitheater Classroom room as required by code and applicable Americans with Disabilities Act (ADA) Guidelines. The system will be equipped with the number of assistive listening devices as required by code and applicable ADA Guidelines.
2. Sound Distribution System
  - a. A sound distribution system will be provided for the Amphitheater Classroom. The head-end equipment will be located in an adjacent space as coordinated with the Owner. The sound distribution system will include ceiling and structure mount speakers and wall mounted control stations for operation and control of the sound system equipment.

### **SAFETY AND SECURITY**

#### **SECURITY AND ACCESS CONTROL SYSTEMS**

#### System Description

##### A. Science and Technology Laboratory and Proposed Allied Health Addition

1. An access control and security system, including connections to the Owner's central monitoring location, will include security/access control panels, card readers, door contacts, security system power supplies, wiring and cabling. The system will include all wiring and cabling as required to connect door hardware power supplies and electric door hardware.

##### B. OT House and OT Addition

1. An access control and security system, including connections to the Owner's central monitoring location, will include security/access control panels, card readers, door contacts, security system power supplies, wiring and cabling. The system will include all wiring and cabling as required to connect door hardware power supplies and electric door hardware.

### **OBSERVATION SYSTEMS**

#### System Description

##### A. Science and Technology Laboratory and Proposed Allied Health Addition

1. A closed-circuit television (CCTV) system will be provided as part of the simulation lab. A single system control location with operator keyboard and monitor will be located where directed by Owner. CCTV cameras and system viewing monitors will be provided at locations as coordinated with the Owner. CCTV cameras may be fixed cameras, pan-tilt-zoom (PTZ) cameras, or a combination of camera types as desired by the Owner. Digital video recorder(s) located in will support the quantity of cameras, required recording rates and storage duration as coordinated with the Owner.

### **FIRE DETECTION AND ALARM SYSTEM**

#### System Description

##### A. Science and Technology Laboratory and Proposed Allied Health Addition

1. The existing addressable fire alarm system will be extended and modified as required for the AHA.

##### B. OT House and OT Addition

1. An addressable fire alarm system will be provided with central fire alarm control panel, remote panels, initiation devices, automatic detectors, monitoring devices, relay devices and notification appliances as required by code.