A NEW RETREAT CENTER AT 4848 LYONS VIEW PIKE
THE UNIVERSITY OF TENNESSEE, KNOXVILLE

Programming Document
SBC NO. 540/009-18-2018

APRIL 15, 2019
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PARTICIPANTS

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INTRODUCTION

This program document is the outcome of a UTK 4848 Lyons View Programming Task, SBC NO. 540/009-18-2018, For a Retreat Center for the University of Tennessee, Knoxville.

The purpose of this program document is to:

• Define the space requirements for the University’s Retreat Center designed to meet the goals achievable within the project’s budget limitations.

• Initiate the procurement of design services, provide the designer, users and management with a document accurately summarizing the required functional, operational and spatial requirements for the project in sufficient detail to initiate design work.

• Provide project approval and funding authorities with information on which to base capital requirements.

The programming process consisted of meetings with the steering committee, the exchange of drafts and review comments, on site analysis of the existing building conditions, review of known data and the review of graphic analyses of options for use of the existing building.

PROJECT OVERVIEW

The University of Tennessee Knoxville sees the need for a local Retreat Center that will primarily cater to students, faculty, administrators, donors, alumni groups, trustees, and staff of the University but will also be suitable and attractive for use by non-profit boards, committees, and community groups. The University can also see the Retreat Center as a venue for hire for special events, dinners, weddings and corporate meetings. The program is based on an occupancy of 200 persons in the largest meeting room.

THE SITE

The University of Tennessee was bequeathed 24 acres of property at 4848 Lyons View Pike in the Sequoyah Hills neighborhood of Knoxville, just a few miles west of the University. The property is approximately 1/3 wooded and 2/3 open area and abuts the Tennessee River, also known as Fort Loudon Lake. There is 783 linear feet of waterfront at TVA’s low water line. The existing site structures consist of a two-story, 7,400 square foot brick residence with a three-car garage and partial basement, and a stable of brick and timber construction.

Both structures are heavily deteriorated.
PROJECT GOALS

OVERALL PROJECT GOALS
The Retreat Center is to be perceived as:

- A comfortable and functional place apart from the University for groups of up to 200 people to congregate for discussions, contemplation, and improvement.
- A place that will attract both University, community and corporate groups.
- A place that will be physically attractive for special events as a venue for hire.
- A place that takes advantage of the property and views of the Tennessee River.
- A place that is in harmony with the surrounding neighborhood.
SECTION TWO \ Site Analysis
INTRODUCTION

While the Retreat Center at 4848 Lyons View is not contiguous to the Knoxville campus, it does contribute to UT’s Long-Range Master Plan created in September of 2011 in the following ways:

As a support to UT Knoxville’s Top 25 goal, the Retreat Center will contribute an added and unexpected venue for students, faculty and staff to participate in discussion, conversation and improvement activities that should contribute to retention, well-being, productivity and creativity. It also provides an opportunity to directly maximize connections to surrounding communities.
LOCATION

12  PROGRAMMING DOCUMENT | SITE ANALYSIS
SITE DRAINAGE

BUILDABLE AREA
VEHICULAR TRAFFIC & ACCESS

PUBLIC SPACES
SUN PATH

VIEWS FROM ENTRY

Site Plan - sun paths
1:200

Site Plan - views of site from entry
1:200
Cleared area to promote lake views
THE PROPERTY

The University of Tennessee property at 4848 Lyons View Pike is probably the largest single piece of single-family zone riverfront real estate in the city limits of Knoxville. It fronts on Lyons View Pike, a major thoroughfare lined with large single-family homes, some condominiums and a large golf and country club. A brick wall and gate structure separate the property from the street. The portion of the property nearest the road is raised and the land is open and gently rolling. As the land approaches the river, to the south, the elevation drops over a hundred feet in height with the lower half of the property heavily wooded, obstructing the view of the river. The house sits at the foot of a long concrete driveway that terminates with one fork at a concrete car park, surrounded by low walls, at the front door. The second fork continues down toward the waterfront, allowing access to a service yard and three-car garage on the east end of the house and further down to a two-story horse barn. The quality of the driveway deteriorates as it moves away from the house, eventually diminishing into little more than a gravel path.
3.2
EXISTING BUILDING ANALYSIS & HISTORICAL SIGNIFICANCE

RENOVATION / PRESERVATION OF THE EUGENIA WILLIAMS HOUSE

There are two structures on the property. The main house is a two-story 7,400 square foot brick residence with an attached 3-car garage and a partial basement. It was designed by Knoxville-born Houston architect John Fanz Staub in the Regency style.

The exterior of the house is brown brick with concrete and wood trim. Wood shutters and extensive wrought iron railing and columns complete the materials used. The exterior is in dilapidated condition. Much of the brick needs tuck-pointing, the iron work is rusted, the shutters rotted and most of the widow panes are broken. While a detailed assessment of the roof was not made, interior evidence indicates severe and long-term leaks in the flat roofed portions of the structure. There are broken or missing gutters and downspouts that are allowing staining, moss and rot on the exterior.

The interior of the house, with some areas showing severe damage from roof leaks, has no surface that would not require rehabilitation, likely down to the structure and framing. While moldings, paneling, mantels, metal railings, most light fixtures, casework and affixed mirrors are intact, all would require serious remedial attention. While the rooms are few, they are generously sized and there are many large windows and “French” doors to provide access to the covered terrace and small balcony on the south side of the house. While the main kitchen, butler’s pantry and staff kitchen were state of the art in 1940, very little, if any, of the cabinetry or appliances would meet today’s standards. The basement walls show evidence of water infiltration, either from the disconnected downspouts or deterioration of the exterior waterproofing.

The carriage house structure is in equally poor condition and has been open to the weather, animals, vandals and encroaching vegetation for many years. Portions of the slate roofing are also missing.

While the house is an interesting example of domestic design and construction, it would require extensive and costly repairs to make it habitable again and even more to bring it up to today’s standards of comfort and codes. While the structure is not particularly old and had no real historic significance, if it is decided to demolish the house, it is recommended that appropriate artifacts from the structure be incorporated into the new building and that a display is created to explain the property and its relevance to Knoxville and architectural design history.
10,000 sf footprint
Rescaled to 1/16”

Residence Footprint
Rescaled to 1/16”
There are three basic options for the future of the existing residence. The first would be total restoration and reuse as all or part of the Retreat Center. The second would be a partial reuse, i.e. using the façade perhaps or the basement structure as part of the new building. The third would be total demolition. Here are the three options with the factors that will drive the decision making on each:

**Total Restoration**
- Suitability of the spaces for a Retreat Center
- Cost of Restoration
- Ability to add on additional program space

**Partial Reuse**
- Suitability of use for the part of the structure to be preserved.
- Structural integrity and added cost of stabilizing or strengthening

**Demolition**
- Determination that the arrangement and size of rooms are not suitable for a Retreat Center.
- Determination that the cost of reuse of the structure or reuse of part of the structure is not a good value
EXISTING SITE PLAN

CONCEPT 1
CONCEPT 2

CONCEPT 3
## Concept 1 | Concept 2 | Concept 3

<table>
<thead>
<tr>
<th>Maximum Points</th>
<th>Renovation and Addition</th>
<th>Incorporating Part of the Structure / Primarily New Construction</th>
<th>All New Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>15</td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>20</td>
<td>10</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>15</td>
<td>0</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>65</strong></td>
<td><strong>75</strong></td>
</tr>
</tbody>
</table>

3rd | 2nd | 1st

**PRELIMINARY EVALUATION OF OPTIONS**
The project is a Retreat Center that does not currently exist for UTK. The new facility shall be designed to provide a state-of-the-art venue for conferences of up to 200 persons in a single meeting. The program includes associated spaces including break-out rooms, support facilities, a gathering space/lobby and outdoor venues including a large terrace and second floor balcony. In addition, for use for large events including weddings and other celebrations, an outdoor area will be prepared for the erection of a large tent. Parking is to be provided for 150 vehicles in the most unobtrusive way.

The following are key themes that should be carried through design in the character of the building.

- Suitability of the design related to the surrounding neighborhood
- Openness of the facility to the outdoors to encourage use of the property
- Design to take advantage of the view of the Tennessee River / Fort Loudoun Lake
- The creation of walking trails on the property and as a link to the Tennessee River/Fort Loudoun Lake is desirable
- Protect the carriage house on the property from further damage caused by water intrusion for use in the future.
### SUMMARY OF PROGRAM SPACES

<table>
<thead>
<tr>
<th>Space</th>
<th>Occupancy</th>
<th>Net SF</th>
<th>Gross SF</th>
<th>Ceiling Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrance Lobby</td>
<td>200</td>
<td>1,000</td>
<td>1,430</td>
<td>12’</td>
</tr>
<tr>
<td>Coat Closet</td>
<td>0</td>
<td>50</td>
<td>72</td>
<td>9’</td>
</tr>
<tr>
<td>Main Assembly Room</td>
<td>200</td>
<td>4,000</td>
<td>5,720</td>
<td>14’</td>
</tr>
<tr>
<td>Break Out Room A</td>
<td>50</td>
<td>1,000</td>
<td>1,430</td>
<td>12’</td>
</tr>
<tr>
<td>Break Out Room B</td>
<td>50</td>
<td>1,000</td>
<td>1,430</td>
<td>12’</td>
</tr>
<tr>
<td>Break Out Room C</td>
<td>50</td>
<td>1,000</td>
<td>1,430</td>
<td>12’</td>
</tr>
<tr>
<td>Break Out Room D</td>
<td>50</td>
<td>1,000</td>
<td>1,430</td>
<td>12’</td>
</tr>
<tr>
<td>Dressing Room</td>
<td>8</td>
<td>200</td>
<td>286</td>
<td>9’</td>
</tr>
<tr>
<td>Catering Kitchen</td>
<td>0</td>
<td>300</td>
<td>429</td>
<td>9’</td>
</tr>
<tr>
<td>Kitchen Storage</td>
<td>0</td>
<td>120</td>
<td>172</td>
<td>9’</td>
</tr>
<tr>
<td>Center Manager Office</td>
<td>2</td>
<td>180</td>
<td>257</td>
<td>9’</td>
</tr>
<tr>
<td>A/Equipment Storage</td>
<td>0</td>
<td>200</td>
<td>286</td>
<td>9’</td>
</tr>
<tr>
<td>Furniture Storage</td>
<td>0</td>
<td>500</td>
<td>715</td>
<td>9’</td>
</tr>
<tr>
<td>Building Maintenance</td>
<td>0</td>
<td>150</td>
<td>215</td>
<td>9’</td>
</tr>
<tr>
<td>Housekeeping Closet</td>
<td>0</td>
<td>150</td>
<td>215</td>
<td>9’</td>
</tr>
<tr>
<td>Public Restrooms (Female)</td>
<td>16</td>
<td>800</td>
<td>1,144</td>
<td>9’</td>
</tr>
<tr>
<td>Public Restrooms (Male)</td>
<td>8</td>
<td>400</td>
<td>572</td>
<td>9’</td>
</tr>
<tr>
<td>Assisted Restroom</td>
<td>2</td>
<td>50</td>
<td>72</td>
<td>9’</td>
</tr>
<tr>
<td>Terrace</td>
<td>50</td>
<td>1,000</td>
<td>1,430</td>
<td>9’</td>
</tr>
<tr>
<td>Balcony</td>
<td>50</td>
<td>1,000</td>
<td>1,430</td>
<td>9’</td>
</tr>
</tbody>
</table>
The main features of the program are a large 4,000 NSF main assembly room and four 1,000 NSF smaller meeting/break out rooms. Support spaces include a catering kitchen, a manager’s office, a ground level terrace and a similarly sized balcony (oriented to have access to views of the Tennessee River/Fort Loudoun Lake) and various support rooms.
### 4.3 ROOM DATA SHEETS

#### UT 4848 Lyons View Retreat Center
**SBC. No. 540/09-18-2018**

<table>
<thead>
<tr>
<th>1. SPACE REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name:</strong> Entrance Lobby</td>
</tr>
</tbody>
</table>

#### 2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

**Relationships:**
- a. Contiguous: Main entry
- b. Adjacent: Coat Closet
- c. Convenient: Main Assembly Room

**Services and Features:**
- a. Atmospheric Criteria: To be conditioned to 68 winter/74 summer design conditions and not to exceed 60% relative humidity at 99% outdoor design conditions. All air turnover rates and ventilation rates shall meet ASHRAE recommendations and the 2018 IMC.
- b. Illumination: Lighting to be primarily recessed LED can lights to provide a minimum of 50 fc illumination. All lights to be dimmable to 1%, in multiple zones to allow for a variety of uses.
- c. Electrical: 120 volt power at registration desk; 120 volt convenience outlets
- d. Communications: Wi-Fi, data port and telephone at desk
- e. Plumbing: None
- f. Music / Video: Announcement speaker

**Finishes:**
- a. Floor & Base: Hard surface; wood base
- b. Walls: Painted Gyp. Bld or WC
- c. Ceiling: Gyp. Bld. soffits with ACT inset
- d. Doors & Frames: Double entry doors
- e. Windows: Desired
- f. Window Treatments: Shades w/curtains

#### 3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

This space is to serve as a welcoming entry to the Retreat Center. It shall function as a check-in and orientation node and provide waiting and gathering space. While functional for conferencing and business uses, it also needs to be finished in a comfortable, almost residential manner to serve for more hospitality-type uses.

#### 4. KEY LIST OF FURNISHINGS AND EQUIPMENT

- Reception desk
- Soft seating for 20
- Side tables
- Coffee tables
- Table or floor lamps
- Umbrella stand

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#### UT 4848 Lyons View Retreat Center
**SBC. No. 540/09-18-2018**

<table>
<thead>
<tr>
<th>1. SPACE REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name:</strong> Coat Closet</td>
</tr>
</tbody>
</table>

#### 2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

**Relationships:**
- a. Contiguous: Entrance Lobby
- b. Adjacent: Coat Closet
- c. Convenient: Main Assembly Room

**Services and Features:**
- a. Atmospheric Criteria: To be conditioned to 68 winter/74 summer design conditions and not to exceed 60% relative humidity at 99% outdoor design conditions. All air turnover rates and ventilation rates shall meet ASHRAE recommendations and the 2018 IMC.
- b. Illumination: Lighting to be functional LED lay-in light fixtures to provide a minimum of 50 fc illumination.
- c. Electrical: None
- d. Communications: None
- e. Plumbing: None
- f. Music / Video: None

**Finishes:**
- a. Floor & Base: Hard surface; wood base
- b. Walls: Painted Gyp. Bld
- c. Ceiling: ACT
- d. Doors & Frames: "Dutch" door
- e. Windows: None
- f. Window Treatments: None

#### 3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

This space is to serve as a staffed or unstaff cloak room with double hanging rails on three sides. The "Dutch" door can have the top half opened if the room is staffed.

#### 4. KEY LIST OF FURNISHINGS AND EQUIPMENT

- Double coat hanging racks, three sides
1. SPACE REQUIRED

<table>
<thead>
<tr>
<th>Name:</th>
<th>Occupancy</th>
<th>Net Square Footage</th>
<th>Unit Square Footage</th>
<th>Gross Square Footage</th>
<th>Space No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Assembly Room</td>
<td>200</td>
<td>4000</td>
<td>200 at 20 each</td>
<td>5720</td>
<td>3</td>
</tr>
</tbody>
</table>

2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

Relationships:
- a. Contiguous: 
- b. Adjacent: Balcony or Terrace
- c. Convenient: Entrance Lobby

Services and Features:
- a. Atmospheric Criteria: To be conditioned to 68 winter/74 summer design conditions and not to exceed 60% relative humidity at 99% outdoor design conditions. All air turnover rates and ventilation rates shall meet ASHRAE recommendations and the 2018 IMC.
- b. Illumination: Lighting to be primarily recessed LED can lights to provide a minimum of 50 fc illumination. All lights to be dimmable to 1%, in multiple zones to allow for scene selection for a multitude of setups.
- c. Electrical: 120 volt convenience outlets; power at A/V screens
- d. Communications: Wi-Fi and multiple data ports
- e. Plumbing: None
- f. Music / Video: Speakers, sound system, audio-visual appropriate for room size

3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

This space is to serve as the largest meeting room in the Retreat Center and shall be provided with state-of-the-art audio-visual equipment. The room is to have high quality moveable acoustic partitions to make the room divisible into two equally-sized rooms.

4. KEY | LIST OF FURNISHINGS AND EQUIPMENT

- 200 stack chairs, with caddies
- 100 training tables, flip-top, gangable, castered

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UT 4848 Lyons View Retreat Center
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1. SPACE REQUIRED

<table>
<thead>
<tr>
<th>Name:</th>
<th>Occupancy</th>
<th>Set Square Footage</th>
<th>Unit Square Footage</th>
<th>Gross Square Footage</th>
<th>Space No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Break Out Room A</td>
<td>50</td>
<td>1000</td>
<td>50 at 20 each</td>
<td>1430</td>
<td>4</td>
</tr>
</tbody>
</table>

2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

Relationships:
- a. Contiguous: 
- b. Adjacent: Main Assembly Room
- c. Convenient: 

Services and Features:
- a. Atmospheric Criteria: To be conditioned to 68 winter/74 summer design conditions and not to exceed 60% relative humidity at 99% outdoor design conditions. All air turnover rates and ventilation rates shall meet ASHRAE recommendations and the 2018 IMC.
- b. Illumination: Lighting to be primarily recessed LED can lights to provide a minimum of 50 fc illumination. All lights to be dimmable to 1%, in multiple zones to allow for scene selection for a multitude of setups.
- c. Electrical: 120 volt convenience outlets; power at A/V screens
- d. Communications: Wi-Fi and multiple data ports
- e. Plumbing: None
- f. Music / Video: Speakers, sound system, audio-visual appropriate for room size

3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

This space is to serve as a smaller meeting room or as a break-out space from the Main Assembly room.

4. KEY | LIST OF FURNISHINGS AND EQUIPMENT

- 50 stack chairs, with caddies
- 25 training tables, flip-top, gangable, castered

---
1. SPACE REQUIRED

| Name: Break Out Room B | Occupancy: 50 | Net Square Footage: 1000 | Unit Square Footage: 50 at 20 each | Gross Square Footage: 1430 | Space No.: 5 |

2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

   Relationships:
   a. Contiguous: Main Assembly Room
   b. Adjacent: None
   c. Convenient: None

   Services and Features:
   a. Atmospheric Criteria: To be conditioned to 68 winter/74 summer design conditions and not to exceed 60% relative humidity at 99% outdoor design conditions. All air turnover rates and ventilation rates shall meet ASHRAE recommendations and the 2018 IMC.
   b. Illumination: Lighting to be primarily recessed LED can lights to provide a minimum of 50 fc illumination. All lights to be dimmable to 1%, in multiple zones to allow for scene selection for a multitude of setups.
   c. Electrical: 120 volt convenience outlets; power at A/V screens
   d. Communications: Wi-Fi and multiple data ports
   e. Plumbing: None
   f. Music / Video: Speakers, sound system, audio-visual appropriate for room size

3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

   Break Out Room C
   a. Floor & Base: Carpet; rubber base
   c. Ceiling: Gyp. Bld. soffits with ACT inset
   d. Doors & Frames: Solid doors with sidelights
   e. Windows: Desired
   f. Window Treatments: Shades to provide two levels of daylight control (blackout and dim)

4. KEY | LIST OF FURNISHINGS AND EQUIPMENT

   Break Out Room C
   a. 50 stack chairs, with caddies
   b. 25 training tables, flip-top, gangable, castered
   c. Lectern
1. SPACE REQUIRED

| Name: Break Out Room D | Occupancy: 50 | Net Square Footage: 1,000 | Unit Square Footage: 50 at 20 each | Gross Square Footage: 1430 | Space No: 7 |

2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

Relationships:
- a. Contiguous:
- b. Adjacent:
- c. Convenient: Main Assembly Room

Services and Features:
- a. Atmospheric Criteria: To be conditioned to 68 winter/74 summer design conditions and not to exceed 60% relative humidity at 99% outdoor design conditions. All air turnover rates and ventilation rates shall meet ASHRAE recommendations and the 2018 IMC.
- b. Illumination: Lighting to be primarily recessed LED can lights to provide a minimum of 50 fc illumination. All lights to be dimmable to 1%, in multiple zones to allow for scene selection for a multitude of setups.
- c. Electrical: 120 volt convenience outlets; power at A/V screens
- d. Communications: Wi-Fi and multiple data ports
- e. Plumbing: None
- f. Music / Video: Speakers, sound system, audio-visual appropriate for room size

Finishes:
- a. Floor & Base: Carpet; rubber base
- c. Ceiling: Gyp. Bld. soffits with ACT inset
- d. Doors & Frames: Solid doors with sidelights
- e. Windows: Desired
- f. Window Treatments: Shades to provide two levels of daylight control (blackout and dim)

3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

This space is to serve as a smaller meeting room or as a break-out space from the Main Assembly room.

4. KEY | LIST OF FURNISHINGS AND EQUIPMENT

- 50 stack chairs, with caddies
- 25 training tables, flip-top, gangable, casted
- Lectern

8 Dr

1. SPACE REQUIRED

| Name: Dressing Room | Occupancy: 200 | Net Square Footage: 286 | Unit Square Footage: 286 | Gross Square Footage: 286 | Space No: 8 |

2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

Relationships:
- a. Contiguous:
- b. Adjacent: Public Restrooms (Female)
- c. Convenient: None

Services and Features:
- a. Atmospheric Criteria: To be conditioned to 68 winter/74 summer design conditions and not to exceed 60% relative humidity at 99% outdoor design conditions. All air turnover rates and ventilation rates shall meet ASHRAE recommendations and the 2018 IMC.
- b. Illumination: Lighting to be primarily recessed LED can lights to provide a minimum of 50 fc illumination. All lights to be dimmable to 1%
- c. Electrical: 120 volt convenience outlets; power at A/V screens
- d. Communications: Wi-Fi and multiple data ports
- e. Plumbing: None
- f. Music / Video: Speakers, sound system, audio-visual appropriate for room size

Finishes:
- a. Floor & Base: Carpet; rubber base
- c. Ceiling: ACT
- d. Doors & Frames: Solid door with privacy lock
- e. Windows: Desired
- f. Window Treatments: Shades for glare control

3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

This space is to serve as a smaller meeting room or during events, a dressing room.

4. KEY | LIST OF FURNISHINGS AND EQUIPMENT

- Soft seating
- Side tables
- Lamps
- Hanging rack
UT 4848 Lyons View Retreat Center
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1. SPACE REQUIRED

| Name: Catering Kitchen | Occupancy: | Net Square Footage: 300 | Unit Square Footage: 429 | Gross Square Footage: 9 |

2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

Relationships:
a. Contiguous: Kitchen Storage
b. Adjacent: Main Assembly Room
c. Convenient: None

Services and Features:
a. Atmospheric Criteria: To be conditioned to 68 winter/74 summer design conditions and not to exceed 60% relative humidity at 99% outdoor design conditions. All air turnover rates and ventilation rates shall meet ASHRAE recommendations and the 2018 IMC.
b. Illumination: Lighting to be functional LED lay-in light fixtures to provide a minimum of 50 fc illumination.
c. Electrical: A new 120/240 volt panelboard will be installed in kitchen to serve multiple

d. Communications: Wi-Fi and multiple data ports
e. Plumbing: Double bowl stainless steel sink; handwashing sink
f. Music / Video: None

3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

This space is to serve as a staging area for pre-prepared meals, preparation of light snacks and beverages

4. KEY LIST OF FURNISHINGS AND EQUIPMENT

Pantry-type built-in adjustable storage shelves
1. SPACE REQUIRED

| Name: Center Manager Office | Occupancy: 2 | Net Square Footage: 180 | Unit Square Footage: 257.4 | Gross Square Footage: 11 |

2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

Relationships:
- Contiguous:
- Adjacent:
- Convenient: Entrance Lobby

Services and Features:
- Atmospheric Criteria: To be conditioned to 68 winter/74 summer design conditions and not to exceed 60% relative humidity at 99% outdoor design conditions. All air turnover rates and ventilation rates shall meet ASHRAE recommendations and the 2018 IMC.
- Illumination: Lighting to be functional LED lay-in light fixtures to provide a minimum of 50 fc illumination.
- Electrical: 120 volt convenience outlets
- Communications: Wi-Fi and multiple data ports
- Plumbing: None
- Music / Video: None

Finishes:
- Floor & Base: Carpet; rubber base
- Ceiling: ACT
- Doors & Frames: Solid door with sidelight
- Windows: Desired
- Window Treatments: Shades for glare control

3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

This office is to serve the Retreat Center manager and one administrative assistant

4. KEY | LIST OF FURNISHINGS AND EQUIPMENT

2 workstations
2 task chairs
2 3-drawer lateral files
Printer table with storage
2 guest chairs
## UT 4848 Lyons View Retreat Center
### SBC. No. 540/09-18-2018

### 1. Space Required

<table>
<thead>
<tr>
<th>Name: Furniture Storage</th>
<th>Occupancy:</th>
<th>Net Square Footage: 500</th>
<th>Unit Square Footage: 715</th>
<th>Gross Square Footage: 13</th>
</tr>
</thead>
</table>

### 2. Description of Architectural Features and Services

#### Relationships:
- a. Contiguous: Main Assembly Room
- b. Adjacent: None
- c. Convenient: None

#### Services and Features:
- **Atmospheric Criteria:** To be conditioned to 68 winter/74 summer design conditions and not to exceed 60% relative humidity at 99% outdoor design conditions. All air turnover rates and ventilation rates shall meet ASHRAE recommendations and the 2018 IMC.
- **Illumination:** Lighting to be functional LED lay-in light fixtures to provide a minimum of 50 fc illumination.
- **Electrical:** 120 volt convenience outlets
- **Communications:** Wi-Fi and multiple data ports
- **Plumbing:** None
- **Music / Video:** None

#### Finishes:
- **Floor & Base:** Hard surface; rubber base
- **Walls:** Painted Gyp. Bd.
- **Ceiling:** ACT
- **Doors & Frames:** Solid door, lockable
- **Windows:** None
- **Window Treatments:** None

### 3. Description of Functional Requirements

This space is to serve as controlled storage

### 4. Key | List of Furnishings and Equipment

- **Furniture Storage**
- **Building Maintenance**

## UT 4848 Lyons View Retreat Center
### SBC. No. 540/09-18-2018

### 1. Space Required

<table>
<thead>
<tr>
<th>Name: Building Maintenance</th>
<th>Occupancy:</th>
<th>Net Square Footage: 150</th>
<th>Unit Square Footage: 214.5</th>
<th>Gross Square Footage: 14</th>
</tr>
</thead>
</table>

### 2. Description of Architectural Features and Services

#### Relationships:
- a. Contiguous: None
- b. Adjacent: Housekeeping Closet
- c. Convenient: None

#### Services and Features:
- **Atmospheric Criteria:** To be conditioned to 68 winter/74 summer design conditions and not to exceed 60% relative humidity at 99% outdoor design conditions. All air turnover rates and ventilation rates shall meet ASHRAE recommendations and the 2018 IMC.
- **Illumination:** Lighting to be functional LED lay-in light fixtures to provide a minimum of 50 fc illumination.
- **Electrical:** 120 volt convenience outlets
- **Communications:** Wi-Fi and multiple data ports
- **Plumbing:** None
- **Music / Video:** None

#### Finishes:
- **Floor & Base:** Hard surface; rubber base
- **Walls:** Painted Gyp. Bd.
- **Ceiling:** ACT
- **Doors & Frames:** Solid door, lockable
- **Windows:** None
- **Window Treatments:** None

### 3. Description of Functional Requirements

This space is to serve as a supply and equipment closet for building maintenance.

### 4. Key | List of Furnishings and Equipment

- **Building Maintenance**
- **Housekeeping Closet**
1. **SPACE REQUIRED**

<table>
<thead>
<tr>
<th>Name</th>
<th>Occupancy</th>
<th>Net Square Footage</th>
<th>Unit Square Footage</th>
<th>Gross Square Footage</th>
<th>Space No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housekeeping Closet</td>
<td></td>
<td>150</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. **DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES**

**Relationships:**
- a. Contiguous:
- b. Adjacent: Building Maintenance
- c. Convenient: 

**Services and Features:**
- a. Atmospheric Criteria: To be conditioned to 68 winter/74 summer design conditions and not to exceed 60% relative humidity at 99% outdoor design conditions. All air turnover rates and ventilation rates shall meet ASHRAE recommendations and the 2018 IMC.
- b. Illumination: Lighting to be functional LED lay-in light fixtures to provide a minimum of 50 fc illumination.
- c. Electrical: 120 volt convenience outlets
- d. Communications: Wi-Fi and multiple data ports
- e. Plumbing: Mop sink
- f. Music / Video: None

**Finishes:**
- a. Floor & Base: Hard surface; rubber base
- c. Ceiling: ACT
- d. Doors & Frames: Solid door, lockable
- e. Windows: None
- f. Window Treatments: None

3. **DESCRIPTION OF FUNCTIONAL REQUIREMENTS**

This space is to serve as a supply and equipment closet for housekeeping.

4. **KEY | LIST OF FURNISHINGS AND EQUIPMENT**

UT 4848 Lyons View Retreat Center
SBC. No. 540/09-18-2018

1. **SPACE REQUIRED**

<table>
<thead>
<tr>
<th>Name</th>
<th>Occupancy</th>
<th>Net Square Footage</th>
<th>Unit Square Footage</th>
<th>Gross Square Footage</th>
<th>Space No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Restrooms (Female)</td>
<td></td>
<td>16</td>
<td>800</td>
<td>12 units/50 nsf</td>
<td>16</td>
</tr>
</tbody>
</table>

2. **DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES**

**Relationships:**
- a. Contiguous:
- b. Adjacent: Entrance Lobby
- c. Convenient: Main Assembly Room

**Services and Features:**
- a. Atmospheric Criteria: To be conditioned to 68 winter/74 summer design conditions and not to exceed 60% relative humidity at 99% outdoor design conditions. All air turnover rates and ventilation rates shall meet ASHRAE recommendations and the 2018 IMC.
- b. Illumination: Recessed LED lighting to be provided on wet wall and at mirrors.
- c. Electrical: 120 volt convenience outlets
- d. Communications: Wi-Fi and multiple data ports
- e. Plumbing: Per code
- f. Music / Video: Speakers, sound system

**Finishes:**
- a. Floor & Base: Ceramic; ceramic base
- c. Ceiling: ACT
- d. Doors & Frames: Solid doors, push-pull hardware
- e. Windows: None
- f. Window Treatments: None

3. **DESCRIPTION OF FUNCTIONAL REQUIREMENTS**

Restroom requirements are to be evenly divided between the two levels.

4. **KEY | LIST OF FURNISHINGS AND EQUIPMENT**
1. SPACE REQUIRED

<table>
<thead>
<tr>
<th>Name</th>
<th>Occupancy</th>
<th>Net Square Footage</th>
<th>Unit Square Footage</th>
<th>Gross Square Footage</th>
<th>Space No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Restrooms (Male)</td>
<td>8</td>
<td>400</td>
<td>6 units/50 nsf</td>
<td>572</td>
<td>17</td>
</tr>
</tbody>
</table>

2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

   Relationships:
   a. Contiguous:                      
   b. Adjacent: Entrance Lobby         
   c. Convenient: Main Assembly Room   

   Services and Features:
   a. Atmospheric Criteria: To be conditioned to 68 winter/74 summer design conditions and not to exceed 60% relative humidity at 99% outdoor design conditions. All air turnover rates and ventilation rates shall meet ASHRAE recommendations and the 2018 IMC.
   b. Illumination: Recessed LED lighting to be provided on wet wall and at mirrors.
   c. Electrical: 120 volt convenience outlets
   d. Communications: Wi-Fi and multiple data ports
   e. Plumbing: Per code
   f. Music / Video: Speakers, sound system

   Finishes:
   a. Floor & Base: Ceramic; ceramic base
   c. Ceiling: ACT
   d. Doors & Frames: Solid doors, push-pull hardware
   e. Windows: None
   f. Window Treatments: None

3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

   Restroom requirements are to be evenly divided between the two levels.

4. KEY | LIST OF FURNISHINGS AND EQUIPMENT

   Assisted Restroom
   a. Floor & Base: Ceramic; ceramic base
   c. Ceiling: ACT
   d. Doors & Frames: Solid door with privacy lock
   e. Windows: None
   f. Window Treatments: None

   Restroom requirements are to be evenly divided between the two levels.
1. SPACE REQUIRED

<table>
<thead>
<tr>
<th>Name</th>
<th>Occupancy</th>
<th>Net Square</th>
<th>Unit Square</th>
<th>Gross Square</th>
<th>Space No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terrace</td>
<td>50</td>
<td>1,000</td>
<td>50 at 20 each</td>
<td>1430</td>
<td>19</td>
</tr>
</tbody>
</table>

2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

Relationships:
- a. Contiguous:
- b. Adjacent:
- c. Convenient: Main Assembly Room

Services and Features:
- a. Atmospheric Criteria:
- b. Illumination: Recessed and decorative LED lighting
- c. Electrical: 120 volt convenience outlets
- d. Communications: Wi-Fi
- e. Plumbing: Convenient hose bib
- f. Music / Video: Speakers, sound system

3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

This is to be a welcoming open-air, covered space to be used for breaks and session work.

4. KEY | LIST OF FURNISHINGS AND EQUIPMENT

20 lightweight outdoor chairs
Variety of outdoor tables

UT 4848 Lyons View Retreat Center
SBC. No. 540/09-18-2018

1. SPACE REQUIRED

<table>
<thead>
<tr>
<th>Name</th>
<th>Occupancy</th>
<th>Net Square</th>
<th>Unit Square</th>
<th>Gross Square</th>
<th>Space No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balcony</td>
<td>50</td>
<td>1,000</td>
<td>50 at 20 each</td>
<td>1430</td>
<td>20</td>
</tr>
</tbody>
</table>

2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

Relationships:
- a. Contiguous:
- b. Adjacent:
- c. Convenient: Main Assembly Room

Services and Features:
- a. Atmospheric Criteria:
- b. Illumination: Recessed and decorative LED lighting
- c. Electrical: 120 volt convenience outlets
- d. Communications: Wi-Fi
- e. Plumbing: None
- f. Music / Video: Speakers, sound system

3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

This is to welcoming open-air space to be used for breaks and session work with a view to the Tennessee River.

4. KEY | LIST OF FURNISHINGS AND EQUIPMENT

20 lightweight outdoor chairs
Variety of outdoor tables
SECTION FIVE  \  Building Systems Narratives
5.1
APPLICABLE CODES, KEY ISSUES, GENERAL REQUIREMENTS

ASSUMPTIONS
A. The facility is to have a Gross Area of approximately 20,000 GSF including the contiguous outdoor spaces.

B. The program assumes that the existing residence will not be retained although options that involve reusing all or a portion of the existing residence are studies in this document. In the case of reuse of the residence, some of the smaller spaces would be in the existing structure. In the case of reuse, all new mechanical, electrical, plumbing and fire protection systems are to be provided.

RELEVANT CODES EFFECTIVE APRIL 15, 2019
- 2012 International Building Code (Except for Chapter 11 -Accessibility and Chapter 34 --Section 3411, Accessibility for Existing Buildings)
- 2012 International Mechanical Code
- 2008 NFPA 70 – National Electrical Code 2010 ADA Standards for Accessible Design
- 2015 ASME Boiler and Pressure Vessel Code with 2012 CSD1 Amendments
- 2012 International Fuel Gas Code
- Local Zoning ordinances do not apply to State of Tennessee owned facilities.

KEY ISSUES AND REQUIREMENTS

OCCUPANCY CLASSIFICATION
Occupancy Type (IBC 302.1): Assembly Group A-2.

PHYSICAL PROPERTIES
A. Table 503 IBC provides the available areas per floor based upon construction type and maximum height allowed for each construction type based upon occupancy types.

1. Type IA – Unlimited Height; Unlimited Area
2. Type IB – 11 Stories Height (160 feet); Unlimited Area
3. Type IIA – 3 Stories Height (65 feet); 15,500 GSF per floor
4. Type IIIA – 3 Stories Height (65 feet); 14,000 GSF per floor

B. If the building is fully sprinkled, there is an increase in area and height allowed. The maximum height can be increased 1 additional story up to an additional 20’. The floor area can be increased 200% per floor for buildings with more than one story. Additional floor area increase can be acquired for frontage on a public way or open space. Area and height modification are to be determined on an individual design basis.

C. Minimum Construction Type is to be determined on an individual design basis and will be determined by the maximum GSF per floor required and the number of stories needed to meet the program.

SPECIFIC OCCUPANCY REQUIREMENTS
FIRE DEPARTMENT ACCESS

A. The authority having jurisdiction has the power to require access box commonly known as Knox Boxes, to be installed in an accessible area where access to or within a structure is difficult because of security.

B. Approved access roads shall be provided for every facility, building or portion of a building constructed. Fire Department access shall consist of roadways, fire lanes, parking lot lanes or a combination thereof. When fire department access roads cannot be installed due to location on property, topography, waterways, nonnegotiable grades, or other similar conditions, the AHJ is authorized to require additional fire protection features. Fire department access roads shall be provided such that any portion of the facility or any portion of the exterior wall of the first story of the building is not more than 150 feet from fire department access roads as measured by an approved route around the exterior of the facility.

C. Fire department access roads shall extend to within 50 feet of at least one exterior door that can be opened from the outside and provides access to the interior of the building. When the facility is fully sprinklered this distance can be extended to 450 feet.

D. Fire department access roads’ lane width is 15'-0" for one-way traffic and 20'-0" for two-way traffic. A clear height of 13'-6" must be maintain for the access roads.

CODE ISSUES WITH THE RENOVATIONS OF THE EXISTING RESIDENCE AT 4848 LYONS VIEW

If a design option is selected using the existing residence in part or whole, the following code constraints should be considered.

A. The existing original residential structure was built in 1949 under unknown building codes. The stable building appears to be an older structure than the house and was built under unknown or no building code.

B. The current structure will not meet current 2006 IBC or 2006 NFPA 101 Life Safety Codes for public use.

C. It is assumed that this building would meet a Business Occupancy only and if part of an Assembly Group would require separation.

D. It is assumed that this building would be classified as a Type III B, restricting allowable stories to 2.

E. Current stairs are monumental in nature and are not rated.

F. Current egress capacity, door widths, distance apart, dead end corridors, common path of egress, etc. must be reviewed for current code compliance.

G. There is no accessibility from floor to floor.

H. All areas will need to be addressed for handicap accessibility.

I. It is unknown whether there are hazardous materials in the structure.
UTK’s intent that the Project be designed and constructed in accordance with Tennessee High Performance Building Requirements (HPBR) Manual and current “best practice” standards of sustainable development. As design progresses, significant consideration will need to be given to those elements of sustainable design which will result in the most efficient and cost-effective operation and maintenance of the facility’s systems, and measurably enhance the wellbeing of the building users and the campus community. The life-cycle length and costs of these measures, and relevant interactions between the Architectural, Mechanical, and Electrical systems will need to be addressed early in the design process so that University of Tennessee may make decisions with adequate guidance regarding their immediate and long-term costs and benefits.

Sustainable design strategies should be achieved within the first cost constraints of the design and construction budget. Integrated design solutions will shift costs of higher-value measures within the overall construction budget. A life-cycle approach to decision making will lead to synergistic solutions which will both reduce overall first costs and operational costs.

With the possible exception of the requirement for third party commissioning and building energy modeling, the project and UT intends to comply with all the requirements outlined in Tennessee’s HPBR.

REFERENCES
State of Tennessee’s High Performance Building Requirements Manual
http://tn.gov/assets/entities/generalservices/stream/attachments/HPBr_Documents.pdf

State of Tennessee’s current adoption of Energy Code
http://www.energycodes.gov/adoption/states/tennessee

University of Tennessee’s Landscape Vision and Site Standards
http://fs.utk.edu/Site%20Design.pdf
5.3
SITE/CIVIL + UTILITIES

GENERAL NOTE REGARDING UTILITIES
All utilities services to the property are to be designed to provide the ability to add other structures to the property in the future.

WATER SERVICE
Water service to the site is provided by the Knoxville Utilities Board (KUB). Water is located in Lyons View Pike.

SANITARY SEWER
Sanitary sewer service to the site is provided by KUB.

STORM SEWER
The storm sewer system that surrounds this site is maintained by KUB.
Options to mitigate stormwater including the following should be considered during design phases.

EARTHWORK
Based on the option chosen by the design team the amount of earthwork can vary greatly therefore no assumptions have been made on the amount of earthwork or condition of the site.

ELECTRICAL

Electrical service for the project site is coming from Lyons View Pike and is provided by KUB.

TELECOMMUNICATIONS
There is no existing telecommunications service serving this site.
5.4 LANDSCAPE DESIGN

While this site is remote to the UTK campus, landscape design considerations should identify important trees and vegetation and develop a plan that guides the site moving forward. The overall landscape design shall comply with UT’s stated principles of:

- Reinforce the University’s identity with the creation of a thoughtful and creative landscaping plan and with thoughtfully sited buildings.
- Enhance all campus spaces and connections with healthy, well-sited, and well-maintained plantings and turf.
- Augment the integrity and performance of the landscape by employing sustainable practices.
- The following items have been discussed during the programming meetings as will need through investigation during the design phases:
  - Efforts should be made to provide a welcoming environment as people enter and exit the facility.
  - Provide bike rack parking at all major entry doors.
  - Provide a flat location for the erection of a tent large enough to provide space for 200 persons at a location that is convenient to the main Retreat Center. “Plug and play” power shall be available.
- It is probable that the existing driveway will have to be widened to allow for 2-way traffic. The entrance gate will also need to be modified to allow for bus and truck traffic. The wall is a key feature of the property and while being modified shall retain as much of its character as possible.
- Parking for 150 automobiles must be provided. Careful consideration should be given to it location and shielding to not detract from the residential character of the site.
- Thoughtfully use the remarkable site (mature trees, rolling hills, views and access to the Tennessee River/Fort Loudoun Lake) to maximize the site’s use as a Retreat Center.
- Consider the creation of an amphi-theatre.
- Shield outdoor mechanical systems and waste pick up from view.
- Parking for 150 automobiles must be provided. Careful consideration should be given to it location and shielding to not detract from the residential character of the site.

REFERENCES

UTK Landscape Vision and Site Standards
http://fs.utk.edu/masterplan.htm#Site%20Design%20Guidelines
http://fs.utk.edu/Site%20Design.pdf
The construction of the new building envelope has not been determined yet, but it should be made up of substantial, permanent materials and architectural building systems that are compatible with the surrounding residential neighborhood.

The following are acceptable:

- Storefront and curtainwall but shall be limited to achieve a residential character
- Sloped roofs are preferred to achieve a residential character

The following are not allowed on this building:

- Exposed aluminum and other non-copper metallic paneling, roofing, and elements
- Visible cooling towers, generators, chillers, and air handling units
- Clapboard or shingled siding of any kind
- Ribbon windows
- Exposed, vertical concrete and exposed, coated structural steel
- Obviously green or blue glass

GENERAL REQUIREMENTS:

SOUND / ACOUSTICAL CONSIDERATION

Design team shall provide sound/acoustical consideration for meeting rooms. This needs to be reviewed with AV systems and UTK campus standards during design phase.

VERTICAL CONVEYANCE

An appropriately sized passenger elevator is to be provided.

FIRE PROTECTION

SECURITY

A unified system of access control, alarm monitoring and video surveillance shall be provided using electronic security systems. All doors at the building exterior and the main five assembly rooms will be provided with electric strikes with a central override function. All panic hardware door locations shall be capable of central override for campus emergencies.
5.6 ELECTRICAL SYSTEMS

CODES, STANDARDS AND GUIDELINES
A. All electrical systems proposed for this building will be designed in accordance with the National Electrical Code, 2008 Edition, including, but not limited to, the Codes, Standards and Guidelines listed below.
1. 2012 International Building Code
3. 2015 State of Tennessee High Performance Building Requirements
4. The University of Tennessee – Designer’s Manual
5. The most current version of each of these codes and standards will be used to design the project.

FIRE ALARM SYSTEM
A. The fire alarm system shall be a stand-alone, voice-evacuation, fully addressable system as manufactured by Simplex or Edwards (EST).

DOOR ACCESS SYSTEM
A. A door access system shall be provided that shall consist of the following items: Proximity Readers compatible with the UT Cardax System shall control all door access functions.
B. Meeting room doors should be capable to lock from inside the classroom in an active shooter situation.

AUDIO / VISUAL (AV) SYSTEMS
A. The Audio / Visual systems in the meeting rooms shall be designed by the A/V consultant.

TELECOMMUNICATION SYSTEMS STANDARDS
A. Follow the University of Tennessee Knoxville Telecommunications Standards
   http://fs.utk.edu/policies/Communications/CommunicationsGuidelines.pdf
B. Contractor will comply with all state and local codes including:
1. BICSI
2. ANSI 568
3. IEEE 802
4. NFPA-70H
MECHANICAL, PLUMBING, AND FIRE PROTECTION

MECHANICAL SYSTEMS
CODES, STANDARDS AND GUIDELINES
All mechanical systems proposed for this building will be designed in accordance with the International Mechanical Code, 2012 Edition, including, but not limited to, the Codes, Standards and Guidelines listed below.
1. 2012 International Building Code
3. 2015 State of Tennessee High Performance Building Requirements
4. The University of Tennessee – Designer’s Manual

The most current version of each of these codes and standards will be used to design the project.

PLUMBING SYSTEMS
CODES, STANDARDS AND GUIDELINES
All plumbing systems proposed for this building will be designed in accordance with the International Plumbing Code, 2012 Edition, including, but not limited to, the Codes, Standards and Guidelines listed below.
1. 2012 International Building Code
3. 2015 State of Tennessee High Performance Building Requirements
4. The University of Tennessee – Designer’s Manual

The most current version of each of these codes and standards will be used to design the project.

FIRE PROTECTION SYSTEMS
A. The building shall be provided with a standpipe and sprinkler system, hydraulically designed in accordance with NFPA 13 and NFPA 14. Current water supply flow tests shall be obtained from the local water authority to determine the capacity of the water mains. The location of the fire department connection shall be coordinated with the Architect and the Knoxville Fire Marshall. It is generally required that the location be at the first point of response by the fire department.

B. All sprinklers shall be of quick response type. The type of sprinkler used in a particular area shall be selected by the Engineer of Record and the Architect. Generally, concealed sprinklers shall be installed in ceilings of high visibility and quality of finishes. Recessed sprinklers shall be installed in other areas having suspended ceilings.
## PROJECT BUDGET

### Project Parameters

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Sq. Ft. (New Construction)</td>
<td>9,950</td>
</tr>
<tr>
<td>Gross Sq. Ft. (Renovation)</td>
<td>7,400</td>
</tr>
<tr>
<td>Net Sq. Ft. (Outdoor Area)</td>
<td>2,000</td>
</tr>
<tr>
<td>Space Efficiency Factor</td>
<td>56%</td>
</tr>
<tr>
<td>New Construction GSF</td>
<td>14,229</td>
</tr>
<tr>
<td>Total GSF in Renovation and New Construction</td>
<td>23,629</td>
</tr>
<tr>
<td>Outdoor Space Construction GSF</td>
<td>2,860</td>
</tr>
<tr>
<td>Demolition GSF</td>
<td>0</td>
</tr>
<tr>
<td>New Construction Cost/SF (Not including outdoor spaces)</td>
<td>$275</td>
</tr>
<tr>
<td>Renovation Cost/SF</td>
<td>$375</td>
</tr>
<tr>
<td>New Construction Cost/SF (Outdoor spaces)</td>
<td>$200</td>
</tr>
<tr>
<td>New Construction Cost (Not including outdoor spaces)</td>
<td>$3,907,283.40</td>
</tr>
<tr>
<td>Renovation Cost</td>
<td>$2,775,000</td>
</tr>
<tr>
<td>New Construction Cost/SF (Outdoor spaces)</td>
<td>$572,000</td>
</tr>
<tr>
<td>Total Construction/Renovation Cost</td>
<td>$7,254,283</td>
</tr>
</tbody>
</table>

### Bid Target Items

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Cost</td>
<td>$7,254,283</td>
</tr>
<tr>
<td>Site Development</td>
<td>$1,500,000</td>
</tr>
<tr>
<td>Distributed Antenna System (Public Safety Only) Allowance</td>
<td>$50,000</td>
</tr>
<tr>
<td>Stormwater Allowance</td>
<td>$180,000</td>
</tr>
<tr>
<td>Bid Target for High Performance Building Requirements (3% Add)</td>
<td>$217,629</td>
</tr>
<tr>
<td><strong>Sub-Total:</strong></td>
<td><strong>$9,201,912</strong></td>
</tr>
<tr>
<td>Deep Foundations (included in building cost)</td>
<td>$0</td>
</tr>
<tr>
<td>Knoxville Market Contingency</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Bid Target (Based on 2019 Cost):</strong></td>
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### Project Budget - Concept 2 (New Construction with Saving Façade)

**March 13, 2019**

#### Project Parameters

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**Bid Target Items**

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**Below-the-Line Items**

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Assumed Project Schedule:
- Present to SBC in early 2020
- Program in 2019
- Design 2021
- Bid in early 2022
- Open in Fall 2023

---

### Project Budget - Concept 3 (All New Construction)

**March 13, 2019**

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Assumed Project Schedule:
- Present to SBC in early 2020
- Program in 2019
- Design 2021
- Bid in early 2022
- Open in Fall 2023
6.2
SITE TOPOGRAPHIC INFORMATION
6.3
EXISTING BUILDING PLANS
6.4
EXISTING CONDITIONS PHOTOGRAPHS
EXISTING CONDITIONS REPORT
4848 LYONS VIEW PIKE
KNOXVILLE, TENNESSEE

BACKGROUND
Facility Systems Consultants, LLC (FSC) was retained by McCarty Holsaple McCarty (MHM) to provide a mechanical systems review of the subject property. FSC, along with other consultants and representatives of MHM observed the existing conditions of the facility. This report is a cursory review to examine the major systems in relation to their current condition, compliance with the current codes and requirements for renovations under reasonable uses. The property consists of two structures previously utilized in a residential application, a residence and carriage house.

OBSERVATIONS CONCERNING EXISTING CONDITIONS
FSC personnel visited the site on January 29, 2019. No destructive testing evaluations were part of the scope of services. The following general observances were made:

STRUCTURES ON SITE
- No mechanical systems are present in the carriage house. The descriptions herein are relative to the main residence.

HVAC SYSTEMS
- No cooling system is present. A central ventilation fan is located in the attic for some cooling effect.
- The heating system consists of a forced air heating system and radiators. A few electric resistance heaters are also present.
- Heat is produced through an oil fired steam generator located in the basement. This unit is well beyond its anticipated service life and should not be re-used.
- The central air handler is also located in the basement. This is an old belt driven model with a steam coil. This unit is also well beyond its anticipated service life and should not be re-used.
- Ductwork is minimally insulated (as reasonably necessary for heating only) and located throughout mechanical and interstitial spaces. The ductwork appears to be in reasonable condition but lacking modern sealing methods.
- Diffusers are sidewall and ceiling mounted and appear in fair condition. Return grilles are mostly low on the walls.
- Thermostat controls appeared 120V. While they might function, it would be appropriate to replace them due to energy management options with today’s models.
- Radiators are in various locations where forced air system appeared inconvenient by design. These appear in fair condition. Controls are likely not functional.
- Steam piping appeared to be moderately corroded and would likely require replacement if the system were to be rehabilitated. Significant portions of the insulation had also been removed.
- A remote condenser for kitchen freezer is located in the basement. This is an unusual arrangement with modern appliances and likely not repairable/maintainable under current refrigerant environmental regulations.

PLUMBING SYSTEMS
- Water Distribution: Piping is copper where observed. Other piping types may be concealed. While the piping appeared to be in fair condition, due to the facility’s age, the piping should be replaced in any significant renovation.
- Water Heating: The residence is served by an electric water heater located in the basement.
This heater is likely non-functional and should be replaced if the building is put back into use.

- **Sanitary**: The sanitary and vent piping original to the building appears to be cast iron. While piping appeared only mildly corroded, where exposed, this piping should be tested and replaced as necessary upon any renovation or reuse.
- **Natural Gas**: Natural gas was not present but likely available at the property line.
- **Fixtures**: Residential fixtures throughout appeared to be in fair to good condition. These fixtures would likely need replacement seals or other common maintenance if placed back into service. They are not moderate water conserving type.

**FIRE SPRINKLER SYSTEMS**
- No system present on site.

**RENOVATION OR REHABILITATION OPTIONS**

It is not known for certain what purpose/use the inactive facility may be placed into service. For the purposes of this section, we would anticipate residential or educational occupancy. The only reasonably salvageable mechanical components might include; ductwork, diffusers and grilles, sanitary sewer piping (if testing were to find it in good condition) and plumbing fixtures (only reasonable for historic purposes, if desired). Remaining systems should be demolished. The two occupancies are discussed in more detail herein.

**RESIDENTIAL**
- System types for consideration include: split system heat pumps, split system cooling with furnaces and geothermal water source heat pumps. These are in ascending order of cost and efficiency but all reasonable choices for design purposes.
- The highest potential for re-using ductwork would be in a residential occupancy. The ductwork is arranged for a relatively single zone strategy (common for residential), though if desired, some zoning could still take place with dampers or additional equipment. This ductwork would need to be insulated to a level suitable for cooling to not permit condensation.

**EDUCATIONAL**
- System types for consideration include: split system heat pumps, split system cooling with furnaces and geothermal water source heat pumps. These are in ascending order of cost and efficiency but all reasonable choices for design purposes.
- Educational occupancy would likely render the existing ductwork arrangement useless. More zoning would likely be required, the plenum return in the corridor would need to be mitigated and a higher level of ventilation and thus equipment capacity would be necessary.
- Automatic shutdown of AHU’s would likely be necessary (depending on final sizing).
- To meet accessibility standards, significant modification to the restrooms would likely be necessary.
DESCRIPTION OF STRUCTURE

A two-story, single-family house and a horse stable were located on the riverfront property. The house faces northwest and is sited roughly 850 feet south of Lyons View Pike and roughly 325 feet north of the Tennessee River. The 7,400-square foot house was built in the early 1940s with clay brick-cladded exterior walls and a slate, hip roof (Photographs 1 through 8). Small one-story portions with flat roofs are at both ends of the house (Photograph 4).

The first floor is an elevated, cast-in-place concrete, one-way pan joist system, which is supported by the cast-in-place concrete walls of the basement (Photographs 19 and 20). The basement floor is slab-on-grade with its east end at grade level, allowing for a three-car garage. Located on the east side of the house is a driveway surrounded by brick walls between pilasters and a steel-framed staircase up to a first-floor balcony.

Most of the construction of the house was concealed, but exposed framing in the servants' quarters (northeast corner) revealed clay structural terracotta exterior walls with interior stucco cover over the walls and ceiling (Photographs 31 and 32). A portion of the stucco ceiling along the first-floor west corridor had deteriorated away to show the second floor was constructed of a metal deck on steel floor joists supported by a concrete girder (Photographs 25 and 26). Wood framing was used to construct the hip roofs (Photographs 37 and 38). Wrought iron framing supports the south exterior canopy, which is connected to the second-floor roof (Photograph 6).

The horse stable is located in a wooded area southeast of the house, downhill and closer to the Tennessee River. The slate gable roof is constructed of wood framing bearing on clay brick walls.
and wood-framed stall doors (Photographs 39, 43, and 44). Wood joists spanning east-west support the full-length loft wooden floor. A loft door was built on the front west side.

**PHOTOGRAPHS**
Photographs taken during the investigation, which depict the claimed damages, are included as a portion of our report.

**LIMITATIONS**
This investigation is not intended to provide a guarantee or certification of proper future performance of the structure or its components, even if remedial measures are suggested. The detailed examination of every structural member, even where visible, is also beyond the scope of RBA Structural Engineering, LLC's, authorized work. RBA Structural Engineering, LLC, will not assume responsibility for defects in structures designed, built, and supervised by others, or for repairs performed and supervised by others. Rather, the purpose of this investigation is to provide RBA Structural Engineering, LLC’s, opinion concerning the conditions observed based on a limited visual examination. This report is the exclusive property of the University of Tennessee, and has been prepared for the sole purpose of aiding the University of Tennessee in determining the current condition of the property. Compliance with any specifications or code requirements is specifically excluded from this report.

**SCOPE OF INVESTIGATION**
This investigation consisted of a visual observation of the main house structure and the horse stable. Neither the investigation nor the report is intended to cover mechanical, electrical, architectural, or other structural features of the house or horse stable for compliance with applicable codes.

**DISCUSSION**
I conducted a walk-through on January 28, 2019, to observe and document the current condition of the existing house and horse stable located at the stated address. Part of the walk-through was to determine whether further damage had occurred since RBA's previous walk-through performed on October 5, 2006, for McCarty Holsaple McCarty and the University of Tennessee.

During my walk-through, I was accompanied by Jeff Johnson (McCarty Holsaple McCarty), David Bakewell (UT Facilities Planning), and Ted Murphy (UT Facilities Services). Only visual observations were made without any exploratory investigation. Exterior walls clad with clay brick appeared to be in overall good condition; however, several areas of the exterior walls showed signs of deteriorated mortar joints and vegetative growth covered the base of a few walls (Photograph 11).

Wrought iron framing supporting the south canopy, wrought iron balcony railings, and steel framing at the stairs were covered with heavy rust and the protective coatings were peeling away. However, no signs of loss of cross-sectional area were observed based on limited visual observations (Photographs 6, 9, 10, and 12).

A rainwater downspout located on the back west side was bent and its extension was disconnected from the drainage system (Photograph 13).

The concrete foundation walls of the basement appeared to be in good condition with no evident damage. Cracks were observed in the stucco ceiling of the garage, originating from the suspended garage door openers (Photograph 16). Spalled stucco façade with a rusty metal lath and wall stains were evidence of moisture presence in the basement (Photograph 17). No damage was observed in the first-floor concrete pan joist system, which was reviewed through a detached portion of the basement stucco ceiling.

Most of the house construction was concealed and could not be reviewed. Interior walls appeared structurally sound with the stucco façade deteriorating in some areas throughout the house.
Water infiltration was observed in the northeast servants' quarters adjacent to the kitchen and above a doorway to the gallery off the west corridor (Photographs 31 through 34). In the servants' quarters, wooden trim was rotten and the stucco façade metal hat channels were rusting. A portion of the stucco ceiling above the gallery doorway had separated to reveal the second floor construction, which consisted of a metal deck on steel floor joists supported by a concrete girder. Spalls on the bottom side of the concrete girder exposed the bottom flexural steel reinforcing (Photographs 25 and 26).

The ceiling was removed from multiple rooms on the second floor to expose the roof wood framing, which was dry and in good condition. No damage was observed in the visible wood construction of the attic.

The horse stable exterior brick walls, wood gable roof framing, and stall doors appeared to be in good condition. Vegetation now covers most of the north and south ends of the horse stable (Photograph 40). The rainwater gutter system is clogged and has failed (Photograph 41).

**CONCLUSIONS**

Based on the visual observations of this walk-through, both structures were overall structurally sound with a few structural issues requiring remedial actions. Further exploratory investigation is required for areas with water damage, such as the servants' quarters and the west gallery doorway. Causes for water intrusion in these areas should be investigated and resolved to avoid further damage.

We recommend repairing the cracked/deteriorated mortar joints by routing the mortar joints to a depth of 1" with power or hand tools and repointing with mortar. Vegetative growth should be removed from all exterior walls.

We recommend heavy rust and deteriorating protective coatings on all wrought iron and steel framing be removed with a cleaning agent and a wire brush. A metal primer and new protective enamel coating can be applied to all exterior framing after removal of rust and debris. Any guardrail or stair framing that have experienced loss of cross-sectional area (pitting) should be reviewed by a licensed structural engineer.

Extensions should be attached to the gutter downspouts to direct stormwater a sufficient distance away from the exterior clay brick walls. Removing stormwater runoff an adequate distance away from the structure is crucial to extending the lifespan of the building.

The damage to the bottom of the second-floor concrete girder located along the west corridor may be due to corrosion of the primary reinforcement of the beams. The presence of moisture combined with the naturally entrained air found in concrete oxidized the iron in the steel, producing rust and causing the volume of the reinforcement to expand over time. Expanding steel will generate surface pressure sufficient to crack and/or delaminate the concrete exterior faces and bottom edges of the girder. The rate of oxidation is dependent on when the moisture comes in contact with the steel and the amount of oxygen present for the chemical reaction. Reference Appendix A for further repair procedures for the damaged concrete girder. If pitting has occurred in the steel reinforcing to the extent where cross-sectional area is lost, then the degradation of the reinforcing should be reviewed by a licensed structural engineer to determine whether strengthening or further enhancements are required.

Vegetation covering the horse stable will need to be removed. We recommend removal of the vegetation covering the horse stable and replacement of the gutter system.

Respectfully submitted,

RBA STRUCTURAL ENGINEERING, LLC

Joshua Terry Lee
Professional Engineer

January 31, 2019
APPENDIX A

SITE VISIT PHOTOGRAPHS

PROJECT: University of Tennessee – Lyons View Residence
LOCATION: Knoxville, Tennessee
DATE: January 28, 2019

Photograph 1 – North Elevation of House, West End

Photograph 2 – North Elevation of House, East End
**SITE VISIT PHOTOGRAPHS**

**PROJECT:** University of Tennessee – Lyons View Residence  
**LOCATION:** Knoxville, Tennessee  
**DATE:** January 28, 2019

**Photograph 3 – East Driveway Surrounded by Brick Walls**

**Photograph 4 – West Elevation of East One-Story Portion**

**Photograph 5 – West Elevation of House**

**Photograph 6 – South Canopy Supported by Wrought Iron Framework**
SITE VISIT PHOTOGRAPHS

PROJECT: University of Tennessee – Lyons View Residence
LOCATION: Knoxville, Tennessee
DATE: January 28, 2019

Photograph 7 – Southwest Corner View of House

Photograph 8 – East Elevation of House

Photograph 9 – East Steel Stair Framing with Wrought Iron Railing

Photograph 10 – Cantilevered Balcony for East Stairs
SITE VISIT PHOTOGRAPHS

PROJECT: University of Tennessee – Lyons View Residence
LOCATION: Knoxville, Tennessee
DATE: January 28, 2019

Photograph 11 – Typical Exterior Clay Brick Wall with Deteriorated Mortar Joints

Photograph 12 – Cantilevered Balcony on South Wall of House

Photograph 13 – Bent Rainwater Downspout on Back West Side with Disconnected Extension

Photograph 14 – North Concrete Walls of Basement Garage
SITE VISIT PHOTOGRAPHS

PROJECT: University of Tennessee – Lyons View Residence
LOCATION: Knoxville, Tennessee
DATE: January 28, 2019

Photograph 15 – South Concrete Walls of Basement Garage

Photograph 16 – Cracks in Stucco Ceiling of Basement Garage

Photograph 17 – Spalled/Deteriorated Stucco Façade in Basement Wall

Photograph 18 – Typical Condition of Concrete Basement Walls
Photograph 19 – Exposed First Floor’s Concrete Pan Joist System Bearing on Concrete Basement Wall

Photograph 20 – Exposed First Floor’s Concrete Pan Joist System

Photograph 21 – First Floor Main Entryway

Photograph 22 – Main Staircase
SITE VISIT PHOTOGRAPHS

PROJECT: University of Tennessee – Lyons View Residence
LOCATION: Knoxville, Tennessee
DATE: January 28, 2019

Photograph 23 – Main Livingroom or Gallery

Photograph 24 – West Corridor with Detached Stucco Ceiling

Photograph 25 – Second Floor Framing – Metal Deck on Steel Joist Supported by Concrete Girder

Photograph 26 – Spalls Exposing Concrete Girder’s Bottom Flexural Steel Reinforcing
| Photograph 27 – First Floor Study |
| Photograph 28 – Secondary Staircase |
| Photograph 29 – First Floor Room |
| Photograph 30 – Kitchen |
SITE VISIT PHOTOGRAPHS

PROJECT: University of Tennessee – Lyons View Residence
LOCATION: Knoxville, Tennessee
DATE: January 28, 2019

Photograph 31 – Water Damage in Servants’ Quarters at Northeast Corner of House

Photograph 32 – Water Damage in East Wall of Servants’ Quarters

Photograph 33 – Water Damage in Servants’ Quarters at Southeast Corner of Home

Photograph 34 – Water Damage in East Wall of Servants’ Quarters
SITE VISIT PHOTOGRAPHS

PROJECT: University of Tennessee – Lyons View Residence
LOCATION: Knoxville, Tennessee
DATE: January 28, 2019

Photograph 39 – North West Corner View of Horse Stable

Photograph 40 – South Elevation of Horse Stable

Photograph 41 – South East Corner View of Horse Stable

Photograph 42 – Ground Level of Horse Stable
SITE VISIT PHOTOGRAPHS

PROJECT: University of Tennessee – Lyons View Residence
LOCATION: Knoxville, Tennessee
DATE: January 28, 2019

Photograph 43 – Loft Wood Framing Spanning between Brick Walls and Wood-Framed Stall Doors

Photograph 44 – Wood Framing for Gable Roof and Full-Length Loft
ELECTRICAL FACILITIES REPORT
4848 LYONS VIEW PIKE
January 31, 2019

I. INTRODUCTION
As requested, Vreeland Engineers has visited the subject facility to review existing condition of electrical systems. Primary purpose is to update findings recorded in 1998, and to make recommendations for upgrade.

II. EXISTING CONDITIONS

A. POWER SERVICE: Power service for facility is existing at 120/208-volts, single-phase, 3-wire taken from a Knoxville Utilities Board padmounted transformer located to the northeast of the house on the opposite side of the garage entry drive. Existing service capacity is 300-amperes being extended into the main electric room on the basement level adjacent to the garage. Capacity of padmounted transformer is 50-KVA.

Underground primary line originates near the property entrance on Lyons View Drive.

B. POWER DISTRIBUTION: Power distribution within facility consists of several branch circuit panelboards in the facility. These load centers are obsolete and are in the range of between 100 and 60-amps. Typical brand name of load center is Frank Adams Company.

Adjacent to main distribution panel in basement are some dry type transformers, the purpose of which are unknown. Possibly in the past, facility had a two-wire service, and transformers were utilized to provide 120-volts. In any case, transformers are no longer needed.

C. WIRING: Wiring within facility, for the most part, is old and obsolete. Branch circuit wiring does not appear to contain grounding conductors. Much of the existing branch circuit wiring consists of cables with braided fiber-type insulation. Several terminations for branch circuits are knob and tube type, which is now obsolete. Some EMT is utilized.

D. DEVICES: Generally, devices in facility are in very poor condition. Many, not all, are not code compliant in the fact that they do not contain grounding terminals. There is obvious lack of GFCI receptacles, and, of course, the newer required arc fault type circuits are not in place. Further, there are insufficient quantities of receptacles per the National Electrical Code.

E. LIGHTING: Lighting in facility is generally old and will require replacement and upgrade.

F. TELEPHONE SERVICE: Telephone service terminates underground at an above-ground pedestal near the padmounted transformer. Telephone service is extended into the residence. It should be judged in poor condition within building as all wiring appeared to be old.

G. REMOTE BARN BUILDING: At the barn, there was some electrical wiring in place. There appeared to be a 1” conduit entering facility serving a two-circuit Frank Adams load center. Wiring within this facility appeared to be in relatively good condition within EMT raceway and rigid steel conduit. The incoming 1” conduit appears to be rigid steel and likely is not suitable for reuse.

III. RECOMMENDATIONS:

A. POWER SERVICE: For building renovation and upgrade, we would recommend that existing padmounted transformer remain in place and service to facility remain underground at 120/240-volts, single-phase, 3-wire.

B. EXISTING FACILITIES: We would recommend that all wiring in facility be removed as far as practical and that facility be completely rewired. No wiring within residence is deemed suitable for reuse. All panelboards, load centers, etc., should be replaced with new. Existing service entrance conduit may be reused if of sufficient size. Existing meter should be reworked to totally enclose service conductors in and out of the bottom of the meter.

C. POWER DISTRIBUTION: Power distribution within building should be reworked. All load centers should be replaced with new. Concept of using multiple load centers is a good concept for this facility and would minimize lengths of small branch circuits. New circuits to be installed should be in compliance with current National Electrical Code. New wiring within facility should be “NM” type non-metallic sheathed cable with integral grounding conductor. Most 120-volt circuits in building will require GFCI, arc fault protection, or combination of both.

Several additional circuits will be required than exist at this time. Major rewiring will be required in kitchen area due to load requirements and existing code.

D. DEVICES: All devices in facility should be replaced with new grounding type devices. GFCI receptacles should be installed where required by code in kitchen and in all wet locations.

E. LIGHTING: With the exception of some existing period-type fixtures which architect may choose to reuse, we recommend that all lighting be replaced. Any fixtures that are reused should be completely serviced, cleaned, and have all electrical components and
wiring replaced. New lighting in building should be appropriate for style of building. We recommend that existing pole-mounted cobra-head fixtures to south of residence be replaced with fixtures appropriate to style of facility.

F. COMMUNICATION WIRING: We recommend that a new central communications wiring panel be installed, with new service entrance from telephone company. All telephone wiring should be replaced. New outlets throughout building should be installed for voice, data, and TV. Cabling should be Cat 5e and RG-6 coax.

G. SMOKE DETECTION: Combination carbon monoxide/smoke detectors should be installed in accordance with code. All interconnected detectors should be photoelectric, 120-volt with battery backup, with sounder base.

H. REMOTE BARN BUILDING: Install new underground line from residence to building, using Schedule 40 PVC. At building, install new service panel. Rewire building, possibly reusing existing raceway. Install new lighting and devices with GFCI protection.

VREELAND ENGINEERS, INC.