



JASON E. MUMPOWER  
*Comptroller*

## **TENNESSEE STATE SCHOOL BOND AUTHORITY**

**March 28, 2022**

### **AGENDA**

1. Call meeting to order
2. Approval of the Minutes from the TSSBA meeting of February 23, 2022
3. Consideration and approval of the Resolution to Approve the Borrowing of Money by Another Method by the University of Tennessee – Knoxville
4. Consideration and approval of the Resolution to Approve the Borrowing of Money by Another Method by the University of Tennessee - Knoxville
5. Consideration and approval of the Resolution to Approve the Borrowing of Money by Another Method by the University of Tennessee - Southern
6. Consideration and approval of the Resolution to Approve the Borrowing of Money by Another Method by Austin Peay State University
7. Adjourn

**TENNESSEE STATE SCHOOL BOND AUTHORITY**  
**February 23, 2022**

The Tennessee State School Bond Authority (“TSSBA”, or the “Authority”) met on Wednesday, February 23, 2022, at 11:28 a.m. in the Executive Conference Room, State Capitol, Nashville, Tennessee. The Honorable Jason Mumpower, Comptroller of the Treasury, was present and presided over the meeting.

The following members were also present:

The Honorable David Lillard, State Treasurer  
The Honorable Tre Hargett, Secretary of State  
Commissioner Butch Eley, Department of Finance and Administration

The following members participated telephonically as authorized by Tennessee Code Annotated § 8-44-108:

David Miller, proxy for Randy Boyd, President, University of Tennessee  
Danny Gibbs, proxy for Dr. Flora Tydings, Chancellor, Tennessee Board of Regents

The following member was absent:

The Honorable Bill Lee, Governor

Recognizing a physical quorum present, Mr. Mumpower called the meeting to order and asked Ms. Sandi Thompson, Director of the Division of State Government Finance (“SGF”), to call the roll. Ms. Thompson called the roll:

Mr. Miller – Present  
Mr. Eley – Present  
Mr. Lillard – Present  
Mr. Mumpower – Present  
Mr. Hargett – Present  
Mr. Gibbs – Present

Mr. Mumpower stated that the first item on the agenda was the approval of the minutes of the meeting held on January 19, 2022. Mr. Mumpower asked if there were any questions or discussion on the minutes. Hearing none, Mr. Hargett moved approval of the minutes, Mr. Eley seconded the motion, and Ms. Thompson called the roll:

Mr. Gibbs – Aye  
Mr. Miller – Aye  
Mr. Eley – Aye  
Mr. Lillard – Aye  
Mr. Mumpower – Aye  
Mr. Hargett – Aye

The minutes were approved unanimously.

Mr. Mumpower stated that the next item on the agenda was the consideration of a Resolution to Approve the Borrowing of Money by Another Method by the University of Tennessee (“UT”). Mr. Mumpower recognized Mr. Austin Oakes, Assistant Vice President of the Office of Capital Projects at UT, to present the request. Mr. Oakes stated that UT had one request for the Knoxville campus for approval of two lease agreements with The Heights Knoxville and University Park Student Apartments. Mr. Oakes explained that these leases would provide up to 108 beds for one year. The contract would additionally include the option to extend the lease term for up to three one-year periods. Mr. Oakes explained that the lease term would be August 14, 2022, to July 28, 2023, and would include no termination for convenience due to the short-term nature of the lease. Mr. Oakes stated that the average rate per bed would be \$562 per month. Mr. Oakes

stated that if all 108 beds were leased for the entire term proposed, the estimated annual cost would be \$728,784.

Mr. Mumpower asked if there any questions or discussion regarding the request. Hearing none, Mr. Hargett moved approval of the item and Mr. Lillard seconded the motion. Ms. Thompson called the roll:

Mr. Gibbs – Aye  
Mr. Miller – Aye  
Mr. Eley – Aye  
Mr. Lillard – Aye  
Mr. Mumpower – Aye  
Mr. Hargett – Aye

The motion was approved unanimously.

Mr. Mumpower stated that concluded the agenda for the meeting and the only remaining item was a motion to adjourn. Mr. Hargett made a motion to adjourn, Mr. Eley seconded the motion, and Ms. Thompson called the roll:

Mr. Gibbs – Aye  
Mr. Miller – Aye  
Mr. Eley – Aye  
Mr. Lillard – Aye  
Mr. Mumpower – Aye  
Mr. Hargett – Aye

The meeting was adjourned.

Approved on this \_\_\_\_ day of \_\_\_\_\_, 2022.

Respectfully submitted,

Sandra Thompson  
Assistant Secretary

**RESOLUTION TO APPROVE THE BORROWING OF  
MONEY BY ANOTHER METHOD BY THE UNIVERSITY  
OF TENNESSEE**

**Recitals**

Whereas, the University of Tennessee (“UT”), on behalf of its Knoxville campus (“UTK”), has the need for approximately 37,000 square feet of high bay, conditioned space to be used by faculty from both the Tickle College of Engineering and the Herbert College of Agriculture to actively engage in both UTK led research and collaborative research with industry with the space primarily needed for advanced materials and manufacturing research by the Governors Chair in Advanced Composites Manufacturing who also serves as the Director of the Fibers and Composites Manufacturing Facility; and

Whereas, such facility will provide space to grow research and development partnerships, collaborate innovation and talent development for UTK and the State of Tennessee, and serve as an expertise bridge between Oak Ridge National Labs and UTK’s Manufacturing Demonstration Facility; and

Whereas, in 2018 UTK issued a request for proposals seeking to lease this type of space, but no proposals were received and subsequent market surveys in 2018 and 2020 found no space in the Knoxville area that met UTK’s criteria; and

Whereas, in October 2020, the Executive Subcommittee of the State Building Commission approved a request for waiver of advertisement for UT to initiate discussions with a developer so that UT would be able to lease space in a proposed new building at the University of Tennessee Research Park (“UTRP”); and

Whereas, after discussions between UT and Innovation South Partners, LLC (“ISP”), UT and ISP have agreed that ISP will ground lease land in UTRP and build an approximately eighty-four thousand one hundred twenty-five (84,125 +/-) square foot building (referred to as “Innovation South”) and that UT will lease (the “Lease”) approximately thirty-seven thousand (37,000 +/-) square feet of Innovation South (the “UT Space”) while the remaining space would be leased by ISP to private firms and research related entities that would likely partner with UT; and

Whereas, the total estimated construction cost of Innovation South is approximately thirty-two million four hundred thousand dollars (\$32,400,000) which includes eighteen million six hundred thousand dollars (\$18,600,000) to build out the UT Space; and

Whereas, the terms of the Lease include:

- In lieu of traditional monthly rental payments, UT will prepay rent in four installments of approximately four million six hundred six hundred and fifty-four thousand dollars and no cents (\$4,654,000) each, with the final payment on the commencement date of the Lease with the payments being held in escrow at a commercial bank or savings and loan association and only used to provide

funds to satisfy costs of construction, development and other expenses related to UT's portion of Innovation South.

- term of the Lease will mirror ISP's ground lease at UTRP – approximately fifty (50) years with the base term ending December 31, 2072 with an option to extend for an additional forty (40) years (the date the ground lease expires).
- The annual rent is seven dollars and ninety-one cents (\$7.91) per square foot or two hundred ninety-one thousand five hundred and eighty-two dollars and thirty-eight cents (\$291,582.38) per year with two per cent (2%) increases per year in years two through forty (2-40). This rate includes capital replacement of most building systems in years one through forty (1-40) of the Lease. In years forty-one through ninety-one (41-91), the rental rate will be adjusted to reflect UT taking responsibility for all capital replacement in the UT Space. The rent will increase 1% annually during this extended period.
- Common area maintenance (“CAM”) charges, are estimated to be three dollars and seventy-three cents per square foot (\$3.73/sf) or one hundred thirty-seven thousand four hundred and ninety-nine dollars and no cents (\$137,499.00) per year. UT will be responsible for paying its proportionate share of CAM expenses. CAM includes items such as maintenance and repair of common areas of the building, routine parking lot and landscaping maintenance, UTRP CAM charges, trash removal excluding specialty materials, pest control for the entire building, landlord required insurance for the entire building, property management services, security/fire alarm monitoring services for the entire building, and elevator maintenance. These charges will be reconciled annually.
- ISP will provide janitorial service for the office space portion of the UT Space. A one dollar (\$1.00) per square foot cost has been included in the CAM charges, with actual costs to be reconciled annually and UT paying any overage.
- UT will be responsible for janitorial services in the high bay/laboratory space.
- UT will pay all utilities costs including electrical, water, sewer and gas associated with the UT Space.
- UT will be responsible for the payment of property taxes associated with the UT Space, if applicable, as part of the CAM charges.
- In years 1-40 of the Lease ISP is responsible for capital replacement, maintenance and repair of Innovation South and building systems including hvac, roofing, foundation/exterior walls, plumbing, fire alarm and sprinkler system, lighting, electrical systems, doors (hardware and frames), windows, elevators, parking lot and grounds.
- Due to UT's unique use of the UT Space, UT is responsible for the capital replacement, maintenance and repair of the hvac, plumbing, specialty lighting and specialty electrical systems in the high bay/laboratory space.
- ISP is responsible for all non-routine landscaping and parking lot repair.
- In years 41-91, ISP will be responsible for foundation and load bearing walls, non-routine landscaping and parking lot repair/replacement. UT will be responsible for all remaining capital replacement and maintenance and has the option to perform maintenance and repair or reimburse ISP, excluding the fire alarm, sprinkler and security systems which will continue to be maintained and repaired by ISP.
- UT has the right to review and approve design plans for the UT Space. The UT Research Park Design Guidelines will be followed for the overall building design.
- ISP Project lender to hold mortgage on entirety of Innovation South and ground lease.

- The Lease and associated documents contain provisions that address UT’s ability to continue occupancy of the UT Space in the event of default by ISP to its lender.
- As the primary tenant of Innovation South, UT will be granted exterior signage rights proportional to the square footage leased by UT and consistent with UTRP development guidelines.
- Any cost over runs or under runs will be paid/shared by UT and ISP. If the construction costs exceed the estimated guaranteed maximum price (“GMP”), UT and ISP will attempt to reduce the cost through value engineering. If the GMP is greater than five per cent (5%) of the estimated amount, UT may terminate the Lease and pay costs incurred by ISP or seek the appropriate university and state approvals to execute the Lease; and

Whereas, funding for payments of the Lease will be made by UT with funds from Plant Funds (Non-Auxiliary) (A).

**BE IT RESOLVED BY THE TENNESSEE STATE SCHOOL BOND AUTHORITY:**

1. In accordance with the authority provided by Tennessee Code Annotated Section 49-3-1205(11), the Tennessee State School Bond Authority (the “Authority”) gives its approval to UT to enter into the Lease.

BE IF FURTHER RESOLVED that all resolutions or parts of resolutions in conflict are repealed, and the resolution shall be effective as of March 28, 2022.

Adopted by the Authority at its meeting on March 28, 2022.

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JASON E. MUMPOWER, SECRETARY  
TENNESSEE STATE SCHOOL BOND AUTHORITY

## UNIVERSITY OF TENNESSEE

### Acquisition – Lease (Space)

**Requested Action:** Approval of waiver of advertisement

**Transaction Description:** Transaction No. 2020-10-01

- **Proposed Lease**
  - **Location:** University of Tennessee – Knoxville (UTK)  
Knox County – approximately 37,000 sf - UT Research Park, Knoxville TN
  - **Landlord:** Innovation South Partners, LLC (ISP)
  - **Term:** 50 years ending December 31, 2072 with one (1) forty (40) year option to extend
  - **Area/Costs:** See comment section below.
- **Source of Funding:** Plant Funds (Non-Aux) (A)
- **Procurement Method:** Negotiated
- **FRF Rate:** \$18.00/sf (for reference only)

**Comment:** The University of Tennessee – Knoxville has the need for approximately 37,000 square feet of research space that includes a high-bay conditioned area. The space is needed for use by the Governors Chair in Advanced Composites Manufacturing who also serves as the Director of the Fibers and Composites Manufacturing Facility. This facility will provide space to grow research and development partnerships, collaborate innovation and talent development for the university and State of Tennessee, and serve as an expertise bridge between Oak Ridge National Labs and the Manufacturing Demonstration Facility.

In October 2020, ESC granted a waiver of advertisement to begin negotiations with a developer to build that space. ISP plans to construct an approximately 84,000 +/- square foot building at the UT Research Park at Cherokee Farm. UTK would lease approximately 37,000 +/- square feet of the facility and the remainder would be spec space leased by ISP to private companies and research related entities that would likely partner with UTK.

The total estimated construction cost is \$32.4M which includes \$18.6M to build the UTK space. UTK's payments to ISP would include prepaid rent, annual rent costs and common area maintenance (CAM) charges. The prepaid rent would be made in four equal installments of \$4.654M with the final installment made when the certificate of occupancy is issued. The annual rental rate is \$7.91/sf or \$291,582 per year with a 2% annual escalation. CAM charges are estimated to be \$3.73/sf or \$137,499 per year and will be reconciled annually.

Janitorial service for the office portion of UTK's space and all utilities will be provided by ISP and reimbursed by UTK as part of the CAM charge. In years 1-40 of the lease, ISP is responsible for capital replacement, maintenance and repair of the building and all building systems except hvac, plumbing and specialty lighting in the high bay area. Beginning in year 41 of the lease, UTK will be responsible for capital replacement, maintenance and repair for the building and building systems except for the foundation, load bearing walls, fire alarm, fire protection system, security system and the parking lot.

UTK has the right to review and approve the design plans for the UTK space. If the construction costs exceed the estimated guaranteed maximum price (GMP), UTK and ISP

will attempt to reduce the cost through value engineering. If the GMP is greater than 5% of the estimated amount, UTK may terminate the lease and pay costs incurred by ISP or seek the appropriate university and state approvals and execute the lease.

The Recognition Agreement is an exhibit to the ISP Lease, and the document that is signed by UT, UTRF, CFDC, the developer and the developer's lender to grant the University rights with the lender. This document includes edits that are technical, however, we anticipate that the lender may request further edits related to the length of the cure period in Section 8. We ask the SBC to approve further revisions to the Recognition Agreement that 1) cap the timeframe for UT to cure the developer's default before foreclosure and 2) either in addition to or in lieu of the cure rights, grant UT the first right to purchase the note to avoid foreclosure.

**Prior Action:** 10/19/2020 Approval of a waiver of advertisement.

**SSC Report:** 03/14/2021



**University of Tennessee**  
**Lease of space in New Building at the UT Research Park**

**Executive Summary**

**Note:** We are submitting a revised version of the Recognition Agreement related to the Innovation South Partners (ISP) Lease. This document is an exhibit to the ISP Lease, and the document that is signed by UT, UTRF, CFDC, the developer and the developer's lender to grant UT some rights with the lender. The edits that are reflected are technical, however, we anticipate that the lender may request further edits related to the length of the cure period in Section 8. We ask the SBC to approve further revisions to the Recognition Agreement that 1) cap the timeframe for UT to cure the developer's default before foreclosure and 2) either in addition to or in lieu of the cure rights, grant UT the first right to purchase the note to avoid foreclosure.

The language above is noted both on the Lead Sheet and Executive Summary.

The following information is the same as the prior information provided.

**BACKGROUND**

The University of Tennessee-Knoxville (UTK) has the need for approximately 37,000 square feet of high bay, conditioned space to be used by faculty from both the Tickle College of Engineering and the Herbert College of Agriculture to actively engage in both UTK led research and collaborative research with industry. The space is primarily needed for advanced materials and manufacturing research by the Governors Chair in Advanced Composites Manufacturing who also serves as the Director of the Fibers and Composites Manufacturing Facility. This facility will provide space to grow research and development partnerships, collaborate innovation and talent development for the university and State of Tennessee, and serve as an expertise bridge between Oak Ridge National Labs and the Manufacturing Demonstration Facility.

In 2018, an RFP was issued seeking to lease this type of space, but no proposals were received. Subsequent market surveys in 2018 and 2020 found no space in the Knoxville area that met the criteria. In October 2020, the SBC Executive Subcommittee approved a request for waiver of advertisement to initiate discussions with a developer to lease space in a proposed new building at the UT Research Park (UTRP) referred to as Innovation South. A program for UTK's space need was developed and the University entered into discussions with Innovation South Partners, LLC (ISP).

ISP will ground lease land in UTRP and build an 84,125 +/- square foot building. UTK will lease 37,000 +/- square feet of the building and the remaining space would be leased by ISP to private firms and research related entities that would likely partner with UT. The total estimated construction cost is approximately \$32.4M, which includes \$18.6M to build out the space that UTK will lease.

UTK's payments for the space would include prepaid rent, annual rent costs and CAM charges. UTK would also assume some maintenance and repair responsibilities. The term is approximately 50 years, ending December 31, 2072 with an option to renew for an additional 40 years. This term runs

concurrently with ISP's ground lease at UTRP. Under the ground lease, the building will revert back to the University at the end of the extension option.

## **SUMMARY OF PROPOSED LEASE AGREEMENT**

The developer, Innovation South Partners, LLC (ISP), will ground lease land at the UT Research Park for the development of a 84,125 square foot facility referred to as Innovation South, with approximately 37,000 +/- sf of high bay/laboratory/office space to be occupied by UTK and 47,00 +/-sf of spec space that will be leased to future tenants, including a small retail component.

### **Rent and CAM Charges**

- In lieu of traditional monthly rental payments, UTK will prepay rent in four installments of approximately \$4.654M each, with the final payment on the Commencement Date of the lease. The payments will be held in escrow at a commercial bank or savings and loan association and only used to provide funds to satisfy costs of construction, development and other expenses related to UTK's portion of the building.
- The annual rent is \$7.91 per square foot or \$291,582.38 with 2% increases per year in year 1-40. This rate includes capital replacement of most building systems in years 1-40 of the lease (see details below). In years 41-91, the rental rate will be adjusted to reflect UTK taking responsibility for all capital replacement in the UTK space. The rent will increase 1% annually during this extended period.
- CAM charges, as outlined below in more detail, are estimated to be \$3.73/sf or \$137,499 per year. These charges will be reconciled annually.

### **Term**

- Lease term will mirror ISP's ground lease at UTRP – approximately fifty-one (50) years with the base term ending December 31, 2072 with an option to extend for an additional forty (40) years (the date the ground lease expires).

### **Janitorial/Utilities/Taxes**

- ISP will provide janitorial service for the office space. A \$1.00 per square foot cost has been included in the CAM charges, with actual costs to be reconciled annually and UTK paying any overage.
- UTK will be responsible for janitorial services in the high bay/laboratory space.
- UTK will pay all utilities costs including electrical, water, sewer and gas associated with its portion of the building.
- UTK will be responsible for the payment of property taxes associated with its portion of the building, if applicable, as part of the CAM charges.

### **Capital Replacement, Maintenance and Repair**

- In years 1-40 of the lease and except as noted in the following bullets, ISP is responsible for capital replacement, maintenance and repair of the building and building systems including hvac, roofing, foundation/exterior walls, plumbing, fire alarm and sprinkler system, lighting, electrical systems, doors (hardware and frames), windows, elevators, parking lot and grounds.

- Due to UTK’s unique use of the space, UTK is responsible for the capital replacement, maintenance and repair of the hvac, plumbing, specialty lighting and specialty electrical systems in the high bay/laboratory space.
- ISP is responsible for all non-routine landscaping and parking lot repair.
- In years 41-91, ISP will be responsible for foundation and load bearing walls, non-routine landscaping and parking lot repair/replacement. UTK will be responsible for all remaining capital replacement and maintenance and has the option to perform maintenance and repair or reimburse ISP, excluding the fire alarm, sprinkler and security systems which will continue to be maintained and repaired by ISP.

**Common Area Maintenance**

- UTK will be responsible for paying its proportionate share of CAM expenses. CAM includes items such as maintenance and repair of common areas of the building, routine parking lot and landscaping maintenance, UTRP CAM charges, trash removal excluding specialty materials, pest control for the entire building, landlord required insurance for the entire building, property management services, security/fire alarm monitoring services for the entire building, and elevator maintenance.

**Cost Summary (cost to UTK)**

	<b>Cost/SF</b>	<b>One-time or Annual Cost</b>
Prepaid Rent*	\$505/sf	\$18,617,986 (one-time)
Annual Rent	\$7.91/sf	\$291,582.38/year
CAM	\$3.73/sf	\$137,499/year
Utilities	TBD	TBD
Capital replacement, maintenance and repair of hvac, plumbing, specialty lighting and specialty electrical in high bay/lab space	TBD	TBD
Janitorial (High Bay/ Laboratory only)	TBD	TBD
Property Taxes, if applicable	TDB	TBD

**Other Key Terms**

- The University has the right to review and approve design plans for the UTK space. The UT Research Park Design Guidelines will be followed for the overall building design.
- ISP Project lender to hold mortgage on entire building and ground lease.
- The lease and associated documents contain provisions that address UTK’s ability to continue occupancy of its portion of the building in the event of default by ISP to its lender.
- As the primary tenant in the building, UTK will be granted exterior signage rights proportional to the square footage leased by UTK and consistent with UTRP development guidelines.
- Total design and construction cost estimates for the building are \$32.4M with an estimate of \$18.6M for UTK’s portion. Any cost over runs or under runs will be paid/shared by UTK and ISP.

If the construction costs exceed the estimated guaranteed maximum price (GMP), UTK and ISP will attempt to reduce the cost through value engineering. If the GMP is greater than 5% of the estimated amount, UTK may terminate the lease and pay costs incurred by ISP or seek the appropriate university and state approvals and execute the lease.

AGENCY:

ALLOTMENT CODE:

COST CENTER:

This Instrument Prepared By:

University of Tennessee  
Real Property & Space Administration  
5723 Middlebrook Pike  
Knoxville, TN 37996

LE NO.

DRAFT

State is Tenant

**NOTE:** No handwritten or interlineated changes to this Lease will override the printed text of this Lease. This lease document is not effective or binding unless approved in accordance with all applicable laws.

**LEASE**

1. Date of this Lease: _____  Name and Address of Building: _____ _____ _____	2. Tenant: <b>University of Tennessee</b>  <b>Landlord Name and Address:</b> <b>Innovation South Partners, LLC</b> <b>520 W. Summit Hill Drive, Suite 603</b> <b>Knoxville, TN 37902</b>
3. Leased Premises: space in the Building as identified herein and more particularly described on <u>Exhibit B</u> together with all Common Areas, including, without limitation, parking.	4. Rentable Square Feet: <b>approximately 36,863, a portion of the building totaling approximately 84,125 square feet</b>
5. Term of Lease: 50 year(s). The initial 50-year term is sometimes hereinafter referred to as the "Base Term." Commencement Date of Lease Term (and of the obligations hereunder): <u>See Exhibit C</u> . Tenant shall have the option to extend the Lease Term on the terms and conditions set forth in <u>Exhibit C</u> . If no fixed Commencement Date is inserted, the Commencement Date shall be set pursuant to <u>Exhibit C</u> .	6. Termination for Convenience: None

**Monthly Rental Installments Table**

<u>Lease Year(s)</u>	<u>Annual Rental</u>	<u>Monthly Rental Installments</u>	<u>Rental Rate Per Rentable Square Foot</u>	
1	\$291,582.38	\$24,298.53	\$7.91	
2 - 40	Common Area Maintenance \$137,499.00 Annual Rent for each Lease Year will increase by 2% over the previous year's rent	\$11,458.25 (estimated)	\$3.73/sf (estimated)	Actual cost to be reconciled annually
41 - 91	Common Area Maintenance Annual Rent for each Lease Year shall be as shown on <u>Exhibit G</u> attached hereto and incorporated herein by reference Common Area Maintenance	Actual cost to be reconciled annually	See attached Exhibit G	

**8. Utilities & Services:**  
 All utilities are not included in the Monthly Rental Installments.  
 The following utilities are not included in the Monthly Rental Installments: \_\_\_\_\_  
 Tenant is solely responsible for payment of the following separately metered utilities:  electric  gas  water/sewer  all other

Janitorial services are included in the Common Area Maintenance expenses as described in Sections 3(B) and (3)(E) of Exhibit A. Annually, the scope and cost of such janitorial services shall be reviewed by the parties. A \$1.00/psf allowance has been included in the Common Area Maintenance expenses described in Exhibit E, Section 2 for janitorial services in Tenant's Office Space, as defined below.

9. **Improvements (check any that apply):** Leasehold Improvement Allowance: \$0.00 per Rentable Square Foot  
 A. Existing Space (New Tenant or Renewal)  B. Landlord to build out space pursuant to plans and specifications to be developed and approved by Tenant. The plans shall be based on Tenant's Program Document created by Lord Aeck Sargent dated May 11, 2021, a copy of which is attached hereto as Exhibit H.

Deleted: April 16

10.  This Lease is a sublease pursuant to that certain Ground Lease dated effective as of \_\_\_\_\_, 2022 by and between Cherokee Farm Development Corporation, as Landlord, and Innovation South Partners, LLC, as subtenant. If not checked, this paragraph is not applicable.

11. Attached hereto and incorporated herein for all purposes are the following additional exhibits:  
Exhibit A -- Lease Standard Terms and Conditions; Exhibit B -- Floor Plan; Exhibit C -- Commencement Date; Exhibit D -- Buildout Terms; Exhibit E -- Additional Terms; Exhibit F -- Schedule of Expenses; Exhibit G -- Schedule of Rent Payments; Exhibit H -- Tenant's Program Document; Exhibit I -- Recognition Agreement; Exhibit J -- Innovation South Project -- Estimated Project Costs of Leased Premises; Exhibit K -- Reimbursable Expenses; Exhibit L -- Landlord's Project Schedule

12. For purposes of this Agreement, the terms "High Bay Space" and "Office Space" shall be defined as that space designated as High Bay Space or Office Space in the Plans as defined in Exhibit D. The Plans shall be based on the Tenant's Program Document created by Lord Aeck Sargent dated May 11, 2021. The term "High Bay Space" includes any and all laboratories as shown on the Plans.

Deleted: April 16, 2021

LANDLORD: INNOVATION SOUTH PARTNERS, LLC	TENANT: UNIVERSITY OF TENNESSEE
By: _____	By: _____
Title: _____	Title: _____
Date: _____	Date: _____
Name: _____	Name: _____

(Notary Acknowledgements Attached)

**LANDLORD NOTARY**

STATE OF TENNESSEE  
COUNTY OF KNOX

Before me, \_\_\_\_\_, Notary Public in and for the County and State aforesaid, personally appeared \_\_\_\_\_, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who upon oath acknowledged himself/herself to be the \_\_\_\_\_ of \_\_\_\_\_, the within named Landlord, and that he/she as such \_\_\_\_\_ executed the within instrument for the purposes therein contained by signing the name of the entity by himself/herself as such \_\_\_\_\_.

Witness my hand and seal at office in \_\_\_\_\_, Tennessee, on this the \_\_\_\_ day \_\_\_\_\_, 202-\_\_.

\_\_\_\_\_  
Notary Public

My Commission Expires:

\_\_\_\_\_  
[ seal ]

**TENANT NOTARY**

STATE OF TENNESSEE  
COUNTY OF KNOX

Before me, \_\_\_\_\_, Notary Public in and for the County and State aforesaid, personally appeared Austin Oakes, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who upon oath acknowledged himself to be Assistant Vice President for the University of Tennessee, the within named Tenant, and that he as such representative, executed the foregoing instrument for the purposes therein contained and signed the name of the University of Tennessee, by himself as Assistant Vice President for the University of Tennessee.

Witness my hand and seal, at office in Knoxville, Tennessee, this the \_\_\_\_ day of \_\_\_\_\_, 202-\_\_.

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_

\_\_\_\_\_  
[ seal ]



EXHIBIT A

*University of Tennessee is Tenant*

**NOTE:** No handwritten or interlineated changes to this Lease will override the printed text of this lease.

In consideration of the mutual covenants and representations set forth in the Lease (the "Lease") and other good and valuable consideration, the receipt of which is hereby acknowledged, the parties do hereby agree as follows. The capitalized terms used in this Exhibit A shall have the meaning assigned to such terms in the Lease, unless another meaning is assigned to such terms in this Exhibit A.

1. **DEMISE.** Upon the terms and conditions hereinafter set forth and as set forth in the Lease, Landlord does hereby lease to Tenant, and Tenant does hereby lease from Landlord, the Leased Premises for the Term of the Lease. Landlord represents and warrants to Tenant that Landlord is the ground lessee of the Leased Premises and has the right to lease the Leased Premises to Tenant pursuant to the terms of the Lease. Landlord further represents and warrants to Tenant that there are no easements, covenants, restrictions or other agreements or instruments encumbering the Leased Premises other than the covenants and restrictions of the Cherokee Farm Development of record in the Office of the Register of Deeds for Knox County, Tennessee, that (i) contain any pre-approval rights relating to this Lease (including any lender approval rights) which have not been secured by Landlord, or (ii) would interfere with or restrict Tenant's ability to use the Leased Premises for a Permitted Use, as defined in Exhibit E, Section 9 (the "Permitted Use"). Landlord further represents and warrants to Tenant that (x) the use of the Leased Premises contemplated by Tenant is permitted under all applicable zoning legal requirements and (y) all utilities necessary for the use of the Leased Premises for the uses contemplated by Tenant will be supplied to the Building via public utilities.

Tenant acknowledges and agrees that the use and occupancy of the Leased Premises by Tenant is subject to terms of the covenants and restrictions of the Cherokee Farm Development of record in the Office of the Register of Deeds for Knox County, Tennessee.

Tenant further acknowledges that Landlord is the ground lessee of the property on which the Building is located pursuant to the terms of a Ground Lease by and between Innovation South Partners, LLC, as subtenant Landlord and Cherokee Farm Development Corporation as Landlord. Tenant further acknowledges that the property on which the Building is located is subject to various other ground leases and master leases as more specifically described in the Memorandum of Ground Lease dated as of \_\_\_\_\_ between Cherokee Farm Development Corporation and Cherokee Farm, GP, of record as Instrument No. \_\_\_\_\_ in the Office of the Register of Deeds for Knox County, Tennessee. Tenant acknowledges and agrees that its use and occupancy of the Leased Premises is subject to the terms of all such underlying leases.

2. **RENT.** The Monthly Rental Installments for the Lease of the Leased Premises shall be payable in arrears on the last day of each and every month during the Term hereof to Landlord at Landlord's address as set forth on the Lease, provided Landlord has submitted a completed ACH Form (as defined below) to Tenant. Landlord shall not invoice Tenant for monthly rental, CAM charges or any other services until Landlord has completed this form and submitted it to Tenant. The Monthly Rental Installments shall be prorated for any partial calendar month during the Term.

No payment shall be made by Tenant under this Lease until Tenant has received the following documentation properly completed:

1. Landlord shall complete, sign and present to Tenant an "Authorization Agreement for Automatic Deposit (ACH Credits) Form" provided by Tenant. By doing so, Landlord acknowledges and agrees that, once said form is received by Tenant, all payments to Landlord, under this or any other contract Landlord has with Tenant shall be made by Automated Clearing House (ACH) or such other method as may be agreed upon by the parties.

2. Landlord shall complete, sign and present to Tenant a "Substitute W-9 Form" provided by Tenant. The taxpayer identification number detailed by said form must agree with Landlord's Federal Employer Identification Number or Tennessee Edison Registration ID referenced in this Lease.

3. **MAINTENANCE OBLIGATIONS OF THE PARTIES.**

A. Utilities:

Utilities are not included in the Monthly Rental Installments. Tenant shall be responsible for the payment of all costs of utility usage in the Leased Premises.

B. Maintenance

(i) Years 1-40 of Lease

(a) Office Space

Except as provided below, in years 1 through 40 of the Lease, Landlord shall, as required to keep the Office Space in a good, attractive and safe condition, maintain and repair, in a good and workmanlike manner and in compliance with all replacement and maintenance schedules followed by prudent landlords of commercial buildings, (i) the Building, including, but not limited to, the repair, maintenance and replacement of the roof, foundation and exterior and load-bearing walls; (ii) the mechanical, plumbing and electrical systems, including, but not limited to, air conditioning, heating, plumbing, wiring and piping and all filters, valves and other components excluding specialty lighting or damage to or resulting from equipment provided by or damaged by Tenant; (iii) elevators, (iv) fire alarm and sprinkler systems, (v) lighting fixtures, including but not limited to, replacement of lighting bulbs, and (vi) doors, door hardware and frames and windows. Landlord shall also furnish and maintain appropriate outside trash and refuse receptacles for the disposal of trash and refuse from the Office Space.

(b) High Bay Space

Except as provided below, in years 1 through 40 of the Lease, Landlord shall, as required to keep the High Bay Space in a good, attractive and safe condition, maintain and repair, in a good and workmanlike manner and in compliance with all replacement and maintenance schedules followed by prudent landlords of similar space type, (i) the Building, including, but not limited to, the repair, maintenance and replacement of the roof, foundation and exterior and load-bearing walls; (ii) lighting fixtures, including bulbs, but excluding specialty lighting or damage to or resulting from equipment provided or damaged by Tenant; (iii) elevators, (iv) fire alarm and sprinkler systems and (v) doors, door hardware and frames and windows.

The obligations of Landlord pursuant to this Section 3(B)(i)(b) shall not include maintenance, repair or replacement of the mechanical or plumbing systems, including, but not limited to, air conditioning, heating, plumbing, piping and all filters, valves and other mechanical and plumbing components, serving the High Bay Space.

If requested by Tenant, Landlord will provide an estimate of its charges to continue to provide the maintenance services described in Section 3(B)(i) after year 40 of the Lease Term and Tenant may request Landlord to continue to provide the maintenance, repair and renewal for these items and pay such charges as requested by Landlord. Landlord shall have no obligation to provide such services after the expiration of the 40<sup>th</sup> year of the Lease Term.

(ii) Years 41 through Expiration or Earlier Termination of Lease

(a) Except as specifically provided in this Section, Landlord's obligations set forth in Section 3(B)(i) relating to the Building and Leased Premises, including the roof, HVAC equipment, plumbing fixtures, lighting fixtures, doors, and windows shall expire beginning on the first day of the forty-first (41<sup>st</sup>) year of the Lease Term. From and after such date, Landlord shall have no obligation to maintain or otherwise contribute to the cost of such maintenance or capital item replacement and such cost shall be the sole and exclusive obligation of Tenant.

(b) Beginning in the 41<sup>st</sup> year of the Lease Term, Landlord's obligations relating to the repair or maintenance of the Building and the Leased Premises shall be the repair or maintenance of the foundation and exterior and load bearing walls, non-routine landscaping and parking lot repair and replacement.

(iii) Building Exterior/Grounds/Parking/Landscaping

Throughout the Term of the Lease, Landlord shall, as required keep the exterior of the Building and the land upon which the Building is located in a good, attractive and safe condition, maintain and repair, in a good and workmanlike manner, including any landscaped areas, parking areas and driveways including, but not be limited to the following: routine lawn cutting during the growing season, debris pick-up, leaf removal, mulching of planting beds, routine maintenance of any landscaping, daily snow and ice removal from parking areas and entrances to the Leased Premises. Landlord shall also furnish and maintain appropriate outside trash and refuse receptacles for the disposal of trash and refuse from the Leased Premises. Tenant will reimburse Landlord for the actual costs of the routine maintenance and repair

services described above through the CAM charge with actual costs to be reconciled annually. Landlord shall be responsible for the cost of capital improvements provided by Landlord pursuant to this subsection (iii).

(iv) Applies to the Leased Premises

Throughout the term of the Lease, Landlord shall have maintenance personnel available to respond to maintenance requests within 24 hours or a reasonable period of time; provided, however, all reasonable efforts shall be made to respond within 24 hours. "Emergency" repair or maintenance calls shall include, but not be limited to, situations involving HVAC, electrical, plumbing, roof leaks, utility disruptions, ingress and egress, and environmental issues. Subject to the prior written approval of Landlord, Tenant shall be permitted to maintain, inspect, repair and replace any equipment or fixtures installed by Tenant on the Leased Premises (the "Tenant Maintenance").

(v) Schedule of Expenses

Exhibit F attached hereto and incorporated herein by reference sets forth a summary of the responsibility of the parties for certain repair and maintenance obligations and certain other expenses and a description of certain expenses which shall be considered CAM charges. In the event of an inconsistency between the terms of this Lease and Exhibit E, the terms of Exhibit F shall control.

C. Insurance

Landlord shall obtain and maintain during the Lease Term insurance against claims for injury to persons or damage to property which may arise from or in connection with the performance of the work hereunder by the contractor, its agents, representatives, employees, or subcontractors.

**Limits Required**

Landlord shall carry the following minimum limits of liability:

Workers Compensation (WC):	
Each Accident	\$ 100,000
Disease, each employee	\$ 100,000
Disease, policy limit	\$ 500,000
Commercial General Liability (CGL):	
Each Occurrence Limit	\$ 1,000,000
Damage to Rented Premises – Ea. Occ.	\$ 300,000
Medical Expense – any one person	\$ 10,000
Personal & Advertising Injury Limit	\$ 1,000,000
General Aggregate Limit	\$ 2,000,000
Products/Completed Ops. Aggregate Limit	\$ 2,000,000
Automobile Liability	
Combined Single Limit	\$ 1,000,000
Umbrella Liability/Excess Liability	
Each Occurrence Limit	\$ 5,000,000
General Aggregate Limit	\$ 5,000,000

**Builder's Risk Insurance:**

The Landlord shall purchase and maintain, or cause the general contractor responsible for the construction of the Building to purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the project is located, builders risk insurance in the amount of the initial contract amount plus values of subsequent modifications, change orders, and loss materials supplied or installed by others comprising the value of the entire project at the site on a replacement cost basis without optional deductibles. Such builders risk insurance shall be maintained, unless otherwise provided in the contract documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until the Commencement Date as defined in Exhibit C, has been achieved. The builders risk

**Deleted:** Substantial Completion

insurance shall include interests of The University of Tennessee, the general contractor, subcontractors, and sub-tier contractors in the project.

The builder's risk insurance shall specifically include physical loss or damage to all aspects of the **Building**, materials, and equipment whether incorporated into the **Building**, in transit, or stored on or off **Building site**.

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The builders risk coverage shall be written on a Special Covered Cause of Loss form and shall include theft; vandalism; malicious mischief; collapse; false-work; temporary buildings; transit; debris removal, including demolition; increased cost of construction; architect's fees and expenses; soft costs; flood, including water damage; earthquake; and, if applicable, all below and above ground structures; piping; foundations, including underground water and sewer mains; piling, including the ground on which the structure rests; and excavation, backfilling, filling, and grading.

Insured property shall include portions of the work located away from the site but intended for use at the site and shall also cover portions of the work in transit. The policy shall cover the cost of removing debris, including demolition as may be made legally necessary for the operation of any law, ordinance, or regulation.

The builders risk shall include Permission to Occupy or a Beneficial Occupancy Clause. The policy shall specifically permit occupancy of the building during construction. The Landlord shall take reasonable steps to obtain consent of the insurance company and delete any provisions with regard to restrictions within any Occupancy Clauses within the Builders Risk Policy. The builders risk policy shall remain in force until the acceptance of the project by The University of Tennessee.

Equipment breakdown coverage (boiler and machinery) shall be included as required by the contract documents or by law, which shall specifically cover insured equipment during installation and testing, including cold and hot testing.

The deductible shall not exceed \$10,000.

On the Commencement Date, the following property insurance is required:

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1. Property insurance shall be written on a Covered Cause of Loss-Special Form, replacement cost coverage, including coverage for flood and earth movement.

2. The University of Tennessee shall be named as an additional insured on property coverage for the Term of Lease.

#### All Policies

- ◆ [Must be written on a primary, non-contributory basis with any other insurance coverages and/or self-insurance carried by The University of Tennessee.]
- ◆ Must include a Waiver of Subrogation Clause.
- ◆ Must include a Separation of Insureds (Cross Liability) Clause

**Notice of Cancellation:** Each insurance policy required by the insurance provisions of this Lease shall provide the required coverage and shall not be suspended, voided, or canceled except after thirty (30) days' prior written notice has been given to The University of Tennessee, except when cancellation for non-payment of premium; then thirty (30) days' prior notice may be given. Such notice shall be sent directly to:

The University of Tennessee Office of Risk Management  
5723 Middlebrook Pike, Ste. 218  
Knoxville, TN 37996  
riskmanagement@tennessee.edu

During any period when it is in possession of the Leased Premises and throughout the Term of this Lease and any renewal or extension term thereof, Tenant will maintain the following insurance:

1. "All Risk" property insurance on the Tenant's personal property and trade fixtures and other fixtures in the Leased Premises and property for which Tenant is expressly responsible under this Lease in an amount equal to full replacement costs.
2. The University, as an agency of the State of Tennessee, is self-insured under the Tennessee Claims Commission Act, Tenn. Code Ann. §§ 9-8-301 et seq., which covers certain tort liability for actual damages of up to \$300,000 per claimant and \$1,000,000 per occurrence. The State of Tennessee self-insures the University's exposures in general liability, automobile liability, professional malpractice and workers compensation. The limits of liability under workers' compensation are those set forth in Tenn. Code Ann. §§ 50-6-101 et seq.
3. Tenant will deliver to Landlord promptly upon request certificates of insurance showing that the required insurance is in force.

D. Taxes

Landlord shall be responsible for payment of all real estate taxes assessed against the Building or land on which the Building is located, as well as all applicable local, state and federal income taxes which are or may be payable by Landlord. Landlord, by virtue of leasing property to Tenant, does not become a State of Tennessee agency, entity, or employee and is not entitled to any rights, privileges or immunities pertaining to the State or its agencies and instrumentalities. Annually, Landlord will provide proof of property tax payment for the Building to Tenant. Tenant shall reimburse Landlord for Tenant's proportionate share of all real estate taxes assessed against the Building or the land on which the Building located.

E. Janitorial

Subject to the terms of Section 8 of the Lease and Section 4(A) of Exhibit A, janitorial services to the Office Space are provided by Landlord. Landlord shall provide janitorial services to the Office Space in accordance with the following schedule:

- i. Daily: Dust all furniture, counters, cabinets and window sills; sweep and/or vacuum all floors; empty all wastebaskets and ashtrays; dispose of all rubbish; clean and maintain in sanitary condition all restrooms and plumbing fixtures; sweep sidewalks, stairways and halls; and stock supplies.
- ii. Weekly: Mop all floors and dust all Venetian blinds; and vacuum carpets, if any.
- iii. Quarterly: Strip and wax all floors, if not carpeted.
- iv. Semi-Annually: Wash all windows, venetian blinds, light fixtures, walls and painted surfaces and clean all carpeted areas via commercial hot water extraction or commercial chemical dry cleaning.

A \$1.00 per square foot allowance is included in the CAM charge. Annually, Landlord and Tenant will reconcile actual costs incurred by Landlord for janitorial services and Tenant will reimburse Landlord for actual costs that exceed this allowance. If actual costs are less than the allowance, Landlord will reimburse Tenant for the actual amount of the overpayment.

F. Pest Control

Landlord shall provide monthly interior and quarterly exterior pest extermination services. All such services shall be performed after normal business hours.

- G. Common Area Charges. Landlord's expenses described in Section 3 and specifically referenced as Common Area expenses and as shown on Exhibit F shall be considered common area expenses and included in the actual costs of maintaining and operating the Common Areas pursuant to Exhibit E, Section 2. Tenant shall only be responsible for those charges associated with the Leased Premises and Tenant's proportionate share of Common Areas of the Building.

4. TENANT'S OBLIGATIONS. In addition to the said rent to be paid, Tenant also agrees to pay directly during the term of the Lease, commencing on the Commencement Date, the following items of expense as the same become due and payable:

- A. The cost and expense to keep the interior of the High Bay space clean, maintaining suitable receptacles for trash and refuse, and removing from the interior of the laboratories and high bays all accumulations of trash and refuse.

- B. The monthly usage costs of all separately metered utilities supplied to the Leased Premises.
- C. All service costs and installations of all telephone or data services.
- D. In Years 41 through the termination of the Lease Term, the repair and maintenance obligations set forth in Section 3(B)(i)(b). but excluding the obligations set forth in Section 3(B)(ii)(b).

5. IMPROVEMENTS. Tenant shall have the right during the existence of the Lease to make alterations, attach fixtures and erect additions, structures or signs in or upon the Leased Premises, only with Landlord's prior written approval, which shall not be unreasonably withheld. Such fixtures, additions, structures or signs so placed in or upon or attached to the Leased Premises under the Lease shall be and remain the property of Tenant and may be removed therefrom by Tenant prior to the termination or expiration of this Lease or any renewal or extension thereof, or within a reasonable time thereafter and Tenant shall be responsible for and shall reimburse Landlord for the cost of any damages to the Leased Premises as a result of such removal, normal wear and tear excluded. Notwithstanding the foregoing, Tenant shall have the right to install, at Tenant's expense, exterior signage in a percent of the total area of signage allowed under such ordinances or other governmental restrictions based on the ratio of the square footage of the Leased Premises to the total Building square footage. Tenant agrees to maintain such signs or advertising material in good condition and repair. All signs shall comply with applicable ordinances or other governmental restrictions, the terms of the covenants and restrictions of the Cherokee Farm Development of record in the Office of the Register of Deeds for Knox County, Tennessee and the determination of such requirements and the prompt compliance therewith shall be the responsibility of Tenant.

6. TERMINATION FOR CAUSE. Tenant may in its sole discretion terminate this Lease at any time in the event of a default by Landlord which is not remedied in accordance with Section 8 hereof.

7. ENVIRONMENTAL PROVISIONS. Following due inquiry, Landlord represents that to the best of its knowledge there are no hazardous substances or hazardous wastes as defined by the Comprehensive Environmental Response and Liability Act or any hazardous wastes as defined by the Resource Conservation and Recovery Act, or any mold, PCB's, radon or asbestos containing materials, located on, in or about the Leased Premises to be occupied by Tenant. Landlord agrees that should any hazardous wastes, hazardous substances, mold, PCB's, radon or asbestos containing materials be determined to be present as a result of the acts or omissions or negligence of Landlord, Landlord shall indemnify, hold harmless and defend Tenant from all claims, damages, expenses or litigation resulting from the presence of such materials. If Tenant reasonably believes that hazardous substances may be present in the Leased Premises or the Building, Landlord will engage, at its expense, a qualified third party engineer to conduct an appropriate environmental survey. If hazardous substances are found or such survey indicates a risk of such hazardous substances being present in the Leased Premises or Building, then Landlord, at its expense, will make all necessary changes and/or corrections so that the Building and/or the Leased Premises are in compliance with all environmental laws and regulations. If hazardous substances are not found or such survey indicates no risk of such hazardous substance being present in the Leased Premises or Building, then Tenant shall reimburse Landlord for all costs relating to or arising out of such environmental survey. In the event Landlord discovers hazardous materials on the Leased Premises during the Term of this Lease, Landlord shall promptly notify Tenant.

8. DEFAULT. Tenant shall be in default of the terms of the Lease if Tenant shall fail to make a payment of any rent or additional rent, and such rent or additional rent is not paid within ten (10) business days of written notice by Landlord to Tenant of non-payment of same, or in the event that Tenant shall otherwise commit an act of default under the terms hereof, and shall not cure such default within thirty (30) days of written notice by Landlord to Tenant of such default, or, if it is not possible to complete the cure by such time, Tenant has not commenced the cure within such 30 day period and does not thereafter diligently pursue the same to completion within a reasonable time thereafter as agreed to by the parties. In the event of default by Tenant hereunder:

- A. Landlord may continue the Lease in full force and effect and shall have the right to collect rent when due. During the term Tenant is in default, Landlord may re-enter the Leased Premises with legal process and relet same, or any part thereof, to third parties for Tenant's account. Tenant shall pay to Landlord the rent due under the Lease on the date such rent is due, less the rent Landlord receives from any reletting. Landlord shall make its best efforts to relet the Leased Premises at a reasonable price. Under this paragraph, Tenant's obligations shall not exceed the total rent due for the remainder of the term.
- B. Landlord may terminate the Lease pursuant to the terms of this Section. Upon termination, Landlord shall have the right to collect an amount equal to all expenses, if any, not including attorneys' fees, incurred by Landlord in recovering possession of the Leased Premises and all reasonable costs and charges for the care of the Leased Premises while vacated by Tenant.

Except as specifically set forth herein, Landlord shall be in default of the terms of the Lease if Landlord shall commit an act of default under the terms hereof, and shall not cure such default within thirty (30) days of written notice by Tenant to Landlord of such default, or, if it is not possible to complete the cure by such time, Landlord has not commenced the cure within such 30 day period and does not thereafter diligently pursue the same to completion within a reasonable time thereafter. In the event of a default by Landlord hereunder, Tenant may, in addition to all rights and remedies available at law or in equity, (i) cure such default and deduct any reasonable and necessary amounts incurred by Tenant in connection therewith from the rent next due by Tenant hereunder with the presentment of receipts for such reasonable and necessary actions, or (ii) terminate the Lease. Notwithstanding the foregoing, in the event that Tenant is unable, in its reasonable judgment, to operate in the Leased Premises as a result of the failure by Landlord to satisfy its obligations pursuant to Section 3 hereof (A) for a period of more than forty eight (48) consecutive hours, then the rent shall abate during the entire period of the disruption and Tenant shall have the right to terminate the Lease in the event Landlord remains unable to satisfy its obligations pursuant to Section 3 hereof for a period of more than ten (10) consecutive business days; or (B) more than ten business (10) days during any twelve (12) month period, then Tenant shall have the right to terminate the Lease.

9. **ASSIGNMENT/ END OF TERM.** At the termination of this Lease, Tenant shall surrender its interest in the Leased Premises to Landlord in as good condition and repair as reasonable use thereof will permit, ordinary wear and tear excepted, and will leave the Leased Premises broom clean. Tenant shall have the right, prior to said termination, to remove any equipment, furniture, trade fixtures or other personal property in the Leased Premises owned by Tenant, provided that Tenant promptly repairs any damage to the Leased Premises caused by such removal. Tenant may not assign its rights under this Lease except to another state entity or agency of the State of Tennessee without the consent of Landlord, which consent shall not be unreasonably withheld or delayed.

10. **MISCELLANEOUS.** The article captions contained in the Lease are for the convenience of the parties only and shall not be considered in the construction or interpretation of any provision hereof. Landlord and its agents shall have reasonable access to the Leased Premises during all reasonable business hours for the purpose of examining same to ascertain if they are in good repair and to make reasonable repairs which Landlord may be required to make hereunder. The making of repairs by Landlord or its agents shall be coordinated with Tenant to minimize disruptions of Tenant's conduct of business in the Leased Premises. The Lease contains the entire agreement between the parties and supersedes any and all other prior oral and written agreements between the parties regarding the subject matter contained herein and may not be changed or terminated orally but only by agreement in writing and signed by all parties. Landlord and Tenant acknowledge and agree that (i) all exhibits referenced in the Lease (or in any of its exhibits) are incorporated into the Lease by reference, and (ii) any reference to "the Lease," "this Lease," "hereunder," "herein" or words of like import shall mean and be a reference to the Lease including such exhibits. No waiver by either party shall be deemed to be a waiver of any other provision hereof or of any subsequent breach by either party of the same or any other provision. The Lease shall be binding upon and inure to the benefit of the parties hereto, their heirs, successors, assigns, executors and administrators. Landlord has provided to Tenant a list of names and addresses of persons, associations, or corporations who hold any financial interest in the Leased Premises; such list shall be immediately revised in the event of a transfer of any such interest.

11. **DAMAGE OR DESTRUCTION.** If the Leased Premises are damaged by fire or other casualty but not totally destroyed, the damage shall be repaired by and at the expense of Landlord (excluding any personal property which is owned by Tenant), provided that such repairs can, in Landlord's opinion, be made within one hundred eighty (180) days after the occurrence of such damage. Landlord shall notify Tenant within ten (10) business days of the event of casualty of its determination. Until such repairs are completed, the rent shall be abated in proportion to the part of the Leased Premises rendered unusable, but there shall be no abatement of rent for a period equal to one (1) day or less. If such repairs cannot, in Landlord's opinion, be made within one hundred eighty (180) days and Landlord nonetheless chooses to repair, then Tenant may, at its option, continue as Tenant under the Lease until such repairs are completed, during which time all rent shall abate, or Tenant may terminate the Lease.

If the event of a total destruction of the Building in which the Leased Premises are located during the Base Term, the Landlord shall repair the Leased Premises in accordance with the terms of this Section. A total destruction of the Building shall be defined as damage greater than fifty percent (50%) of the then replacement value thereof. Landlord shall not have an obligation to repair the Leased Premises in the event of a total destruction of the Building in which the Leased Premises are located occurs during the Option Term, as defined in Exhibit C.

If Landlord is required or elects to repair the Leased Premises, any insurance proceeds shall be available to Landlord to pay for such repairs. If Landlord elects not to repair the Leased Premises, or in the event of the total destruction of the Building at any time after the expiration of the Base Term, any insurance proceeds shall be allocated between Landlord and Tenant in accordance with this section. Tenant shall be entitled to receive a portion of the insurance proceeds to be determined by multiplying the total amount of the insurance proceeds actually received by a fraction, the numerator of which is the total square feet in the Leased Premises and the denominator of which is the

total square feet in the Building; provided, however, such amount shall not exceed the amount actually paid by Tenant pursuant to Exhibit E, Section 1. Such amount shall be paid only if and when insurance proceeds are actually received by Landlord. Landlord shall have no obligation to pay any amount to Tenant pursuant to this section unless and until insurance proceeds are actually received by Landlord. Any insurance proceeds in excess of those paid to Tenant pursuant to this section shall be the sole and exclusive property of Landlord.

The holder of any mortgage to which this Lease is subordinate shall be entitled to any insurance proceeds with respect to that portion of the Building covered by such mortgage, to the extent of the unpaid balance of the principal and all accrued interest of said mortgage, before Landlord and/or Tenant shall be entitled to any part of the insurance proceeds. Further, the rights of Landlord and Tenant under this section shall be subject to the rights of the holder of the mortgage to direct the use of insurance proceeds, including, without limitation, the right to apply any insurance proceeds to any indebtedness relating to the Building.

12. **NOTICES.** Any notice required or permitted to be given hereunder shall be sufficiently given if personally served, sent by registered or certified mail, or by reputable overnight courier, addressed to the relevant party at the following address:

If to Landlord: Innovation South Partners, LLC  
520 W. Summit Hill Drive, Suite 603  
Knoxville, TN 37902

If to Tenant: University of Tennessee  
Real Property and Space Administration  
5723 Middlebrook Pike  
Knoxville, TN 37996

13. **QUIET ENJOYMENT.** Landlord warrants and shall defend Tenant in the quiet enjoyment and possession of the Leased Premises during the term and any extension or renewal thereof.

14. **SUBORDINATION, ATTORNMEN AND NON-DISTURBANCE.** Tenant agrees that the Lease and all rights of Tenant hereunder are and shall be subject and subordinate to any ground or underlying lease which may now or hereafter be in effect regarding the Building or any component thereof, to any mortgage now or hereafter encumbering the Leased Premises or the Building or any component thereof, to all advances made or hereafter to be made upon the security of such mortgage, to all amendments, modifications, renewals, consolidations, extensions and restatements of such mortgage, and to any replacements and substitutions for such mortgage (collectively, "Mortgages"); provided as a condition to such subordination, any holder of the Mortgage must enter into a Subordination, Non-Disturbance and Attornment Agreement with Tenant in form reasonably acceptable to Tenant. In the event any proceedings are brought for the foreclosure of, or in the event of exercise of the power of sale under, or in the event of a deed in lieu of foreclosure with respect to any Mortgage covering the Leased Premises or the Building, or in the event of termination of any Lease under which Landlord may hold title, Tenant shall, at the option of transferee, attorn to such transferee and shall recognize and be bound and obligated hereunder to such person as Landlord under the Lease, unless the Lease is terminated. Notwithstanding anything contained herein to the contrary, so long as Tenant is not in default in the payment of rent, or in the performance of any of the other terms, covenants or conditions of the Lease beyond any applicable cure periods, no mortgagee or similar person shall disturb Tenant in its occupancy of the Leased Premises during the original or any renewal term of the Lease notwithstanding any event or proceedings described in this section.

15. **APPROVALS.** Neither this Lease nor any amendment or modification hereto shall be effective or legally binding upon Tenant, unless and until a fully executed, original Lease has been returned to Tenant and the review and approval by all appropriate University officials and the State Building Commission, if applicable has been obtained.

16. **COMPLIANCE WITH LAWS.** Landlord represents and warrants to Tenant that as of the Commencement Date, the Building will comply with the provisions of the Americans with Disabilities Act (ADA) in effect as of the Commencement Date in all material respects. Landlord hereby indemnifies and holds harmless Tenant from and against all costs, liabilities, and causes of action occurring or arising as a result of Landlord's failure to comply with any of the requirements of the ADA or similar laws existing as of the Commencement Date or as a result of any violation of any requirement of the ADA or similar laws existing as of the Commencement Date by Landlord or its agents. Landlord shall provide all life safety equipment, including but not limited to, fire extinguishers and smoke alarms, in compliance with applicable municipal building codes.

17. **FORCE MAJEURE.** With the exception of the obligation of Tenant to pay rent and all other amounts that may be due from time to time under this Lease, if either party shall be delayed or hindered in or prevented from doing or



performing any act or thing required hereunder by reason of any matters beyond the reasonable control of such party, then such party shall not be liable or responsible for any such delays and the doing or performing of such act or thing shall be extended for a period equivalent to the period of such delay. In such event, this Lease and the obligations of both parties to perform and comply with all of the other terms and provisions of this Lease shall in no way be affected, impaired, or excused.

18. **RECORDS RETENTION.** Landlord shall maintain documentation for all charges against Tenant under the Lease. The books, records and documentation of Landlord, insofar as they relate to reimbursement by Tenant for costs incurred, whether in whole or in part, shall be maintained in conformity with generally accepted accounting principles for a period of five (5) full years from the date of what amounts to the final payment under this Lease, and shall be subject to audit, at any reasonable time and upon reasonable notice by the Comptroller of the Treasury or his duly appointed representative or a licensed independent public accountant.

19. **SPACE AUDIT.** Landlord certifies that the rentable square feet set forth in the Lease is accurate to the best of its knowledge. Tenant reserves the right to perform physical measurements of the Leased Premises and the Building provided the Monthly Rental Installments shall not be adjusted. Tenant shall use the current Building Owner's and Manager's Association standards of measurements for either single or multi-tenant occupancy, whichever is applicable.

20. **COMMON AREAS.** During the Term of the Lease, Landlord agrees that Tenant and its employees, agents, invitees and visitors shall have the non-exclusive right to use the Common Areas for their intended purpose. Except for repairs, maintenance and replacements required under this Lease, Landlord shall not materially alter (or permit the material alteration of) any entrances, exits, corridors, sidewalks or hallways providing access to or from the Leased Premises. Landlord represents and warrants to Tenant that the Common Areas include all areas which are necessary for the use of the Leased Premises for its current use. As used herein, "Common Areas" means all portions of the Building intended for the general use or benefit of tenants or owners of the Building, and their employees, agents, and visitors, including, without limitation, all entrances, common corridors, parking areas, loading and unloading areas, trash areas, roadways, walkways, sidewalks and driveways.

Landlord grants to Tenant the right to use any common areas to which Landlord is granted the right to use pursuant to the terms of the Ground Sublease to be entered into by and between Landlord and Cherokee Farm Development Corporation.

**EXHIBIT B  
FLOOR PLAN**

See attached

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EXHIBIT C  
COMMENCEMENT DATE

Commencement Date Agreement

RE: Lease dated as of \_\_\_\_\_, by and between Innovation South Partners, LLC, as Landlord, and the University of Tennessee, as Tenant.

The Base Term of this Lease shall be for a period of 50 years, beginning on the Commencement Date and ending 50 years thereafter but in no event beyond December 31, 2072, unless sooner terminated hereunder. The Base Term and Tenant's obligation to pay monthly Rent and CAM charges shall commence on the earlier of the following dates (referred to as the "Commencement Date"):

- (a) The date Landlord notifies Tenant that the Building has been substantially completed in accordance with the Plans or
- (b) The date on which Tenant opens the Leased Premises or any part thereof for business.
- (c) For purposes of this Agreement, the Building and the Leased Premises shall be deemed to be substantially complete upon the issuance of any certificate of occupancy by the appropriate governmental authority.
  - As part of the determination of substantial completion Landlord shall cause its architect to engage a third party commissioning firm to test and validate that the equipment included in Landlord's Work and installed in the Leased Premises is working properly in all material respects and in conformance with the specifications in the design documents. If the third party commissioning entity determines that as a result of the failure of one or more pieces of equipment included in the Plans the Leased Premises is unusable for its intended purpose, but substantial completion has otherwise been achieved in accordance with subsection (c) above, Tenant's monthly rental installments shall be reduced on a pro rata basis based on the ratio the unusable portion of the Leased Premises bears to the total area of the Leased Premises. The determination of the portion of the Leased Premises which is unusable pursuant to this Section shall be determined by Landlord's architect taking into consideration such factors as the architect deems reasonable and necessary, including, without limitation, compliance with relevant safety standards.. Such reduction shall continue until such time as the Leased Premises is usable for its intended purpose as determined by Landlord's architect.

Tenant's obligation to pay Additional Rent shall commence on the date stated in Exhibit E, Section 1.

Provided that Tenant is not at the time of exercising this renewal option in material default of its obligations under this Lease beyond any applicable notice and cure periods, the Tenant shall be entitled to renew the Lease Term for a period commencing on the expiration of the Base Term and continuing until the termination date of the Ground Lease entered into by and between Cherokee Farm Development Corporation and Innovation South Partners, LLC (the "Option Term"). The renewal of the Lease Term will be on the same terms and conditions as set forth in this Lease. If Tenant elects to exercise its option to renew, Tenant will provide Landlord with written notice of its exercise of the option to renew no later than one hundred eighty days (180 days) prior to the expiration of the Base Term.

The parties agree to execute an amendment to this Exhibit C to memorialize the Commencement Date once it occurs.

LANDLORD

INNOVATION SOUTH PARTNERS, LLC

By: \_\_\_\_\_

Title: \_\_\_\_\_

ACKNOWLEDGED AND AGREED:

University of Tennessee

By: \_\_\_\_\_

Title: \_\_\_\_\_

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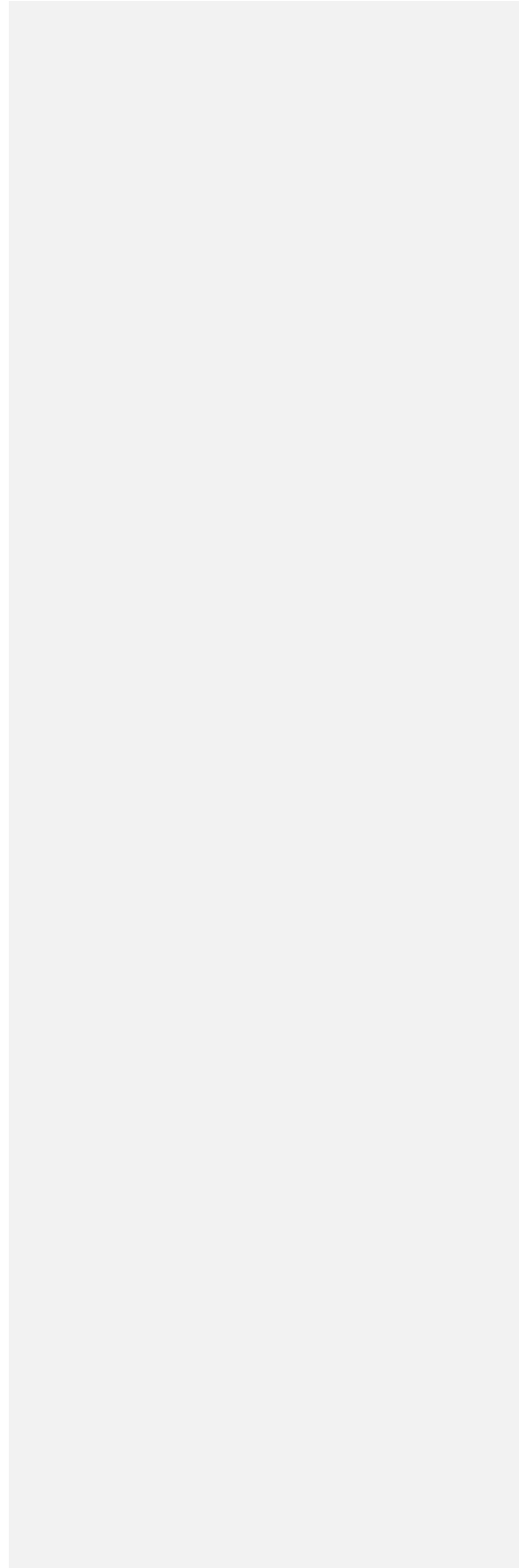


EXHIBIT D  
BUILD OUT TERMS

1. Landlord, at Landlord's sole cost and expense, shall cause to be prepared by Landlord's architect or engineer the following:

(a) Detailed working drawings and specifications, including architectural, civil, mechanical, plumbing, fire protection, and electrical plans and specifications where necessary for the installation of all improvements and necessary building systems and other engineering plans (collectively, the "Plans"), for Landlord's build-out of the Leased Premises (the "Landlord's Work"). The Plans shall be developed using the Tenants Program Document created by Lord Aeck Sargent dated May 11, 2021. The Plans shall be developed in stages as follows:

Deleted: April 16

- (1) On or before \_\_\_\_\_, Landlord shall deliver Program Verification;
- (2) On or before \_\_\_\_\_, Landlord shall deliver 100% Schematic Design
- (3) On or before \_\_\_\_\_, Landlord shall deliver Design Development; and
- (4) On or before \_\_\_\_\_, Landlord shall deliver Construction Documents

(b) Any subsequent modifications to the construction documents and specifications required by Landlord or requested by Tenant and agreed to by Landlord.

2. Tenant will appoint a representative who will be designated to approve submissions and all changes during the Build Out of the Leased Premises.

3. Tenant shall have ten (10) business days after delivery of each stage of the Plans as described above to approve such portion of the Plans in writing. Tenant's approval of the Plans shall not be unreasonably withheld or delayed. If Tenant has not disapproved the Plans within ten (10) business days of receipt, then the Plans shall be deemed approved. If Tenant disapproves the Plans, Tenant shall specify the objections in writing and Landlord shall revise and resubmit the same to Tenant for approval within ten (10) business days following receipt of Tenant's disapproval, which process shall continue until the Plans are approved. If Tenant fails to approve any portion of the revised Plans within ten (10) business days of the initial delivery of such portion of the revised Plans, either party may terminate this Lease without liability. A copy of the final Plans shall be attached to the Lease as Exhibit B.

4. Any approval by Tenant or consent by Tenant to any plans, specifications or other items to be submitted to and/or reviewed by Tenant pursuant to this Lease shall be deemed to be strictly limited to an acknowledgment of approval or consent by Tenant thereto and such approval or consent shall not constitute the assumption by Tenant of any responsibility for the accuracy, sufficiency or feasibility of any plans, specifications or other such items and shall not imply any acknowledgment, representation or warranty by Tenant that the design is safe, feasible, structurally sound or will comply with any legal or governmental requirements, and Landlord shall be responsible for all of the same.

5. The construction of the Building shall be performed (i) by Landlord's contractor or another contractor approved by Landlord, (ii) in a good and workmanlike manner, and (iii) in accordance with all applicable laws, ordinances, rules and regulations of governmental authorities having jurisdiction over the Leased Premises including the Tennessee State Fire Marshal.

6. Landlord shall require its general contractor to secure performance and payment bonds bonding its obligation under the construction contract in an amount and issued by a company and on such terms as are required by Landlord's lender, and, if not required by its lender, on such terms as deemed reasonable by Landlord.

7. The construction of the Building, including all materials and equipment furnished under the Plans, will be of good quality and new unless the Plans require or permit otherwise. The Landlord's contractor shall warrant to Landlord that the contractor's work will conform to the requirements of the Plans and will be free from material defects.

8. All material, equipment, or other special warranties required by the Plans shall be issued in the name of the Landlord. Landlord shall cooperate with Tenant in exercising any rights or remedies under the terms of such warranties.
9. All changes to the Plans will be based upon agreement among Landlord and Tenant. All changes in time, cost, and scope are required to be in writing by the Tenant prior to any work or changes being started or time being added. From and after the date hereof, the Tenant may request modifications to the Plans with respect to the Landlord's Work or architectural or design services (a "Change Order"). The Landlord will promptly provide a detailed cost estimate setting out the cost increase or decrease resulting from such Change Order as well as details concerning any impact on construction timing in the event such Change Order is incorporated into the Landlord's Work or impacts Landlord's Work. If after receipt of such information, the Tenant, in writing, authorizes Landlord to proceed the Landlord will incorporate the Change Order into the Landlord's Work or to authorize such additional architectural or design services. Tenant shall provide such notice to Landlord within ten (10) business days after receipt of the estimated cost of the Change Order. Any increase in the cost of Landlord's Work or architectural or design services as a result of a Change Order approved by Tenant in accordance with this Section shall be paid by Tenant in one lump sum payment on delivery to Landlord of Tenant's approval of the Change Order.

The contingency shown in Exhibit J - Innovation South Project – Estimated Costs, may, in the sole and absolute discretion of Landlord be used to satisfy the costs associated with any Change Order with a cost not exceeding \$50,000.

Anything herein to the contrary notwithstanding, Landlord shall have the right, it is sole and exclusive discretion, to reject any request for a Change Order if the Landlord determines that the services or work to be provided in accordance with such Change Order would materially impair the construction schedule.

10. Landlord shall begin construction of the Building according to Exhibit L-Landlord's Project Schedule. The parties acknowledge that such schedule is preliminary and is subject to change based on Tenant caused delays, events beyond the control of Landlord and satisfaction of the contingencies set forth in Exhibit E, Section 10. Landlord shall provide Tenant with a revised Project Schedule within 10 business days after determination of the final agreed maximum price in accordance with Exhibit E. In the event the construction of the Building is unreasonably delayed for any reason not attributable to Tenant or a matter beyond the control of Landlord, Tenant shall notify Landlord, and Landlord shall have thirty (30) days to cure such failure. If the failure is not capable of being cured within a thirty (30) day period, Landlord shall be afforded a reasonable period of time to cure the failure, provided that Landlord promptly commences curing the failure after the notice and brings the cure to completion with due diligence. Anything herein to the contrary notwithstanding, in the event Landlord has failed to commence to cure any failure within ten (10) days after receipt of notice from Tenant, Tenant shall have the right to undertake a cure and Landlord shall reimburse Tenant for any cost incurred by Tenant in taking such action.
11. After Substantial Completion Landlord shall cooperate with Tenant in enforcing any warranties provided by Landlord's contractor relating to the construction of the Building if contractor's work is found to be not in accordance with the contract entered into by and between Landlord and the contractor. The Tenant shall give written notice promptly after discovery of any condition for which it seeks recovery under this section. If Tenant fails to notify the Landlord of any noncomplying work, the Tenant waives the rights to require correction by the contractor and the right to make a claim for breach of warranty.
12. Upon request, Landlord will provide Tenant's representative a monthly construction meeting.
13. Tenant shall report any issues or concerns regarding the construction to Landlord for its review with architects and contractors.
14. Landlord shall cause its contractor to allow Tenant or Tenant's contractor to install telecommunications, fiber optic and other cabling to support Tenant's audio and video needs while Landlord's Work is occurring; provided, however, Tenant or Tenant's contractor shall not interfere or delay Landlord's Work.
15. Once Landlord has achieved Substantial Completion, Tenant and Landlord's architect shall inspect the Landlord's Work (the "Punch List Inspection") and shall notify Landlord in writing of any defects or faults in any Landlord's Work Landlord shall correct such defects within thirty (30) days of receipt of Tenant's list of defects or faults in the Landlord's Work, provided, however, if such defects cannot be cured within such thirty (30) day

period, Landlord shall have additional time to cure the defects so long as Landlord is diligently pursuing the correction of the defects..

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EXHIBIT E  
ADDITIONAL TERMS

The following terms and conditions shall be made a part of and incorporated into the Lease dated \_\_\_\_\_, entered into by The University of Tennessee, as Tenant, and Innovation South Partners, LLC, as Landlord.

1. Additional Rent. In addition to the Monthly Rental Installments payable by Tenant under the Lease, the following amounts shall be paid by Tenant as additional rent:

- (a) On or before the date Landlord closes the financing of the loan to be used to provide funds to construct the Building, Tenant shall pay to Landlord the sum of \$4,654,496.48.
- (b) On the date which is 90 days after the payment described in Section 1(a) above, the Tenant shall pay to Landlord the sum of \$4,654,496.48.
- (c) On the date which is 90 days after the payment described in Section 1(b) above, the Tenant shall pay to Landlord the sum of \$4,654,496.48.
- (d) On the Commencement Date, Tenant shall pay to Landlord the sum of \$4,654,496.48.

The amounts set forth in Section 1(a) above shall be subject to adjustment depending on the cost of construction of the Building. In the event the construction contract entered into by Landlord for the construction of the Building contains a guaranteed maximum price in excess of \$15,395,712.00, the payment described in Section 1(a) above shall be increased by an amount calculated by multiplying the amount by which the actual cost of construction is greater than the guaranteed maximum price by a fraction, the numerator of which is the total square footage in the Leased Premises and the denominator of which is the total square footage of the Building; provided, however, to the extent the increase in costs is related specifically to the Leased Premises or is the result of Tenant requested changes in the Plans, the increased costs shall be allocated in its entirety to Tenant and shall not be allocated based on the size of the Leased Premises.

If the actual cost of construction of the Building and Leased Premises is lower than the guaranteed maximum price of \$15,395,712.00, the payment described in Section 1(a) above shall be decreased by an amount calculated by multiplying the amount by which the actual cost of construction is less than the guaranteed maximum price by a fraction, the numerator of which is the square footage of the Leased Premises and the denominator of which is the total square footage of the Building; provided, however, to the extent the decrease in costs is related specifically to the Leased Premises or is the result of Tenant requested changes in the Plans, the decreased costs shall be allocated in its entirety to Tenant and shall not be allocated based on the size of the Leased Premises.

On or before \_\_\_\_\_ Landlord shall provide Tenant with the guaranteed maximum price to be included in the construction contract to be entered into by Landlord for the construction of the Building. The parties will follow the process outlined below:

Landlord gives Tenant Proposed GMP:

- A. If Proposed GMP is less than or equal to \$15,395,713, the Proposed GMP is the GMP for the Project
  - a. If GMP is less than \$15,395,713, Additional Rent is adjusted as provided in other paragraphs
- B. If Proposed GMP is greater than \$15,395,713, Parties attempt to reduce price through value engineering, etc. (and Project schedule is adjusted for delays caused by that exercise). Tenant shall respond to value engineering options within ten (10) business days of receipt of the options.
  - a. After that value engineering exercise, Landlord gives Tenant a Revised Proposed GMP:
    - i. If Revised Proposed GMP is less than \$16,165,497 (105% of \$15,395,713), the Revised Proposed GMP is the GMP for the Project (and the Additional Rent is adjusted as provided in other paragraphs)
    - ii. If Revised Proposed GMP is greater than \$16,165,497, within 15 days of receipt of the Revised Proposed GMP, Tenant may:
      - 1. Terminate the Lease (and pay Landlord's costs in Exhibit K, not to exceed \$943,803.07); or
      - 2. Accept the Revised Proposed GMP as the GMP for the Project (and the Additional Rent is adjusted as provided in other paragraphs), subject to the additional university and state approvals that would be required and agree to



seek those approvals expeditiously. If the university or state deny such approvals, it will be deemed a termination of the Lease, and Tenant shall pay Landlord's costs in Exhibit K, not to exceed \$934, 803.07..07.

The payments described in this Section 1 shall be paid by Tenant as set forth above and held in an escrow account established in the name of Landlord at a commercial bank or savings and loan association in the State of Tennessee. Landlord's lender shall act as escrow agent. The parties, including Landlord's lender, shall enter into an escrow agreement setting forth the terms under which such funds may be disbursed. Such escrow agreement shall provide that funds paid by Tenant pursuant to this Section 1 may be used only for the development of the Leased Premises and the Building of which the Leased Premises is a part. Funds shall be released from the escrow account only to satisfy the cost of construction, development and other expenses shown on the project budget approved by Landlord and Landlord's lender, as amended from time to time. Any release of funds in accordance with this Section shall not require the further consent of Landlord or Tenant. Any release of funds for construction costs shall be based on Landlord's architect's certification that the construction work for which payment is being requested has been completed in accordance with the Plans; provided, however, funds will be released in accordance with the project budget and shall include items other than construction costs.

2. Maintenance of Common Areas. During the term of this Lease, Landlord shall maintain the Common Areas. Tenant shall pay to Landlord Tenant's pro rata share of the actual cost of maintaining and operating the Common Areas during the Lease Term. The "actual cost of maintaining and operating the Common Area" shall mean the following: All amounts paid by Landlord as actual net cost for maintaining and repairing the Common Areas including without limitation, all maintenance reasonably necessary for the preservation of the parking area and contiguous areas of the Building and Leased Premises including cleaning, painting, snow and ice removal, cost and expenses of planting, replanting and replacing of flowers and landscaping, maintenance, repair and replacement of utility systems associated with the Common Areas, any amounts required to be paid by Landlord in connection with the Common Areas of the development known as "Cherokee Farm" in which the Building is located, and any other amounts paid by Landlord pursuant to Sections 3(B), 3(C), 3(D), 3(E) and 3(F) of Exhibit A and Exhibit F related to CAM charges.

The annual charge to Tenant shall be paid in monthly installments on the date on which Monthly Rental Installments are due. Within ninety (90) days after the end of each calendar year, Landlord shall furnish Tenant with a statement in reasonable detail of the actual Common Areas costs and expenses paid or incurred by Landlord and its designees during such period, prepared in accordance with generally accepted accounting practices by Landlord or its designees; and thereupon there shall be an adjustment between Landlord and Tenant, with payment to or payment by Landlord as the case may require to the end that Landlord shall receive the entire amount of Tenant's pro rata share of such costs and expenses for such period.

Tenant's pro rata share shall be based on the ratio the rentable square feet of the Leased Premises bears to the rentable square feet in the Building.

Amounts payable pursuant to this Section 2 shall be considered CAM payable by Tenant under the Lease.

3. Environmental Condition. Tenant hereby agrees that it shall comply at all times with all applicable laws, ordinances, regulations, statutes and rules relating to hazardous materials, hazardous substances or petroleum products at the Leased Premises and further agrees that no hazardous materials, hazardous substances or petroleum products will be located on, in or within or under the Leased Premises except in accordance with applicable law, the presence or existence of which or escape, seepage, leakage, spillage, discharge, omission, release, chemical change or decomposition of which might now or hereafter subject Landlord to liability under or compliance with any hazardous material law as hereinafter defined. Tenant agrees to be solely responsible for any and all loss, damage, claim and liability resulting from the existence of hazardous materials on the Leased Premises or any violation of any hazardous material law relating to the Leased Premises. These covenants shall survive the expiration or earlier termination of the Lease. For purposes of this section, the term "Hazardous Material" shall include, but not be limited to, asbestos and also means petroleum products, hazardous, toxic or dangerous waste, substance or material defined as such and/or for purposes of any Hazardous Material law. The term "Hazardous Material Law" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act, the Resource Conservation and Recovery Act and any so called "Superfund" or "Super Lien" law, or any other federal, state or local statute, law, ordinance, code, rule, regulation, or decree regulating, relating to or imposing liability or

standards of conduct concerning any petroleum product or hazardous, toxic or dangerous waste, substance or material.

4. Eminent Domain.

(a) Partial Taking: If a portion of the Leased Premises shall be taken as herein provided for public or quasi-public use or improvement or otherwise under the exercise of the right of eminent domain and the Leased Premises shall continue to be reasonably suitable for the use which is herein authorized, then the rental herein provided shall be reduced from the date of such taking in direct proportion to any material reduction in usefulness of the Leased Premises.

(b) Substantial Taking: If all of the Leased Premises, or a part sufficient to render the Leased Premises wholly unfit for the use herein authorized, shall be condemned or acquired by grant or otherwise, for public or quasi-public use or improvements, or shall otherwise be taken in the exercise of the right of eminent domain, both Tenant and Landlord shall have the right, at either Tenant's or Landlord's option, to terminate and cancel this Lease upon thirty (30) days' prior written notice, and, under this Article, Tenant shall be liable only for rents and other charges accrued and earned to the date of surrender of possession of the Leased Premises to Landlord and for the performance of other obligations maturing prior to said date or surviving the termination or expiration of this Lease.

(c) Award: Except as specifically provided herein, Tenant shall not be entitled to participate in or receive any part of the damages or award which may be paid or awarded by reason of a taking of the Leased Premises or any part of the Leased Premises under this Article except where said award shall provide for moving expenses or other reimbursable expenses for Tenant under applicable statute.

Deleted: , and hereby specifically waives any right arising by statute or otherwise,

In the event of a partial taking or a substantial taking, if the Lease is not terminated pursuant to Section 4(b), any award shall be allocated between Landlord and Tenant in accordance with this paragraph. Tenant shall be entitled to receive a portion of the award to be determined by multiplying the amount of the award by a fraction, the numerator of which is the amount actually paid by Tenant to Landlord pursuant to Section 1(a), (b) and (d) of Exhibit A and the denominator of which is the total cost of the Building, with the resulting amount to be further multiplied by a fraction, the numerator of which is the number of years remaining in the term of this Lease and the denominator of which is 91. Such amount shall be paid only if and when the award is actually received by Landlord. Landlord shall have no obligation to pay any amount to Tenant pursuant to this section unless and until the award is actually received by Landlord. Any portion of the award in excess of those paid to Tenant pursuant to this section shall be the sole and exclusive property of Landlord.

In the event of a substantial taking and the termination of this Lease pursuant to the terms of Section 4(b) above, any award shall be allocated between Landlord and Tenant in accordance with this paragraph. Tenant shall be entitled to receive a portion of the award to be determined by multiplying the amount actually paid by Tenant to Landlord pursuant to Sections 1(a), (b) and (d) of Exhibit E by a fraction, the numerator of which is the number of years remaining in the term of this Lease and the denominator of which is 91. Such amount shall be paid only if the award is actually received by Landlord. Landlord shall have no obligation to pay any amount to Tenant pursuant to this section unless and until the award is actually received by Landlord. Any proceeds in excess of those paid to Tenant pursuant to this section shall be the sole and exclusive property of Landlord.

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(d) Rights of Landlord's Lender: The holder of any mortgage to which this Lease is subordinate shall be entitled to any condemnation award with respect to a condemnation of that portion of the Premises covered by such mortgage, to the extent of the unpaid balance of principal and all accrued interest of said mortgage, before Landlord and/or Tenant shall be entitled to any part of said award, except with respect to any condemnation award for moving expenses or other reimbursable expenses for Tenant, to which Tenant shall be entitled, but only to the extent that same does not violate the terms of any agreement between Landlord and Landlord's lender.

5. Landlord's Exculpatory Clause: The term "Landlord" as used in this Lease means only the ground lessee of the property on which the Building is located, so that in the event of any sale or sales of such interest in the land or the Ground Lease, or assignment, transfer, or other conveyance of its rights under this Lease, Landlord shall be and hereby is entirely freed from and relieved of all covenants and obligations of Landlord hereunder effective as of the date of such sale, assignment, transfer, or other conveyance, and it shall be deemed and construed, without further agreement between the parties and the purchaser at any such sale, or the successor to Landlord by reason of any assignment, transfer, or other conveyance of its rights under this Lease, that such purchaser or successor has assumed and agreed to carry out any and all covenants and obligations of Landlord hereunder from and after the date of such sale, assignment, transfer, or other conveyance.

Notwithstanding the provisions of Paragraph 7, Tenant expressly agrees that Landlord's lender(s) shall not be held subject to any liability or obligation to Tenant under any lease or otherwise, unless and until such lender(s) obtains title to the Premises as a result of foreclosure or otherwise; and, in such event, Landlord's lender(s) shall be subject only to those liabilities or obligations arising subsequent to the date the lender obtains title to the Premises.

6. Modifications Required by Landlord's Lender: Tenant agrees that, in the event any lender(s) of Landlord requests modifications or amendments to this Lease, Tenant shall in good faith negotiate such changes and execute such modifications or amendments as agreed to by Landlord, Landlord's lender(s), and Tenant.

7. Responsibility of Tenant, Subject to applicable law, Tenn. Code Ann. §9-8-307, Tenant shall, and hereby agrees to be solely responsible for any and all claims, actions, damages, expenses and all liability whatsoever, arising out of or in any way connected with injury (including death) or property damage to any person, firm, corporation or other entity, including the Landlord, arising directly or indirectly from the use or occupancy of the Premises or any part thereof by Tenant, its agents, sublessees, assigns, contractors, employees or invitees, or Tenant's business at the Leased Premises other than those which may arise from willful misconduct or negligence of Landlord. This provision shall survive the expiration or termination of this Lease.

8. Negation of Personal Liability. Notwithstanding anything contained herein to the contrary, Tenant agrees that Landlord shall have no personal liability with respect to any of the provisions of this Lease and Tenant shall look solely to the estate and property of Landlord in the land and buildings comprising the Premises for the satisfaction of Tenant's remedies, including, without limitation, the collection of any judgment or the enforcement of any other judicial process requiring the payment or expenditure of money by Landlord or its partners in the event of any default or breach by Landlord, subject, however, to the prior rights of any holder of any mortgage covering all or part of the Building or the land on which the Building is located, and no other assets of Landlord or any principal or partner of Landlord shall be subject to levy, execution or other judicial process for the satisfaction of Tenant's claim and in the event Tenant obtains a judgment against Landlord, and/or its partners, the judgment docket shall be so noted. This provision shall inure to the benefit of Landlord's successors and assigns and their respective partners and/or principals. Notwithstanding anything contained herein to the contrary, Landlord agrees that Tenant's officers and employees and shareholders shall have no personal liability with respect to any of the provisions of this Lease and Landlord shall look solely to the Tenant and property of Tenant for the satisfaction of Landlord's remedies, including, without limitation, the collection of any judgment or the enforcement of any other judicial process requiring the payment or expenditure of money by Tenant in the event of any default or breach by Tenant, tenant's officer and or employees. This provision shall inure to the benefit of Tenant's successors and assigns and their respective officers, partners and/or principals and employees.

9. Use of Leased Premises. The Premises shall be used and occupied by Tenant solely as an office building, research laboratories or other facilities for research or professional services or educational purposes and for no other purpose without Landlord's prior written consent, which consent may be withheld by Landlord in its sole discretion. Tenant shall comply with all rules, regulations, and laws of any governmental authority with respect to use and occupancy of the Premises and any recorded restrictions, covenants or conditions relating to or affecting the Premises.

The Leased Premises shall not be used for any of the following purposes at any time during the Lease Term:

(a) Any manufacturing (except for such manufacturing that is otherwise incidental to a permissible use, including prototype development of assembly of high technology products related to onsite research and development activities), industrial or warehouse (except for storage incidental to the operation of any otherwise permissible use, facilities or operations);

(b) Any retail use, except as incidental to any otherwise permissible use (e.g. operation of cafes or coffee shops, daycare centers or training institutes for use of occupants of the Leased Premises).

The use of the Leased Premises as set forth above shall be a "Permitted Use".

Tenant shall comply with all rules, regulations, and laws of any governmental authority with respect to use and occupancy of the Premises and any recorded restrictions, covenants or conditions relating to or affecting the Premises.

10. Conditions to Closing. Except as stated in Exhibit D, the obligations of the parties hereunder are subject to the satisfaction of the following conditions:

(a) Approval of this Lease by the Attorney General of the State of Tennessee, the Tennessee State School Bond Authority and the Tennessee State Building Commission.

(b) Execution by Landlord of a Sublease or other agreement by which Landlord obtains the right to use the property on which the Building is located for a term of at least 50 years, but not beyond December 31, 2072.

(c) Execution by the parties and Landlord's lender of a Recognition Agreement substantially in the form attached hereto as Exhibit I.

(d) Receipt by Landlord of binding pre-lease commitments for at least 70% of the commercial space in the Building not occupied by Tenant.

If such conditions are not satisfied on or before \_\_\_\_\_, either party may terminate the transaction contemplated by here and/or this Lease by the giving of written notice to the other party. Upon any such termination, the parties shall be released from any liabilities relating to or arising out of the transaction contemplated hereby.

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IN WITNESS WHEREOF, the parties have executed this Exhibit E as of the date set forth above.

UNIVERSITY OF TENNESSEE

INNOVATION SOUTH PARTNERS, LLC

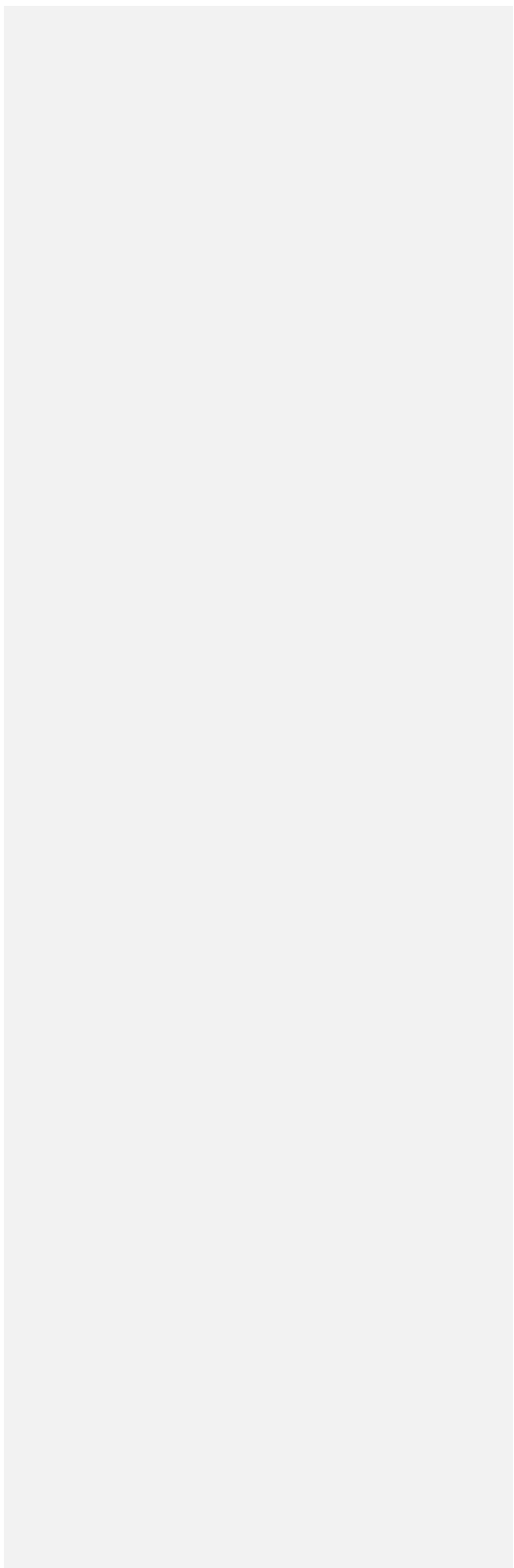
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## ESCROW AGREEMENT

This **ESCROW AGREEMENT** is made and entered into as of \_\_\_\_\_ (the “Effective Date”) by and between **INNOVATION SOUTH PARTNERS, LLC**, a Tennessee limited liability company (“Landlord”), **THE UNIVERSITY OF TENNESSEE** (“Tenant”) and \_\_\_\_\_, a \_\_\_\_\_ (“Escrow Agent”).

Landlord and Tenant have previously entered into a Lease dated as of \_\_\_\_\_, pursuant to which the Landlord will lease to Tenant certain real property and improvements to be constructed by Landlord in Knox County, Tennessee (the “Lease”), all as more specifically described in the Lease. Pursuant to the terms of the Lease, Tenant is required to pay certain installments of Rent during the construction of the improvements, subject to adjustment as set forth in the Lease. The Lease provides that such payments will be held in an escrow account established in the name of Landlord at a commercial bank or savings and loan association in the State of Tennessee.

The parties now wish to set forth the terms of such escrow account.

**NOW, THEREFORE**, for good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as follows:

1. **Capitalized Terms**. All capitalized terms used herein shall have the same meaning as set forth in the Lease, unless otherwise specifically defined therein. In the event of any conflict between the meaning of any provision of this Escrow Agreement and any provision of the Lease, the provision of this Escrow Agreement shall control.

2. **Escrow Agent**. Tenant and Landlord hereby designate, constitute and appoint Escrow Agent as the “Escrow Agent” under this Escrow Agreement, and Escrow Agent hereby accepts such designation and appointment. The parties hereby covenant and agree that in performing any of its duties under this Escrow Agreement, Escrow Agent shall not incur any liability to anyone for any losses, costs or damages except for any losses, costs or damages arising out of its willful misconduct or gross negligence. Accordingly, Escrow Agent shall not incur any liability with respect to (i) any action taken or omitted to be taken in good faith upon advice of its counsel given with respect to any questions relating to its duties and responsibilities under this Escrow Agreement, or (ii) any action taken or omitted to be taken in reliance upon any documents or written notices presented to Escrow Agent by the parties hereunder which Escrow Agent shall in good faith believe to be genuine, to have been signed or presented by a proper person or persons and to conform with the provisions of this Escrow Agreement.

**3. Deposit of Funds.** Tenant hereby agrees to deliver and deposit with Escrow Agent the following amounts on the date set forth below (individually and collectively, the “Escrow Funds”):

(a) Upon the execution of this Escrow Agreement, the sum of Four Million Six Hundred Fifty-Four Thousand Four Hundred Ninety-Six Dollars and 48/100 (\$4,654,496.48);

(b) On or before \_\_\_\_\_, Four Million Six Hundred Fifty-Four Thousand Four Hundred Ninety-Six Dollars and 48/100 (\$4,654,496.48);

(c) On or before \_\_\_\_\_, the sum of Four Million Six Hundred Fifty-Four Thousand Four Hundred Ninety-Six Dollars and 48/100 (\$4,654,496.48);

(d) On or before the Commencement Date, the sum of Four Million Six Hundred Fifty-Four Thousand Four Hundred Ninety-Six Dollars and 48/100 (\$4,654,496.48).

The parties acknowledge and agree that the amount of such payments is subject to adjustment as set forth in the Lease.

The Escrow Funds shall be held by Escrow Agent in escrow in an account titled “Innovative South Partners, LLC Escrow Account” (the “Escrow Account”) and administered and disbursed pursuant to and strictly in accordance with the terms of this Escrow Agreement. All interest accrued on the Escrow Funds shall be the sole property of Landlord and shall be disbursed to Landlord upon the final disbursement by Escrow Agent of the Escrow Funds hereunder.

**4. Disbursement of Escrow Funds.** Landlord shall have the right from time to time to request draws from the Escrow Account to satisfy the cost of construction, development and other expenses for the development of the Leased Premises and the Building of which the Leased Premises is a part. Escrow Funds shall be released from the Escrow Account only to satisfy the cost of construction, development and other expenses shown on the project budget approved by Landlord and Landlord’s lender, as amended from time to time. Any release of Escrow Funds in accordance with this section shall not require the further consent of Tenant. Any release of Escrow Funds for construction costs shall be based on the Landlord’s architect’s certification that the construction work for which payment is being requested has been completed in accordance with the Plans. Upon request of Landlord, Escrow Funds will also be released in accordance with the project budget and shall include items other than construction costs.

5. **Term.** The Escrow Funds shall be held by Escrow Agent from the date hereof until the Commencement Date, at which point the Term of this Escrow Agreement shall end. Upon the end of the Term, the balance of any Escrow Funds shall be disbursed to Landlord and this Escrow Agreement shall terminate.

6. **Disputes; Interpleader.** In the event that there is a dispute regarding the disbursement or disposition of the Escrow Funds, or in the event Escrow Agent shall receive conflicting written demands or instructions with respect thereto, then Escrow Agent may withhold such disbursement or disposition until: (i) notified by both parties that such dispute is resolved, or (ii) receipt of an Order from a Court directing release of the Escrow Funds, or (iii) Escrow Agent may file a suit of interpleader at the cost and expense of Tenant and Landlord, in which event, Escrow Agent shall be entitled to tender into the registry or custody of any court of competent jurisdiction in Knoxville, Tennessee, all of the Escrow Funds, together with such legal pleadings as it deems appropriate, and thereupon be discharged from all further duties and liabilities under this Escrow Agreement. Any such legal action may be brought in such court as Escrow Agent shall determine to have jurisdiction thereof.

7. **Notices.** Each notice concerning the subject matter of this Escrow Agreement shall be in writing and shall be delivered in accordance with the terms of the Lease.

8. **Amendments.** This Escrow Agreement may not be modified or amended except in a writing signed by all parties hereto. The invalidity or unenforceability of any provision of this Escrow Agreement shall not affect the validity or enforceability of the remaining provisions hereof.

9. **Successors and Assigns.** Neither this Escrow Agreement nor any of the rights, duties or obligations of any party hereunder, may be assigned or otherwise delegated by such party without the prior written consent of all other parties hereto, which shall not be unreasonably withheld. This Escrow Agreement shall apply to, inure to the benefit of and be binding upon and enforceable against the parties hereto and their respective successors and permitted assigns, to the same extent as is specified throughout this Escrow Agreement.

10. **Counterparts.** This Escrow Agreement may be executed in several counterparts, each of which will be deemed an original, and all of such counterparts together shall constitute one and the same instrument. Delivery by a party hereto of a facsimile or other electronic transmission executed by such party shall constitute delivery by such party of an original hereof.

11. **Time of the Essence.** Time is of the essence of this Escrow Agreement.



12. **Governing Law.** This Escrow Agreement shall be governed by and construed under the laws of the State of Tennessee.

[SIGNATURE PAGE FOLLOWS]

**IN WITNESS WHEREOF**, the parties have caused this Escrow Agreement to be executed under seal by their respective duly authorized officers as of the date first written above.

**TENANT**

**THE UNIVERSITY OF TENNESSEE**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

**LANDLORD**

**INNOVATION SOUTH PARTNERS, LLC, a  
Tennessee limited liability company**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

**ESCROW AGENT**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

EXHIBIT F - SCHEDULE OF EXPENSES

UTK Leased Square Footage

36,863

Cost	One-Time Payment	Annual \$/sf	Annual Cost	Included in Lease Payment	\$/sf Included in Lease Payment/CAM	Annual Cost Included in Lease Payment/CAM	UTK Office Space	High Bay/Laboratory	Scope	Notes (e.g., expense stops)
UT Prepaid Rent	\$18,617,985.91									4 payments in accordance with Exhibit E
UT Annual Rent		\$7.91	\$291,582.38						Includes Capital Replacement Plan below	2% escalation through year 40, 1% thereafter
Annual Expenses										
* Utilities				No		\$0.00			Tenant responsibility	
* Capital Replacement Plan				Annual Rent	\$4.1323	\$152,327.27			Roof, HVAC for Office (No High Bay/Lab), Plumbing for Office (No High Bay/Lab), Lighting Fixtures (excluding R&D specific/specialty lighting), Elevator, Doors (hardware and frames) Sprinkler System Componentry, and Window (plate glass and store front)	For Years 1-40 of Lease
CAM		\$3.73	\$137,447.38							Reconciled annually
* HVAC Maintenance (excluding labs/High Bay)				CAM					filters/minor repairs - included in CAM repair and maintenance line item	Reconciled annually
* Elevator Maintenance				CAM	\$0.1702	\$6,274.08			Elevator maintenance contract	Reconciled annually
* Pest Control				CAM	\$0.0314	\$1,157.50			Pest control contract	Reconciled annually
* Landscaping										
* Routine				CAM	\$0.3535	\$13,031.07			Mowing, mulching, tree/shrub trimming, leaf removal, plant replacement as needed	Reconciled annually
* Non-routine									Landlord responsibility	
* Parking										
* Routine				CAM	\$0.0262	\$965.81			Cleaning, Snow Removal, Sealing, restriping	Reconciled annually
* Non-routine									Landlord responsibility	
* Insurance Expense				CAM	\$0.1571	\$5,791.18			Landlord required insurance	Reconciled annually
* Janitorial (UTK Office Space)				CAM	\$1.0000	\$36,863.00			UTK Office Space Janitorial services	Reconciled annually
* Janitorial (Common)				CAM	\$0.3666	\$13,513.98			Common Area Janitorial services	Reconciled annually
* Refuse Removal				CAM	\$0.0877	\$3,232.89			Refuse Removal Services (excluding specialty materials)	Reconciled annually
* Security/Fire Alarm Monitoring				CAM	\$0.1637	\$6,034.47			Monitoring contracts for security/fire alarm	Reconciled annually
* Property Management Services				CAM	\$0.4338	\$15,991.17			Property management services	Reconciled annually
* Cherokee Farm CAM				CAM	\$0.0786	\$2,897.43			UT Research Park CAM allocation	Reconciled annually
* Telephone Expense (Elevator)				CAM	\$0.0825	\$3,041.20			Telephone required in elevator	Reconciled annually
* Repairs & Maintenance (Common)				CAM	\$0.3273	\$12,065.26			Repairs and maintenance of common areas, UTK space (excluding labs/High Bay)	Reconciled annually
* Interior Finishes Refurbishment				No					Tenant responsibility	
* Tenant owned equipment				No					Tenant responsibility	
* Taxes				No					Tenant responsibility	
* Corrective Repairs and Maintenance				CAM	\$0.4500	\$16,588.35			corrective maintenance (stopped commodes, light bulbs, recommended maintenance by manufacturer)	Reconciled annually

Total \$11.64 \$429,029.76

Years 1-40 of Lease							
Activity			Payment Source		UTK Office Space	High Bay/Laboratory	Scope
<b>HVAC</b>							
Capital Replacement Plan			UTK Annual Rent (office space)		ISP	UTK	Replacing failed/failing equipment due to end of life or failure (not due to UTK negligence).
Preventive Maintenance			CAM-UTK (office space)		ISP	UTK	Scheduled maintenance as specified by manufacturer (replacing filters, inspection and cleaning, recharge refrigerant, lubricate belts, clean coil/drip pan/condensate lines, controls inspections, etc.)
Corrective Maintenance			CAM-UTK (office space)		ISP	UTK	
<b>Roof</b>							
			UTK Annual Rent		ISP	ISP	Included in Capital Replacement Plan
<b>Foundation and Exterior and Load Bearing Walls</b>							
			ISP		ISP	ISP	Landlord Responsibility
<b>Plumbing</b>							
Capital Replacement Plan			UTK Annual Rent (office space)		ISP	UTK	Replacing failed/failing equipment due to end of life or failure (not due to UTK negligence, which is UTK's responsibility). Includes fixtures.
Preventive Maintenance			CAM-UTK		ISP	UTK	Scheduled maintenance as specified by manufacturer.
Corrective Maintenance			CAM-UTK		ISP	UTK	Repairing stopped commodes, sink drains (unless stoppage caused by building wastewater lines), etc.
<b>Fire Alarm and Sprinkler Systems</b>							
Capital Replacement Plan			UTK Annual Rent		ISP	ISP	(unless damage caused by UTK)
Preventive Maintenance			CAM-UTK		ISP	ISP	Maintenance contract included in CAM
Corrective Maintenance			CAM-UTK		ISP	ISP	(unless damage caused by UTK)
<b>Lighting</b>							
Capital Replacement Plan			UTK Annual Rent		ISP	ISP*	Replacing failed/failing equipment due to end of life or failure (not due to UTK negligence which is UTK's responsibility). Includes light fixtures (*excluding R&D specific/specialty lighting/fixtures in high bay/laboratory), etc.
Preventive Maintenance			CAM-UTK		ISP	ISP*	Scheduled maintenance as specified by manufacturer (*excluding R&D specific/specialty light fixtures in high bay/laboratory).
Corrective Maintenance			CAM-UTK		ISP	ISP*	Replacing light bulbs, etc. (*excluding R&D specific/specialty lighting in high bay/laboratory)
<b>Electrical Systems</b>							
Capital Replacement Plan			UTK Annual Rent		ISP	ISP*	Replacing failed/failing equipment due to end of life or failure (not due to UTK negligence which is UTK's responsibility). Includes panels (unless damage caused by UTK), (*excluding R&D specific/specialty electrical in high bay/laboratory), etc.
Preventive Maintenance			CAM-UTK		ISP	ISP*	Scheduled maintenance as specified by manufacturer (*excluding R&D specific/specialty electrical systems/fixtures in high bay/laboratory).
Corrective Maintenance			CAM-UTK		ISP	ISP*	Minor repair to electrical outlets, etc. (*excluding R&D specific/specialty electrical in high bay/laboratory)
<b>Doors (hardware and frames) and Windows (plate glass and storefront)</b>							
Capital Replacement Plan			UTK Annual Rent		ISP	ISP	(unless damage caused by UTK)
Preventive Maintenance			CAM-UTK		ISP	ISP	scheduled maintenance as specified by manufacturer.
Corrective Maintenance			CAM-UTK		ISP	ISP	(unless damage caused by UTK)
<b>Interior Finishes Refurbishment</b>							
			UTK		UTK	UTK	
<b>Tenant Owned Equipment</b>							
			UTK		UTK	UTK	
<b>Non-routine landscaping and parking lot repair, replacement.</b>							
			ISP		ISP	ISP	Landlord responsibility and not included in CAM or any other chargeback to UTK. (unless damage caused by UTK)
<b>Property Taxes</b>							
			CAM-UTK		UTK	UTK	For UTK's portion of the building only.
<b>Janitorial/Refuse Removal</b>							
			CAM-UTK		ISP	UTK	UTK Office, Common area janitorial costs and refuse removal included in CAM charges. ISP to provide dumpsters for all trash, excluding specialty materials.
<b>Utilities</b>							
			UTK		UTK	UTK	
<b>Elevator</b>							
Capital Replacement Plan			UTK Annual Rent		ISP	ISP	(unless damage caused by UTK)
Preventive Maintenance			CAM-UTK		ISP	ISP	Maintenance contract included in CAM
Corrective Maintenance			CAM-UTK		ISP	ISP	(unless damage caused by UTK)

**EXHIBIT G - SCHEDULE OF RENT PAYMENTS**

		Annual Rent	Rent PSF			Annual Rent	Rent PSF
Year 1	\$	291,582.38	\$ 7.91	Year 49	\$	518,552.08	\$ 14.07
Year 2	\$	297,414.02	\$ 8.07	Year 50	\$	523,737.60	\$ 14.21
Year 3	\$	303,362.30	\$ 8.23	Year 51	\$	528,974.98	\$ 14.35
Year 4	\$	309,429.55	\$ 8.39	Year 52	\$	534,264.73	\$ 14.49
Year 5	\$	315,618.14	\$ 8.56	Year 53	\$	539,607.37	\$ 14.64
Year 6	\$	321,930.50	\$ 8.73	Year 54	\$	545,003.45	\$ 14.78
Year 7	\$	328,369.11	\$ 8.91	Year 55	\$	550,453.48	\$ 14.93
Year 8	\$	334,936.49	\$ 9.09	Year 56	\$	555,958.02	\$ 15.08
Year 9	\$	341,635.22	\$ 9.27	Year 57	\$	561,517.60	\$ 15.23
Year 10	\$	348,467.92	\$ 9.45	Year 58	\$	567,132.77	\$ 15.39
Year 11	\$	355,437.28	\$ 9.64	Year 59	\$	572,804.10	\$ 15.54
Year 12	\$	362,546.03	\$ 9.84	Year 60	\$	578,532.14	\$ 15.69
Year 13	\$	369,796.95	\$ 10.03	Year 61	\$	584,317.46	\$ 15.85
Year 14	\$	377,192.89	\$ 10.23	Year 62	\$	590,160.64	\$ 16.01
Year 15	\$	384,736.75	\$ 10.44	Year 63	\$	596,062.24	\$ 16.17
Year 16	\$	392,431.49	\$ 10.65	Year 64	\$	602,022.87	\$ 16.33
Year 17	\$	400,280.12	\$ 10.86	Year 65	\$	608,043.10	\$ 16.49
Year 18	\$	408,285.72	\$ 11.08	Year 66	\$	614,123.53	\$ 16.66
Year 19	\$	416,451.43	\$ 11.30	Year 67	\$	620,264.76	\$ 16.83
Year 20	\$	424,780.46	\$ 11.52	Year 68	\$	626,467.41	\$ 16.99
Year 21	\$	433,276.07	\$ 11.75	Year 69	\$	632,732.08	\$ 17.16
Year 22	\$	441,941.59	\$ 11.99	Year 70	\$	639,059.40	\$ 17.34
Year 23	\$	450,780.42	\$ 12.23	Year 71	\$	645,450.00	\$ 17.51
Year 24	\$	459,796.03	\$ 12.47	Year 72	\$	651,904.50	\$ 17.68
Year 25	\$	468,991.95	\$ 12.72	Year 73	\$	658,423.54	\$ 17.86
Year 26	\$	478,371.79	\$ 12.98	Year 74	\$	665,007.78	\$ 18.04
Year 27	\$	487,939.22	\$ 13.24	Year 75	\$	671,657.86	\$ 18.22
Year 28	\$	497,698.01	\$ 13.50	Year 76	\$	678,374.44	\$ 18.40
Year 29	\$	507,651.97	\$ 13.77	Year 77	\$	685,158.18	\$ 18.59
Year 30	\$	517,805.01	\$ 14.05	Year 78	\$	692,009.76	\$ 18.77
Year 31	\$	528,161.11	\$ 14.33	Year 79	\$	698,929.86	\$ 18.96
Year 32	\$	538,724.33	\$ 14.61	Year 80	\$	705,919.16	\$ 19.15
Year 33	\$	549,498.82	\$ 14.91	Year 81	\$	712,978.35	\$ 19.34
Year 34	\$	560,488.79	\$ 15.20	Year 82	\$	720,108.13	\$ 19.53
Year 35	\$	571,698.57	\$ 15.51	Year 83	\$	727,309.21	\$ 19.73
Year 36	\$	583,132.54	\$ 15.82	Year 84	\$	734,582.31	\$ 19.93
Year 37	\$	594,795.19	\$ 16.14	Year 85	\$	741,928.13	\$ 20.13
Year 38	\$	606,691.10	\$ 16.46	Year 86	\$	749,347.41	\$ 20.33
Year 39	\$	618,824.92	\$ 16.79	Year 87	\$	756,840.89	\$ 20.53
Year 40	\$	631,201.42	\$ 17.12	Year 88	\$	764,409.29	\$ 20.74
Year 41	\$	478,874.15	\$ 12.99	Year 89	\$	772,053.39	\$ 20.94
Year 42	\$	483,662.89	\$ 13.12	Year 90	\$	779,773.92	\$ 21.15
Year 43	\$	488,499.52	\$ 13.25	Year 91	\$	787,571.66	\$ 21.37
Year 44	\$	493,384.51	\$ 13.38				
Year 45	\$	498,318.36	\$ 13.52				
Year 46	\$	503,301.54	\$ 13.65				
Year 47	\$	508,334.56	\$ 13.79				
Year 48	\$	513,417.90	\$ 13.93				

Prepared by and after recording return to:

**RECOGNITION, CONSENT, NON-DISTURBANCE,  
ESTOPPEL AND ATTORNMENT AGREEMENT**

THIS RECOGNITION, CONSENT, NON-DISTURBANCE, ESTOPPEL AND ATTORNMENT AGREEMENT (this “**Agreement**”) is made as of the \_\_\_ day of \_\_\_\_\_, 202\_\_, by and among THE UNIVERSITY OF TENNESSEE, an instrumentality of the State of Tennessee, (“**University**”), UNIVERSITY OF TENNESSEE RESEARCH FOUNDATION, a Tennessee not-for-profit public benefit corporation, (“**UTRF**”), CHEROKEE FARM DEVELOPMENT CORPORATION, a Tennessee not-for-profit public benefit corporation (“**CFDC**”), INNOVATION SOUTH PARTNERS, GP, a Tennessee general partnership (together with its successors and assigns, “**ISP**”), and \_\_\_\_\_, a \_\_\_\_\_ (together with its successors and assigns, “**Mortgagee**”).

RECITALS

A. University is the fee simple owner of certain real property located in the City of Knoxville, County of Knox, State of Tennessee, commonly known as “UT Research Park,” as more particularly described in Exhibit A (the “**Land**”) attached hereto and incorporated herein by reference. Plats are recorded as Instrument Nos. 201512110035341 and \_\_\_\_\_, both in the Office of the Register of Deeds for Knox County, Tennessee for portions of the Land, to which plats specific reference is hereby made (jointly, the “Plats”).

B. University and UTRF entered into that certain Master Ground Lease dated December 13, 2012, as amended by: that certain First Amendment to Master Ground Lease dated March 15, 2016; that certain Second Amendment to Master Ground Lease effective October 9, 2020; that certain Third Amendment to Master Ground Lease effective October 9, 2020; that certain Fourth Amendment to Master Ground Lease dated \_\_\_\_\_, 2021; and that certain Fifth Amendment to Master Ground Lease dated \_\_\_\_\_, 202\_\_, (collectively the “**Master Ground Lease**”), wherein University leased to UTRF and UTRF leased from University, a portion of the Land including a parcel consisting of approximately[ 1.6 acres and generally known as UT Research Park Lot 18], as more particularly described in Exhibit B attached hereto and incorporated herein by reference, together with all easements, appurtenances and other rights belonging thereto, including but not limited to rights of ingress and egress, parking, roads, utility sources and connections, and other infrastructure and common areas as described in said Master Ground Lease, the Plats and Declaration of Access and Utilities Easement dated November 30, 2015, made by UTRF, recorded in Instrument Number 201512010033153, in the Office of the Register of Deeds for Knox County, Tennessee (collectively, the “**Premises**”), as evidenced by that certain Memorandum of Ground Lease dated September 26, 2014, recorded as Instrument No. 201409290018171, and that certain First Amendment to Memorandum of Master Ground Lease

dated March 15, 2016, recorded as Instrument No. 201603150053289, that certain Second Amendment to Memorandum of Master Ground Lease dated October 9, 2020, recorded as Instrument No. 202010090029939, that certain Third Amendment to Memorandum of Master Ground Lease dated October 9, 2020, recorded as Instrument No. 202010090029940, that certain Fourth Amendment to Memorandum of Master Ground Lease dated \_\_\_\_\_, 202\_, recorded as Instrument No. \_\_\_\_\_, and that certain Fifth Amendment to Memorandum of Master Ground Lease dated \_\_\_\_\_, 202\_, recorded as Instrument No. \_\_\_\_\_, all in the Office of the Register of Deeds for Knox County, Tennessee.

C. UTRF and CFDC entered into that certain Master Ground Sublease dated March 15, 2016, as evidenced by that certain Memorandum of Master Ground Sublease dated March 15, 2016, recorded as Instrument No. 201603150053290, as amended by that certain First Amendment to Master Ground Sublease dated October 9, 2020, as evidenced by that certain First Amendment to Memorandum of Master Ground Sublease dated October 9, 2020, recorded as Instrument No. 202010090029942, and that certain Third Amendment to Master Ground Sublease dated \_\_\_\_\_, 202\_, recorded as Instrument No. \_\_\_\_\_, all in the Office of the Register of Deeds for Knox County, Tennessee, (collectively, the “**Master Ground Sublease**”), wherein UTRF leased to CFDC, and CFDC leased from UTRF, the Premises.

D. CFDC and ISP entered into that certain Lease (the “**ISP Lease**”), dated \_\_\_\_\_, 202\_, wherein CFDC leased to ISP, and ISP leased from CFDC, the Premises (the “**ISP Leasehold Estate**”), as evidenced by that certain Memorandum of Lease dated \_\_\_\_\_, 202\_, recorded as Instrument No. \_\_\_\_\_, in the Office of the Register of Deeds for Knox County, Tennessee. Pursuant to the ISP Lease, ISP has agreed to develop and construct on the Premises a high bay laboratory and office building and related improvements (the “**Project**”).

E. University on behalf of its University of Tennessee Knoxville campus (“**UTK**”) and ISP entered into that certain Lease (the “**UTK Lease**”), dated \_\_\_\_\_, 202\_, as evidenced by that certain Memorandum of Lease dated \_\_\_\_\_, 202\_, recorded as Instrument No. \_\_\_\_\_, in the Office of the Register of Deeds for Knox County, Tennessee, wherein ISP leased to University, and University leased from ISP, the high bay laboratory and a portion of the office space on the Premises (“**UTK Premises**”), as more particularly described in Exhibit C attached hereto and incorporated herein by reference, (the “**UTK Leasehold Estate**”). Pursuant to the UTK Lease, ISP agreed to build out the high bay laboratory and office space and related improvements in accordance with plans and specifications to be approved by UTK and University has agreed to make certain pre-paid rent payments to ISP as the Project is constructed.

F. Pursuant to the terms of a Construction and Term Loan Agreement dated \_\_\_\_\_, 202\_, between Mortgagee, ISP and certain individual guarantors named therein, Mortgagee has agreed to provide certain financing for the Project (the “**Loan**”), which Loan is evidenced by a Promissory Note made by ISP to the order of Mortgagee, and secured by, among other things, a Leasehold Deed of Trust, Assignment of Rents, Security Agreement and Fixture Filing dated \_\_\_\_\_, 202\_ (the “**Deed of Trust**”), recorded as Instrument No. \_\_\_\_\_, and an Assignment of Rents and Leases dated \_\_\_\_\_, 202\_ (the “**Assignment of Rents**”), recorded as Instrument No. \_\_\_\_\_, both in the Office of the Register of Deeds for Knox County, Tennessee.

G. In addition to the Deed of Trust, the Assignment of Rents and other loan and security documents relating to the Loan (the “**Loan Documents**”), Mortgagee has conditioned the funding of the Loan on the execution of this Agreement by University, UTRF, CFDC and ISP (each, together with its successors and assigns, a “**Lessor**” and collectively, together with their successors and assigns, the “**Lessors**”). Moreover, University has conditioned the execution of the UTK Lease on the execution of this Agreement by Mortgagee, UTRF, CFDC and ISP.

H. Each Lessor hereby acknowledges the receipt of good, adequate and sufficient consideration for entering into this Agreement in that it will benefit by ISP being provided the Loan, by University entering into the UTK Lease, and by setting forth herein the provisions to govern the conduct of the parties. Mortgagee hereby acknowledges the receipt of good, adequate and sufficient consideration for entering into this Agreement in that it will benefit by ISP entering into the Loan, by Lessors entering into the Master Ground Lease, the Master Ground Sublease, the ISP Lease and the UTK Lease (each, a “**Lease**” and collectively, the “**Leases**”), by ISP entering into the Deed of Trust, and by setting forth herein the provisions to govern the conduct of the parties. The parties hereto now desire to enter into this Agreement so as to establish and clarify their rights, duties and obligations under the ISP Lease and UTK Lease and the Deed of Trust and to further provide for various contingencies as hereinafter set forth.

#### AGREEMENT

NOW, THEREFORE, FOR AND IN CONSIDERATION of the above premises, the mutual covenants hereinafter contained, the benefits each party will receive from the development of the Premises and Mortgagee’s partial financing thereof, University’s entry into the UTK Lease including its agreement to pay prepaid rent, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties do hereby agree as follows:

1. Recitals and Intent of the Parties. By execution and delivery of this Agreement, each party intends and agrees, notwithstanding any provision of any of the Leases to the contrary, that the ISP Lease shall remain in full force and effect without regard to the termination, cancellation or invalidity of any other Lease, that ISP (and its successors and assigns,



including, without limitation, Mortgagee or a purchaser at foreclosure) shall be entitled to quiet and exclusive possession of the Premises, subject only to performance of the rental payment obligations of tenant in accordance with the terms of the ISP Lease (which shall be and remain subordinate to all Loan payments), that, in no event will ISP or Mortgagee ever have any obligation pursuant to or arising out of any of the other Leases, that, in the event of the termination of any Lease, other than the ISP Lease, the Lessor under said terminated Lease shall recognize the sublessee of the lessee under the terminated Lease as its direct lessee to the same extent as if said Lessor was the original Lessor under the sublessee's sublease and the sublessee's sublease shall be deemed a direct lease between the sublessee, as tenant, and said Lessor, as landlord, and that, in no event shall any Lessor have any liability or obligation under or with respect to the Loan or any Loan Document. Further, each party intends and agrees, notwithstanding any provision of any of the Leases and/or Loan Documents to the contrary, that the UTK Lease shall remain in full force and effect without regard to the termination, cancellation or invalidity of any other Lease and/or default under the Loan Documents, that University (and its successors and assigns) shall be entitled to quiet and exclusive possession of the UTK Premises, subject only to performance of the rental payment obligations of tenant in accordance with the terms of the UTK Lease (which shall be and remain subordinate to all Loan payments), that: (a), in the event of the termination of any Lease, other than the UTK Lease, the Lessor under said terminated Lease shall recognize the sublessee of the lessee under the terminated Lease as its direct lessee to the same extent as if said Lessor was the original Lessor under the sublessee's sublease and the sublessee's sublease shall be deemed a direct lease between the sublessee, as tenant, and said Lessor, as landlord; and/or (b), in the event of any default under the Loan Documents, that University (and its successors and assigns) may elect (but shall be under no obligation) to cure such default. Further, each party excepting University, acknowledges and agrees that the Deed of Trust is a perfected, first priority lien upon the ISP Leasehold Estate. University acknowledges and agrees that the Deed of Trust has been recorded as noted in the foregoing Recitals. Nothing in this Agreement shall amend the Master Ground Lease.

2. Stipulations. Each Lessor hereby agrees and stipulates for benefit of Mortgagee that, with respect to each Lease to which it is a party: (a) the Lease is in full force and effect; (b) a true and complete copy of each Lease is attached to the unrecorded copy of this Agreement as Exhibit D and, except as set forth in the foregoing Recitals, the Leases have not been amended or otherwise modified; (c) the term of the Lease has commenced and does not expire prior to December 30, 2072, as to the Premises, subject to the rights of termination provided in the Lease which are subject to the terms of Section 6 hereof; (d) all rentals and amounts due and payable under the Lease up and through the date of this Agreement have been paid in full; (e) to the knowledge of such Lessor, there is currently no existing default or breach under the Lease nor is there currently existing any condition or circumstance,

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which, with the giving of notice or the passage of time, or both, would constitute a default or breach under the Lease; and (f) all consents and approvals required or permitted by the Lease as the same relate to the ISP Lease, the Project or this Agreement, have been obtained and are hereby provided and/or ratified and confirmed, except the approval of all plans and specifications as required by the Development Standards as set forth in Exhibit C to the Master Ground Lease and except the approval of all plans and specifications as required by the UTK Lease.

3. Stipulations regarding Plats and 2015 Declaration. UTRF and CFDC each hereby agrees, confirms, and stipulates that, with respect to the Plats and the Declaration of Access and Utilities Easement dated November 30, 2015, recorded as Instrument No. 201512010033153, in the Office of the Register of Deeds for Knox County, Tennessee (the "2015 Declaration"): (a) the Plats and 2015 Declaration are valid, in full force and effect, and binding on the Master Leased Premises and those Lessors and the same are hereby ratified and confirmed by those Lessors in all respects except to the extent that easements granted by the 2011 Deed are not shown on the 2015 Plat; and (b) none of the easements, licenses, or rights contained in the 2015 Declaration have been modified, diminished, abandoned, or terminated, and all such easements and rights are binding on those Lessors and the Master Leased Premises. University hereby agrees, confirms and stipulates for the benefit of Mortgagee and CFOP that, with respect to the Plats and the 2015 Declaration UTRF was and is authorized to execute the Plats and make the 2015 Declaration.

4. Additional Stipulations and Consents. Each of Lessors hereby agrees and stipulates for benefit of Mortgagee, with respect to each Lease to which it is a party, that: (a) ISP has a valid and enforceable leasehold estate in the Premises pursuant to the ISP Lease; (b) ISP has the right to pledge, assign and/or grant a lien upon ISP's leasehold interest in the Premises as security for any loans, to grant a deed of trust, lien and security interest in and upon the Premises and improvements to be constructed upon the Premises; (c) the Lease does not prohibit any right of Mortgagee to foreclose or sell the leasehold interest subject to the Deed of Trust either by judicial proceedings, under power of sale contained therein, assignment in lieu of foreclosure, assignment, or as otherwise provided in the Deed of Trust; and (d) the Project, generally in accordance with the plans and specifications to be approved and attached as Exhibit E to the ISP Lease, will comply in all respects with all requirements, covenants and conditions set forth or referenced in the Leases, including without limitation, the Development Agreement (as defined in the ISP Lease) and the Development Standards (as defined in the ISP Lease), and the Project and the ISP Lease; (e) the undersigned representative(s) of said party is duly authorized and empowered to enter into this Agreement and bind the said party; (f) this Agreement is fully enforceable in accordance with its terms and the execution, delivery and performance of this Agreement does not violate: (i) any other agreement to which such party is bound or (ii) any applicable

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law, regulation, order, ordinance or policy. Mortgagee agrees for the benefit of University that: (x) the undersigned representative of Mortgagee is duly authorized and empowered to enter into this Agreement and bind Mortgagee; and (x) this Agreement is fully enforceable in accordance with its terms and the execution, delivery and performance of this Agreement does not violate: (i) any other agreement to which Mortgagee is bound or (ii) any applicable law, regulation, order, ordinance or policy.

5. Consent to and Registration of Deed of Trust. Each Lessor acknowledges, with respect to each Lease to which it is a party, in satisfaction of all applicable requirements under the Leases, that: (a) Mortgagee has delivered a copy of the recorded Deed of Trust to each Lessor; (b) this Agreement complies with and satisfies all requirements under the Leases with respect to registration of the Deed of Trust and notification of the name, address and facsimile number of Mortgagee; and (c) Mortgagee is a Leasehold Mortgagee as defined in the Leases and has all rights and privileges of a Leasehold Mortgagee as set forth in the Leases. Each Lessor acknowledges and agrees that the exercise by Mortgagee of any rights, remedies and privileges contained in the Deed of Trust shall not constitute a default under the Leases or this Agreement.
  
6. No Termination of Leases and Recognition of Subleases. Lessors stipulate for benefit of and agree with Mortgagee that the Leases shall not be amended, terminated, rejected, forfeited, cancelled or otherwise modified without the prior written consent of Mortgagee, which may be withheld or conditioned in its sole and absolute discretion, excepting such amendments and modifications to the Master Ground Lease, the Master Ground Sublease, or the CFPI Lease which do not, in any manner, impair or affect the Premises, the ISP Leasehold Estate or the rights, remedies and privileges of Mortgagee under the Deed of Trust or this Agreement. Notwithstanding the foregoing, UT may exercise its right to terminate the Master Ground Lease as provided therein, provided that prior to such termination, UT has provided to Lender notice thereof along with the Sublease Recognition (as hereinafter defined). If any Lease (other than the ISP Lease) is cancelled, rejected, forfeited or otherwise terminated for any reason (a “**Terminated Lease**”), the Lessor under said Terminated Lease shall recognize the sublessee of the lessee under said Terminated Lease as its direct lessee to the same extent as if said Lessor was the original Lessor under the sublessee’s sublease, and the sublessee’s sublease shall be deemed a direct lease between the sublessee, as tenant, and said Lessor, as landlord and shall provide to Mortgagee prior to or contemporaneously with such cancellation, rejection, forfeiture or other termination, written confirmation of such recognition and direct lease (the “**Sublease Recognition**”).

7. Notice of Bankruptcy Matters. In the event that a Lessor files a voluntary petition in bankruptcy, files a petition or answer seeking any reorganization, arrangement, composition, readjustment, liquidation or dissolution or similar relief under the present or any future federal bankruptcy act or any other present or future applicable federal, state or other statute or law, makes an assignment for benefit of its creditors, or seeks or consents to or acquiesces in the appointment of a trustee, receiver or liquidator for Lessor or all or any substantial part of its properties, or an order for relief is entered against a Lessor in any involuntary bankruptcy matter (each, a “**Bankruptcy Event**”), said Lessor shall, no later than three (3) business days thereafter, provide notice thereof to Mortgagee. Each Lessor covenants and agrees that a Bankruptcy Event shall not affect, diminish or impair the ISP Leasehold Estate or the rights, remedies and privileges of Mortgagee under the Deed of Trust or this Agreement. Each Lessor covenants and agrees that it will not seek to reject any Lease as a result of or in connection with any Bankruptcy Event. Further, each Lessor, excepting UT, hereby absolutely and unconditionally assigns to Mortgagee all of Lessor’s rights, as a lessee under any Lease, to elect to terminate any Lease as a result or in connection with any Bankruptcy Event.

8. University Notice and Right to Cure.

a. Each Lessor, upon delivering to the lessee under the applicable Lease any notice required to be given to such lessee by Lessor under the applicable Lease, shall simultaneously deliver a copy of such notice to University. Prior to terminating a Lease or taking any proceeding to enforce termination of a Lease for any reason other than expiration of the term thereof as provided therein, the applicable Lessor shall deliver written notice to University at least sixty(60) days prior to the effective date of such termination or the taking of any proceedings, specifying the reason for such termination or proceeding. University shall have the right, at its option and discretion, to remedy or cure any default under the ISP Lease, within the time permitted for curing or commencing to cure defaults as provided in the applicable Lease, which time shall commence from the date of receipt by University of such notice. University shall have the right to enter upon the Premises for the purposes of remedying any default upon at least one (1) day’s prior written notice to the applicable Lessor. Lessor shall accept performance by or at the instigation of University as if it had been done or performed by the lessee under the applicable Lease. In addition to the foregoing, no default under the Leases (excluding payment defaults) shall occur if University has commenced action to cure the default within sixty (60) days after receiving said notice and is pursuing the completion of said action with reasonable diligence.

b. Mortgagee, upon delivering to ISP (or ISP's successors or assigns) under the applicable Loan Documents any notice required to be given to such lessee by Mortgagee under such Loan Documents, shall simultaneously deliver a copy of such notice to University. Prior to declaring a default or taking any proceeding to enforce the Loan Documents for any reason, Mortgagee shall deliver written notice to University at least sixty (60) days prior to the effective date of such declaration of default or the taking of any proceedings, specifying the reason for such declaration or proceeding. University shall have the right, at its option and discretion, to remedy or cure any default under the Loan Documents, within the time permitted for curing or commencing to cure defaults as provided in such Loan Documents, which time shall commence from the date of receipt by University of such notice. University shall have the right to enter upon the Premises for the purposes of remedying any default upon at least one (1) day's prior written notice to the applicable Lessor. Mortgagee shall accept performance by or at the instigation of University as if it had been done or performed by ISP (or its successors or assigns) under the Loan Documents. In addition to the foregoing, no default under the Loan Documents (excluding payment defaults) shall occur if University has commenced action to cure the default within sixty (60) days after receiving said notice and is pursuing the completion of said action with reasonable diligence.

c. In the event that ISP refinances or any other event occurs pursuant to which Mortgagee's rights hereunder are assigned or terminated, each subsequent mortgagee shall enter an agreement substantially in conformance to this agreement that recognizes University's prepayment of rent and includes University's rights in this section related to notice and cure.

9. Mortgagee Notice and Right to Cure. Each Lessor, upon delivering to the lessee under the applicable Lease any notice required to be given to such lessee by Lessor under the applicable Lease, shall simultaneously deliver a copy of such notice to Mortgagee. Prior to terminating a Lease or taking any proceeding to enforce termination of a Lease for any reason other than expiration of the term thereof as provided therein, the applicable Lessor shall deliver written notice to Mortgagee at least thirty (30) days prior to the effective date of such termination or the taking of any proceedings, specifying the reason for such termination or proceeding. Mortgagee shall have the right, at its option and discretion, to remedy or cure any default under the ISP Lease, within the time permitted for curing or commencing to cure defaults as provided in the applicable Lease, which time shall commence from the date of receipt by Mortgagee of such notice. Mortgagee shall have the right to enter upon the Premises for the purposes of remedying any default upon at least one (1) day's prior written notice to the applicable Lessor. Lessor shall accept performance

**Commented [LCV1]:** It is possible that when a lender is identified, the lender may require negotiation of a time period for cure. UT requests approval to negotiate a time limit for the cure period and/or the alternative of granting UT first priority to purchase the note.

by or at the instigation of Mortgagee as if it had been done or performed by the lessee under the applicable Lease. In addition to the foregoing, no default under the Leases (excluding payment defaults) shall occur if Mortgagee has commenced action to cure the default within sixty (60) days after receiving said notice and is pursuing the completion of said action with reasonable diligence.

**Commented [LCV2]:** It is possible that when a lender is identified, the lender may require negotiation of a time period to cure.

10. Non-Disturbance and Attornment. Lessors stipulate and agree that in the event of any foreclosure or sale of the leasehold interest subject to the Deed of Trust either by judicial proceedings, under power of sale contained therein, assignment in lieu of foreclosure, or assignment by Mortgagee, all right, title and interest of ISP in and to the Premises may, without the consent of Lessors, be assigned to or vested in the purchaser at such foreclosure or sale or in an assignee or sublessee of Mortgagee; and, notwithstanding that any Lessor's consent to said purchase or assignment has not been obtained, such assignee or purchaser shall be vested with all right, title and interest of ISP under the ISP Lease in and to the Premises as though each Lessor had expressly consented thereto. In such event, such assignee or purchaser, as applicable, shall attorn to Lessor under the ISP Lease as its landlord under the terms of the ISP Lease which shall operate as a direct lease with Lessor under the ISP Lease, as landlord, and assignee or purchaser, as applicable, as tenant. No default under any Lease shall occur as a result of such foreclosure, sale, or assignment. Upon the timely compliance with all of the terms and conditions of the ISP Lease, the assignee or purchaser, as applicable, shall be entitled to quiet enjoyment of the Premises for the remaining term of the ISP Lease and the rights of occupancy and possession of the Premises and all other rights and privileges of assignee or purchaser, as applicable, with respect to the Premises shall not be disturbed and shall continue in full force and effect in accordance with and subject to all the terms and provisions of the ISP Lease.

11. Limitation of Liability. Lessors stipulate and agree that Mortgagee and such assignee or purchaser, as applicable, shall not be liable or responsible in any manner for any obligations or covenants under the ISP Lease unless and until Mortgagee, assignee or purchaser, as applicable, becomes the owner of the ISP Leasehold Estate by foreclosure, assignment in lieu of foreclosure, or otherwise, in which event Mortgagee, assignee or purchaser, as applicable, shall be liable for such obligations and covenants of ISP under the ISP Lease only so long as it remains the owner of the ISP Leasehold Estate. Notwithstanding the foregoing, Mortgagee, assignee or purchaser, as applicable, shall not, in any event, be:

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**Deleted:** leasehold estate

- a. liable in any way or to any extent under the ISP Lease or otherwise for: (i) any past act or default, including, without limitation, any rent or other sums payable, on the part of ISP, and (ii) any covenants or obligations, including, indemnification, due, owing or to be performed prior to the date Mortgagee, assignee or purchaser, as applicable, becomes the owner of the ISP Leasehold Estate; or,

**Deleted:** leasehold estate of ISP

b. bound by any amendments or modifications of the ISP Lease or any other Lease made without Mortgagee's prior written consent, except to the extent allowed in this Agreement,

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12. Exculpation. No officer, director, shareholder, partner, employee or principal of Mortgagee, shall have any personal liability with respect to any of the provisions of any Lease or this Agreement, or arising from or in connection with any Lease, this Agreement, or the Project. In the event Mortgagee is in breach or default with respect to any of its obligations arising under this Agreement, Lessor, as applicable, shall look solely to the interests of Mortgagee in the Premises for satisfaction of Lessor's remedies.

13. Prohibited Transfers and Liens. Each Lessor may: (a) without the prior written consent of Mortgagee, transfer, assign, convey or mortgage any interests in the Premises; (b) allow, suffer or permit any transfer thereof or any lien upon Lessor's interest in the Premises by operation of law or otherwise; or (c) without the prior written consent of Mortgagee, encumber, in any manner, any interest in the Premises; *provided that*, any such transfer, assignment, conveyance, mortgage or lien shall be subordinate to and subject to the ISP Lease, the ISP Leasehold Estate, the Assignment of Rents, the Collateral Assignment and the Deed of Trust. Mortgagee hereby consents to the Leases and acknowledges and agrees that the Deed of Trust is subordinate to and subject to the Leases and the reversionary and fee interests of University in the Premises. Mortgagee hereby further consents that in the event CFDC or UTRF becomes the Lessor under the ISP Lease by operation of this Agreement, CFDC and UTRF shall have the right, without the prior written consent of but with prior notice to Mortgagee, to assign its interest as Lessor under the ISP Lease to a taxable subsidiary of UTRF provided that such assignment shall not, in any manner, affect the Premises, the ISP Leasehold Estate or the rights, remedies and privileges of Mortgagee under the Deed of Trust, the Assignment of Rents the Collateral Assignment or this Agreement.

14. Lien Waiver. Each Lessor hereby: (a) agrees that every lien, every right to institute proceedings to obtain a lien, all rights of levy or distraint, security interest or other interest Lessor may now or hereafter have in any personal property of ISP located now or in the future upon the Premises (the "**Personal Property**") shall be subject to Mortgagee's prior rights under the Loan Documents; (b) agrees that, to the extent allowed under the Loan Documents, Mortgagee or its representatives may, upon at least one (1) day's prior written notice to the applicable Lessor, enter upon the Premises to inspect or remove the Personal Property, and may advertise or conduct a public or private auction thereon; and (c) agrees that Mortgagee, at its option, to the extent allowed under the Loan Documents, may enter the Premises for the purposes of repossessing, removing, selling or otherwise administering the Personal Property.

15. Insurance and Condemnation. The parties stipulate and agree to make available to ISP, the University, as lessee, and Mortgagee all insurance or condemnation proceeds as specified under the UTK Lease.

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16. Estoppel Certificate. From and after the Effective Date, upon the request of Mortgagee, each party shall execute, acknowledge and deliver to Mortgagee, within fifteen (15) days after request by Mortgagee, a statement in writing, certifying as of the date thereof, if such is the case, the matters set forth in paragraphs 2, 3 and 4 of this Agreement; any alleged defaults under the Leases or this Agreement; that a Terminated Lease has terminated, if applicable, and the ISP Lease is now between Lessor of said Terminated Lease, as landlord and ISP, as tenant; and, providing such other information as may be reasonably requested by Mortgagee.

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17. Notices. All notices, demands, consents, approvals, requests and other communications under this Agreement Lease shall be in writing and shall be either (a) delivered in person, (b) sent by certified mail, return receipt requested, or (c) delivered by a recognized overnight delivery service and addressed as follows:

a. To University: The University of Tennessee

- 1. Office of Real Estate Administration,
- 2. Knoxville, TN 37996-0174
- 3. Attention: Austin Oakes

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b. Copy to: Ann McGauran

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- 1. State of Tennessee
- 2. Department of Finance and Administration
- 3. OFFICE OF THE STATE ARCHITECT
- 4. William R. Snodgrass Tennessee Tower
- 5. 312 Rosa L. Parks Avenue, Suite 2100
- 6. Nashville, TN 37243,
- 7. David L. Miller, Senior Vice President
- 8. And Chief Financial Officer
- 9. The University of Tennessee

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505 Summer Place  
Knoxville, Tennessee 37902

Deleted: <#>813 Andy Holt Tower¶  
Knoxville, TN 37996¶

c. To UTRF: University of Tennessee Research Foundation

Formatted: Indent: Left: 2", No bullets or numbering

- 1. 600 Henley Street, Suite 211
- 2. Knoxville, TN 37996
- 3. Attention: President

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- d. Copy to: Kennerly Montgomery & Finley, P.C.
  - 1. P.O. Box 442
  - 2. Knoxville, TN 37901
  - 3. Attention: William E. Mason, Esq.
  
- e. To CFDC: Cherokee Farm Development Corporation
  - 1. 2450 E. J. Chapman Drive, Suite 216
  - 2. Knoxville, TN 37996
  - 3. Attention: Tom Rogers, President
  
- f. Copy to: Kennerly Montgomery & Finley, P.C.
  - 1. P.O. Box 442
  - 2. Knoxville, TN 37901
  - 3. Attention: William E. Mason, Esq.
  
- g. To ISP: Innovation South Partners, GP
  - 1. 502 Union Avenue
  - 2. Knoxville, Tennessee 37902
  - 3. Attention: Ronald A. Watkins, Jr.
  
- h. Copy to: James W. Parris, Esq.
  - 1. Bernstein, Stair & McAdams, LLP
  - 2. 116 Agnes Road
  - 3. Knoxville, TN 37919

i. Mortgagee:

j. Copy to:

18. A notice, demand, consent, approval, request and other communication shall be deemed to be duly received: (a) if delivered in person or by a recognized delivery service, when left at the address of the recipient; and (b) if sent by certified mail, return receipt requested, three (3) business days after the date on which such notice was deposited in the U.S. Mail. Either party may change its address for the purpose of this paragraph by giving written notice of such change to the other party in the manner provided in its paragraph.

19. Remedies of Mortgagee. In the event of a default or breach of this Agreement by ISP or any Lessor, excepting University, or Mortgagee (a “**Defaulting Party**”), Mortgagee and/or University, in addition to all remedies conferred upon Mortgagee or University at law or in equity, shall, with respect to such Defaulting Party, be entitled to specific performance

of this Agreement and collection of reasonable and actual attorney's fees and costs in enforcing such remedies, none of which shall be to the exclusion of any other.

20. Miscellaneous Provisions.

- a. Successors and Assigns. The rights granted to Mortgagee hereunder shall extend to any successor(s) or assignee(s) of Mortgagee. The rights granted to University hereunder shall extend to any successor(s) or assign(s) of University.
- b. Authorizations. The parties hereto represent to one another, that each has obtained all necessary approvals and authorizations from their respect members, shareholders, directors, boards and/or governing entities for the execution and delivery of this Agreement.
- c. Agreement Controls. In the event of a conflict between the terms of this Agreement and the provisions of any Lease and/or Loan Documents, the terms and provisions of this Agreement, in all incidents, shall control, govern and prevail. All rights, covenants, conditions, agreements, restrictions and reservations contained in this Agreement shall run with the land, shall inure to the benefit of and shall be binding upon the parties and their respective heirs, legal representatives, successors and assigns. As between Mortgagee and ISP, in the event of a conflict between the terms of this Agreement and any of the Loan Documents, the terms and provisions of the Loan Documents, in all incidents, shall control, govern and prevail.
- d. No Waiver of Breach. No failure by any party hereto to insist upon the strict performance by any other party of any covenant, agreement, term or condition of this Agreement, or to exercise any right or remedy consequent upon a breach thereof, shall constitute a waiver of any such breach or of such covenant, agreement, term or condition. No waiver of any breach shall affect or alter this Agreement, but each and every covenant, condition, agreement and term of this Agreement shall continue in full force and effect with respect to any other then existing or subsequent breach.
- e. Gender. The use herein of any gender includes all others, and the singular number includes the plural and vice-versa, whenever the context so requires.
- f. Captions. Captions in this Agreement are inserted for convenience of reference only and do not define, describe or limit the scope or the intent of this Lease or any of the terms hereof.
- g. Entire Agreement. This Agreement contains the entire agreement between the parties regarding the subject matter hereof. Any oral or written representations, agreements, understandings and/or statements not expressly included in this Agreement shall be of no force and effect.
- h. Waiver; Amendment. No modification, waiver, amendment, discharge or change of this Agreement shall be valid unless the same is in writing and signed by the

party against which the enforcement of such modification, waiver, amendment, discharge or change is or may be sought.

- i. Time. Time is of the essence of each obligation of each party hereunder.
- j. Governing Law. This Agreement shall be construed and enforced in accordance with the laws of the State of Tennessee. The parties understand and agree that the University reserves all immunity, defenses, rights or actions, to the extent applicable, arising out of its status as a sovereign state or entity, including but not limited to those under the Eleventh Amendment to the United States Constitution. No provision of this Agreement shall be construed as a waiver of such immunities, defenses or actions.
- k. Binding Effect. This Agreement shall bind and inure to the benefit of the respective heirs, assigns, personal representatives, and successors of the parties hereto.
- l. Execution of Other Instruments. Each party agrees that it shall, upon the other's request, take any and all steps, and execute, acknowledge and deliver to the other party all further instruments necessary or expedient to effectuate the purpose of this Agreement.
- m. Severability. If any term, provision, covenant or condition of this Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the provisions shall remain in full force and effect and shall in no way be affected, impaired or invalidated.
- n. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original and when taken together will constitute one instrument.

*[Remainder of page intentionally blank – signature pages follow]*

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IN WITNESS WHEREOF, the parties have executed this Agreement as of the day and year first written above.

**UNIVERSITY:**

THE UNIVERSITY OF TENNESSEE

By: \_\_\_\_\_  
David L. Miller, Senior Vice President and Chief Financial Officer

STATE OF TENNESSEE    )  
COUNTY OF KNOX        )

Before me, the undersigned, a Notary Public of the State and County aforesaid, personally appeared, **David L. Miller**, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who, upon oath, acknowledged himself to be the Senior Vice President and Chief Financial Officer of The University of Tennessee, an instrumentality and agency of the State of Tennessee, the within named bargainor, and that he as such officer, being authorized to do so, executed the foregoing instrument for the purposes therein contained, by signing the name of such instrumentality and agency by himself as officer thereof.

WITNESS my hand, at office, this \_\_\_ day of \_\_\_\_\_, 202\_\_.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

**[additional signatures on following pages]**

**UTRF:**

UNIVERSITY OF TENNESSEE RESEARCH FOUNDATION

By: \_\_\_\_\_  
Stacey Patterson, President

STATE OF TENNESSEE    )  
COUNTY OF KNOX        )

Before me, the undersigned, a Notary Public of the State and County aforesaid, personally appeared, **Stacey Patterson**, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who, upon oath, acknowledged himself to be the President of University of Tennessee Research Foundation, a \_\_\_\_\_, the within named bargainer, and that he as such officer, being authorized to do so, executed the foregoing instrument for the purposes therein contained, by signing the name of the \_\_\_\_\_ by himself as officer thereof.

WITNESS my hand, at office, this \_\_\_\_ day of \_\_\_\_\_, 202\_\_.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

**[additional signatures on following pages]**

**CFDC:**

CHEROKEE FARM DEVELOPMENT CORPORATION

By: \_\_\_\_\_  
Tom Rogers, President

STATE OF TENNESSEE )

COUNTY OF KNOX )

Before me, the undersigned, a Notary Public of the State and County aforesaid, personally appeared, **Tom Rogers**, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who, upon oath, acknowledged himself to be the President of Cherokee Farm Development Corporation, a Tennessee not-for-profit public benefit corporation, the within named bargainor and that he, as such officer, being duly authorized to do so, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as officer thereof.

WITNESS my hand, at office, this \_\_\_\_ day of \_\_\_\_\_, 202\_\_.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

**[additional signatures on following pages]**

**ISP:**

INNOVATION SOUTH PARTNERS, GP,  
a Tennessee general partnership

By:

By: \_\_\_\_\_  
Ronald A. Watkins, Jr., Managing Member

STATE OF TENNESSEE )

COUNTY OF KNOX )

Before me, the undersigned, a Notary Public of the State and County aforesaid, personally appeared, **Ronald A. Watkins, Jr.**, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who, upon oath, acknowledged himself to be the Managing Member of \_\_\_\_\_ Partner of Cherokee Partners, GP, by himself as Managing Member of the Managing Partner.

WITNESS my hand, at office, this \_\_\_\_ day of \_\_\_\_\_, 202\_\_.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

**[additional signatures on following pages]**

**Mortgagee:**

\_\_\_\_\_

By: \_\_\_\_\_

STATE OF TENNESSEE )

COUNTY OF \_\_\_\_\_ )

Before me, the undersigned, a Notary Public of the State and County aforesaid, personally appeared, , with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who, upon oath, acknowledged himself to be the, a national banking association, the within named bargainor, and that he, as such officer, being duly authorized to do so, executed the foregoing instrument for the purposes therein contained, by signing the name of the association as officer thereof.

WITNESS my hand, at office, this \_\_\_\_ day of \_\_\_\_\_, 202\_\_.

\_\_\_\_\_

Notary Public

My Commission Expires: \_\_\_\_\_



EXHIBIT A  
Legal Description of Land

EXHIBIT B  
Legal Description of the Premises

EXHIBIT C  
Legal Description of the UTK Premises

EXHIBIT D  
Copy of Leases  
[to be attached to unrecorded Agreement]

## Exhibit J

### Project Cost of Leased Premises

Survey	\$	5,871.15
Phase I Environmental Study	\$	880.67
Appraisal	\$	3,816.25
Construction - UTK	\$	15,395,712.00
Construction - Common Connector	\$	196,875.00
Construction Contingency	\$	770,000.00
A&E	\$	1,394,000.00
Commissioning	\$	100,000.00
Recording Fees	\$	38,162.50
Title Insurance/Closing	\$	32,291.34
Lender Inspections	\$	10,568.08
Printing/Photography	\$	5,871.15
Landlord Project Expenses	\$	190,967.71
Legal/Accounting	\$	35,226.92
Project Management Services	\$	372,359.72
Soft Cost Contingency	\$	65,383.42
Total	\$	18,617,985.91

EXHIBIT K

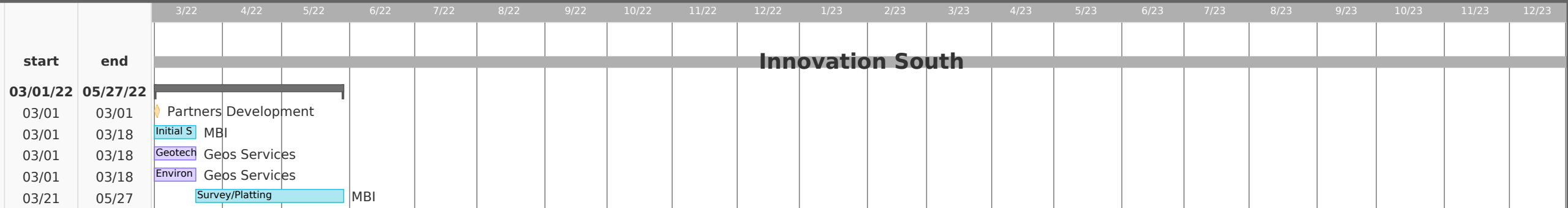
Development costs prior to Landlord presenting GMP to Tenant:

Survey	\$ 5,871.15
Environmental Study – Phase I	880.67
Appraisal	3,816.25
Architecture/Engineering	680,000.00
Legal Fees	25,000.00
Title Insurance	16,145.00
Project Management Fees	93,090.00
Preconstruction Expenses/Estimating	<u>110,000.00</u>
Total	934,803.07

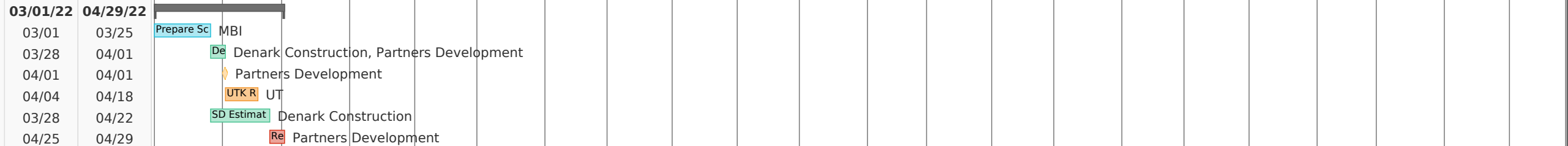


### Innovation South

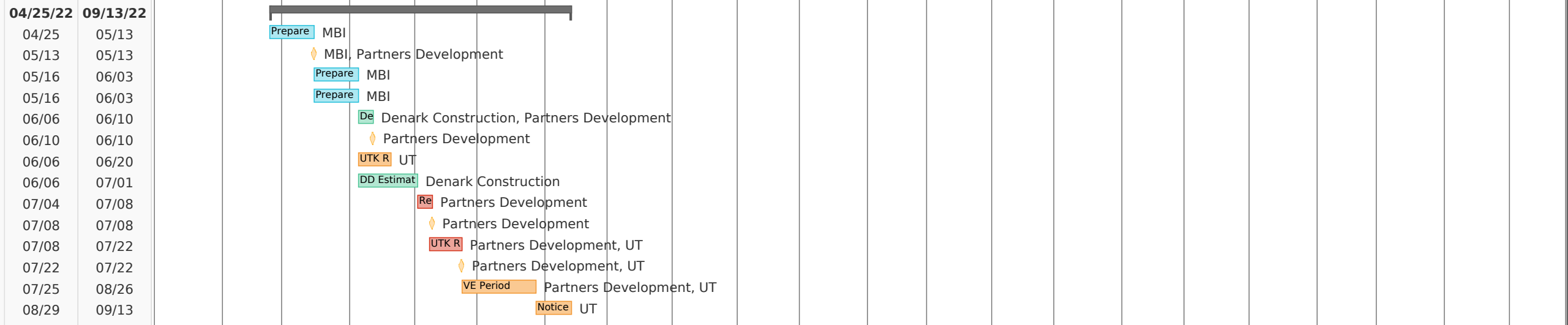
#### BUILDING DESIGN



#### Schematic Design



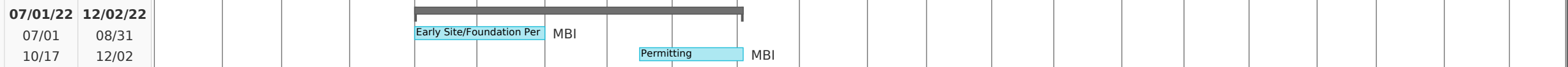
#### Design Development



#### Construction Documents



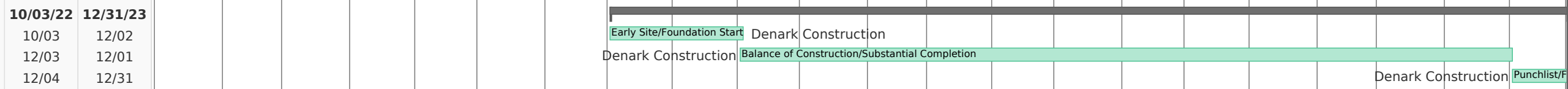
#### PERMITTING



#### FINANCING



#### CONSTRUCTION





# Innovation South High Bay Research Building Program

University of Tennessee

Knoxville, TN

05.11.2021

 LORD AECK SARGENT





THE UNIVERSITY OF  
**TENNESSEE**  
KNOXVILLE

Prepared by  
**Lord • Aeck • Sargent**  
Architecture

**LAS Consultants**  
Newcomb & Boyd, MEP | FP Consultants and Engineers  
KSi, Structural Engineers  
Civil & Environmental Consultants, Inc. | Civil + Utilities



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0.2. BUILDING CONCEPT PLANS

0.3. HIGH BAY PLANS

**04 SYSTEMS NARRATIVES**

**05 SPACE DIAGRAMS**

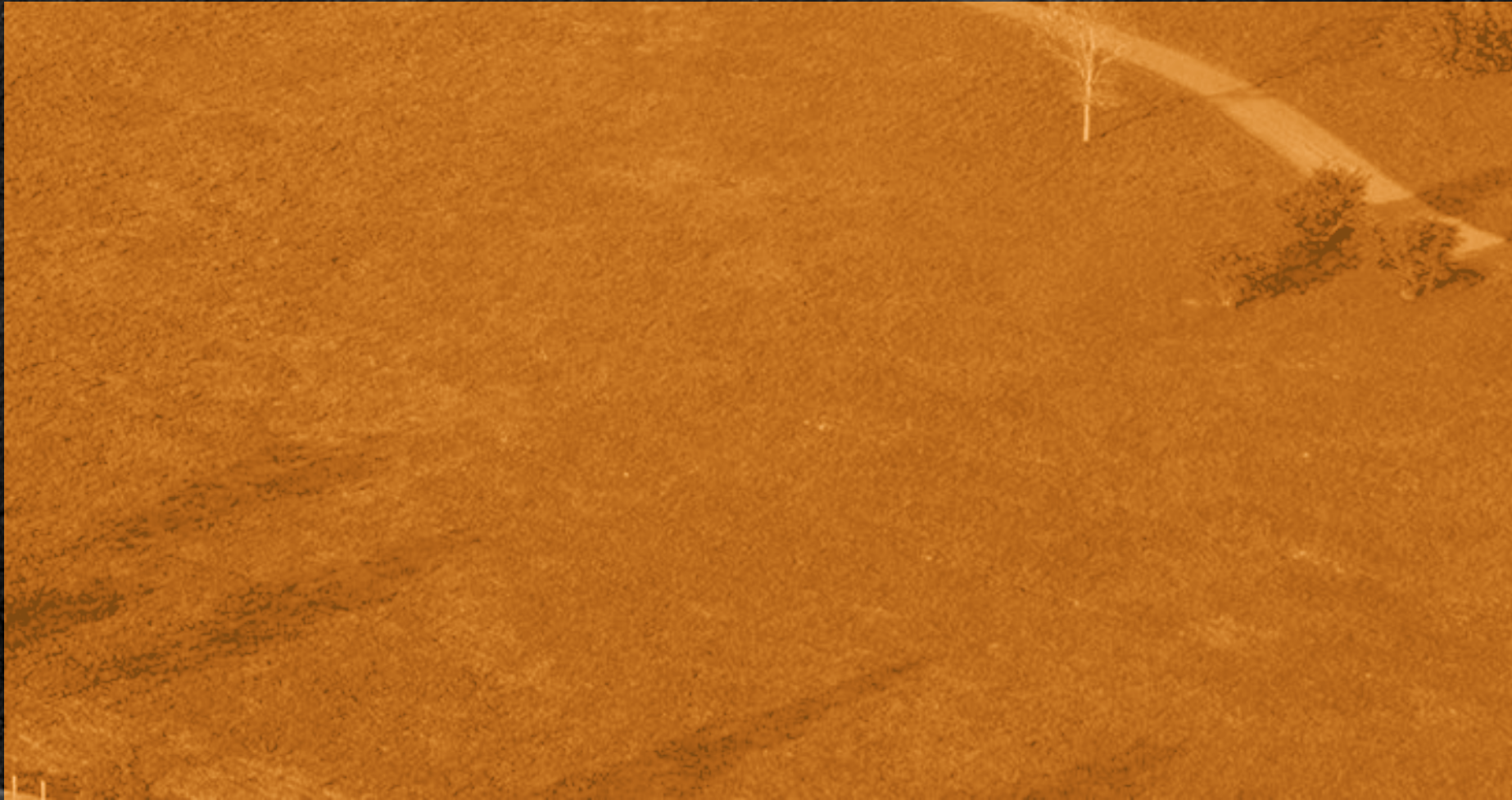
0.1. CORE RESEARCH FACILITIES

0.2. HIGH BAY LAB

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1.0

EXECUTIVE SUMMARY

# 01 EXECUTIVE SUMMARY

## Project Summary & Overview

UT Knoxville engaged the design team to program the new Translational Science Research component (approximately 35,000 square feet) of a new 65,000 square foot facility to be located on the Cherokee Farm campus. UT Knoxville is anticipating to enter into a long-term lease with a private developer and the UT Research Foundation (UTRF) to inhabit this 35,000 sf component.

The focus of this program is to enable the developer and UTRF to design and implement the flexible high bay research space required for the UT Knoxville Translational Science Research component, and is limited to the 35,000 sf component only.

The design team met with the following representatives between January through April:

- Center for Renewable Carbon
  - Timothy Rials
  - David White
- Civil and Environmental Engineering
  - Dayakar Penumadu
- Mechanical, Aerospace and Biomedical Engineering
  - Bill Dunne
  - Uday Vaidya
  - Suresh Badu
  - Tony Schmitz
- Tickle College of Engineering
  - Bill Dunne
- Materials Science and Engineering
  - David Harper
- Chemical & Biological Engineering
  - Gobet Avincula
- UT Research Park
  - Tom Rogers
  - Rickey McCallum
- UT Administration
  - Marc Gibson
- UT Facilities
  - Dan Smith
  - Jim Campbell

Prior to engaging Lord Aeck Sargent to prepare this program document, UTK had begun working with Partners Development and its architect MBI to prepare initial concepts for the project. Several project coordination/programming meetings included Joe Ledford from MBI and, for one or two meetings, Russ Watkins from Partners Development.

The primary components discussed include a high bay space, laboratory, offices and associated support spaces. Equipment is a prime component in the layout of the high bay space, and requires fine attention to detail with regard to placement, access to utilities, clearances and flexibility. The

functional requirements and relationships are provided in the following diagrams, data and narratives.

### Lab Component

The University of Tennessee Knoxville Innovation South build-out is, in part, a laboratory building which will be capable of supporting a wide range of research and teaching capabilities, some of which are well defined and some of which are to be discovered as the building matures throughout design and construction.

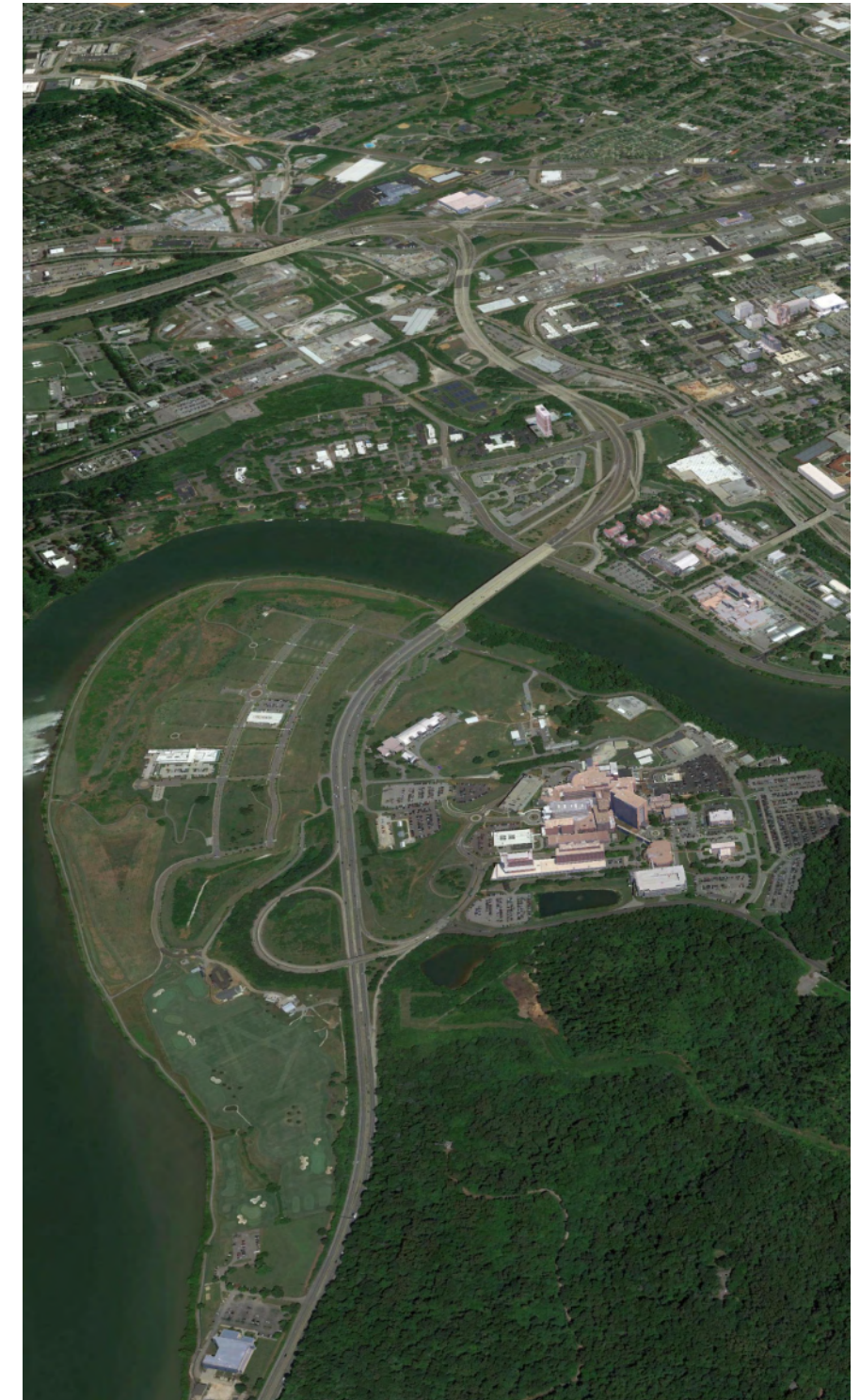
The three types of lab space in the project include a High Bay Lab of 14,500 square feet, High Bay support Labs of 4,752 square feet, and three assignable research module labs, or Innovation Labs, totaling 2,376 square feet.

The High Bay Lab is to be subdivided into two areas, with one area adjacent the Loading Docks to be provided with a 20-ton biaxial bridge crane. This large, open plan space will contain a variety on large analytical tools which will, in addition to the Support Labs, support the mission of Translational Science Research on the campus.

High Bay equipment, as well as equipment located in High Bay Support Labs, will be service intense, and will include high-capacity power and data requirements, service gases and point of use exhaust systems for either particulates, or fumes, or heat generated by the tools. Exhaust systems have been programmed to remove fumes and heat, and should be confirmed as to size, location, and volume during Design. One area or particulate generation, the Cross Laminated Timber area of study, is to have one tool set with wood particulate exhaust – this system will need to be sized and provided as a part of the equipment procurement, with the design allowing for its inclusion.

The Innovation Labs are more traditional research labs, designed to be divisible for different invited research groups, and designed to provide access to the lab services – water, gases, power, data, exhaust, storage, and safety features – required of lab work of this type.

The building is to support work in the areas of Renewable Carbon, Civil and Environmental Engineering and Joint Institute of Advanced Materials, Mechanical Engineering, and the UT Research Park.







2.0

**SITE ANALYSIS**



# 02 SITE ANALYSIS

## Master Plan and Site Context

The University of Tennessee – Knoxville's 2009 Cherokee Farm Campus Master Plan established a framework for future research and development facilities in around 77-acres of developable land along the Tennessee River. The master plan calls for three quadrangles of buildings that open up with views of the surrounding landscape and river.

The Innovation South High Bay Research site is situated adjacent to one of the proposed quadrangles and east of the existing Joint Institute for Advanced Materials (JIAM) building. For a detailed review of the site conditions, refer to the Site & Civil Engineering Narrative in Section 04 of this document.



UTK Cherokee Farm Context



UTK Cherokee Farm Campus Master plan

Site Analysis





3.0

PROJECT SUMMARY

# 03 PROJECT SUMMARY

## 0.1. Building Program

### Program Summary

The following table outlines the breakdown of programmatic elements in the proposed building.

UTK Innovation Lab South							
PROJECTED SPACE UTILIZATION		Research Lab Module size (large)	Width	Length	Module		
			11.00	27.00	297		
	Program Quantities		NASF Allocation			Total Program Quantities	Remarks
	Proposed	Occ. Load	NASF / person	Module Size	Modules / Room	NASF per room	
<b>Conference + Collaboration</b>							
Huddle Rooms / Collaboration	2	4	30	120		120	240
Small Conference Room	1	10	30	300		300	300
Large Conference / Lecture	1	80	15	1,200		1,200	1,200
Storage: Large Conference	1	0	0			70	70
<b>Sub-Total</b>							<b>1,810</b>
<b>Offices + Office Support</b>							
Lobby + VR Stations	1	10				900	900
Break Room	1	8				500	500
Offices: Hoteling	4	1		120		120	480
Offices: Grad / Open Office	8	1		70		70	560
Modeling & Simulation Room	1	6				770	770
3D Printing Room	1	4				350	350
<b>Sub-Total</b>							<b>3,560</b>
<b>Research Labs + Lab Support</b>							
Research Lab (3 modules each)	2			297	3.0	891	1,782
Research Lab (2 modules each)	1			297	2.0	594	594
Lab: Haz Mat + Storage	1			297	2.0	594	594
Lab: Testing	1			297	2.0	594	594
Lab: Fiber Preforming Room	1			297	2.0	594	594
Lab: Machining Center (High Bay Support)	1			297	6.0	1,782	1,782
Lab: Computed Tomography & Support	1			297	4.0	1,188	1,188
<b>Sub-Total</b>							<b>7,128</b>
<b>High Bay</b>							
High Bay Floor							7,250
High Bay w/ Bridge Crane							7,250
<b>Sub-Total</b>							<b>14,500</b>
<b>Department Sub-Total</b>							<b>26,998</b>
<b>Building Services</b>							
Electrical Room	1					In gsf	
Mechanical Rooms	1					rooftop or In gsf	
Telecom / Data	2					120	240
UPS	1					in gsf	
<b>Sub-Total</b>							<b>240</b>
						<b>Proposed</b>	
Total Program NASF							<b>27,238</b>
Net Area to Gross Area Conversion							76%
<b>Total Building GSF</b>							<b>35,700</b>
<b>Exterior Service Yard</b>							
Unconditioned Storage	1						1,022
Loading Dock	1						237
Service Yard Equipment	1					Includes: SWGR, 10-ton chiller, generator, argon tank, tran, UPS	3,250
<b>Sub-Total</b>							<b>4,509</b>

Site Aerial Showing JIAM Under Construction and the Innovation South Site

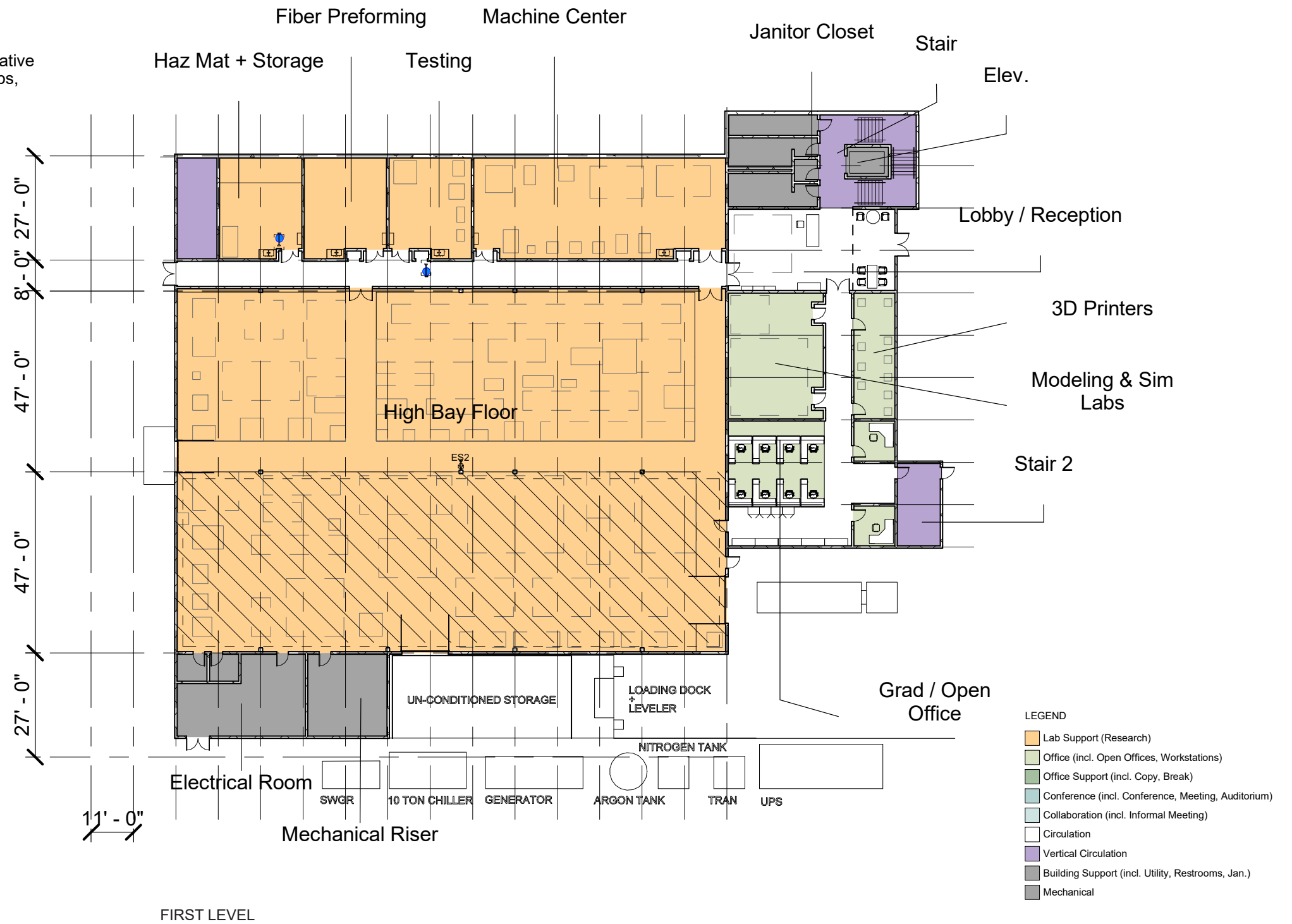


# 03 PROJECT SUMMARY

## 0.2. Building Concept Plans

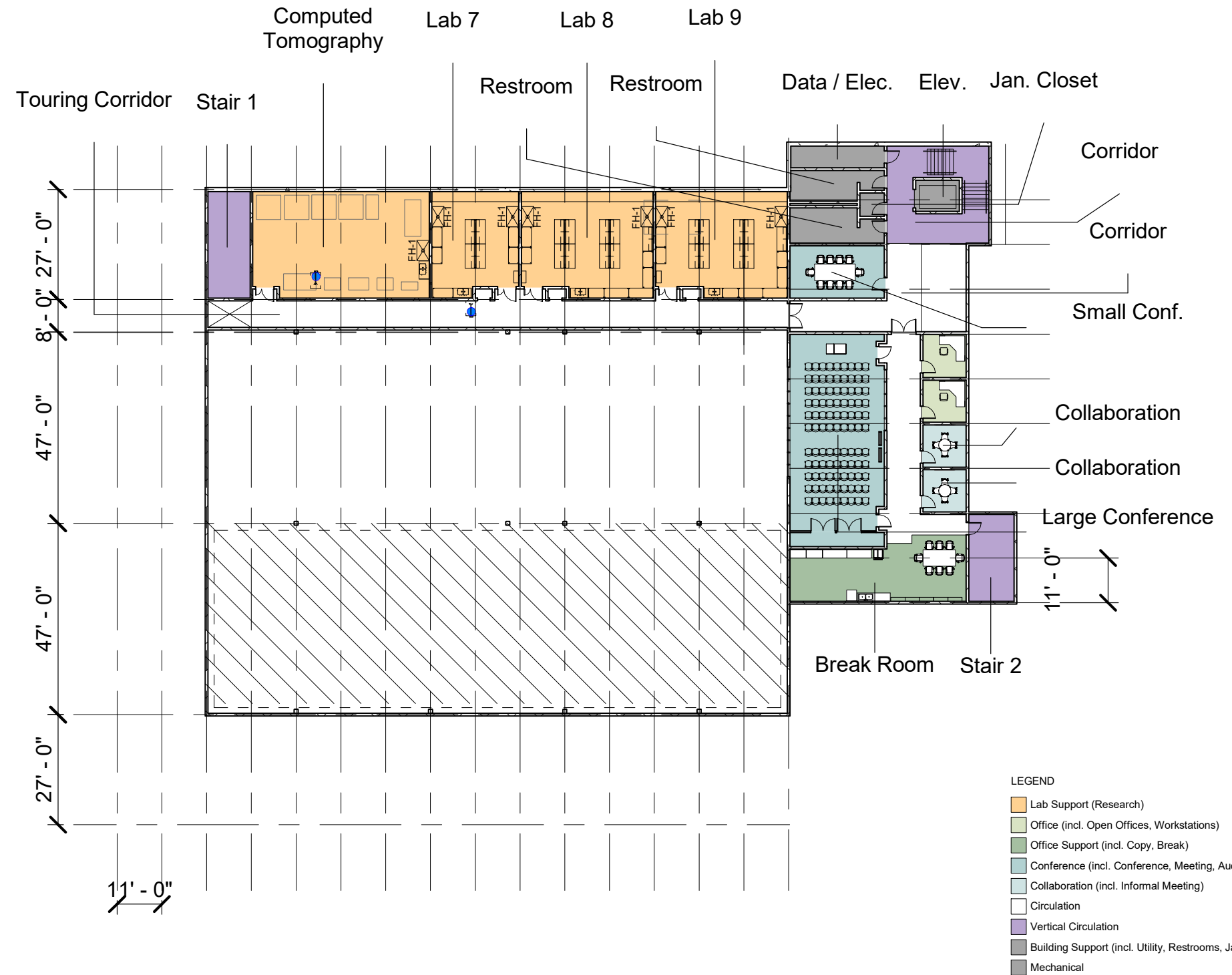
### Overview

The overall building concept, based on layouts by the Partners Development/MBI Team, creates a building with both lab and administrative functions. The ground floor features the high bay space and support labs, with administrative functions on the right side of the plan.



### 0.2. Building Concept Plans

The second level features high bay space that is open to below and a continuation of support labs and administrative functions above.



SECOND LEVEL

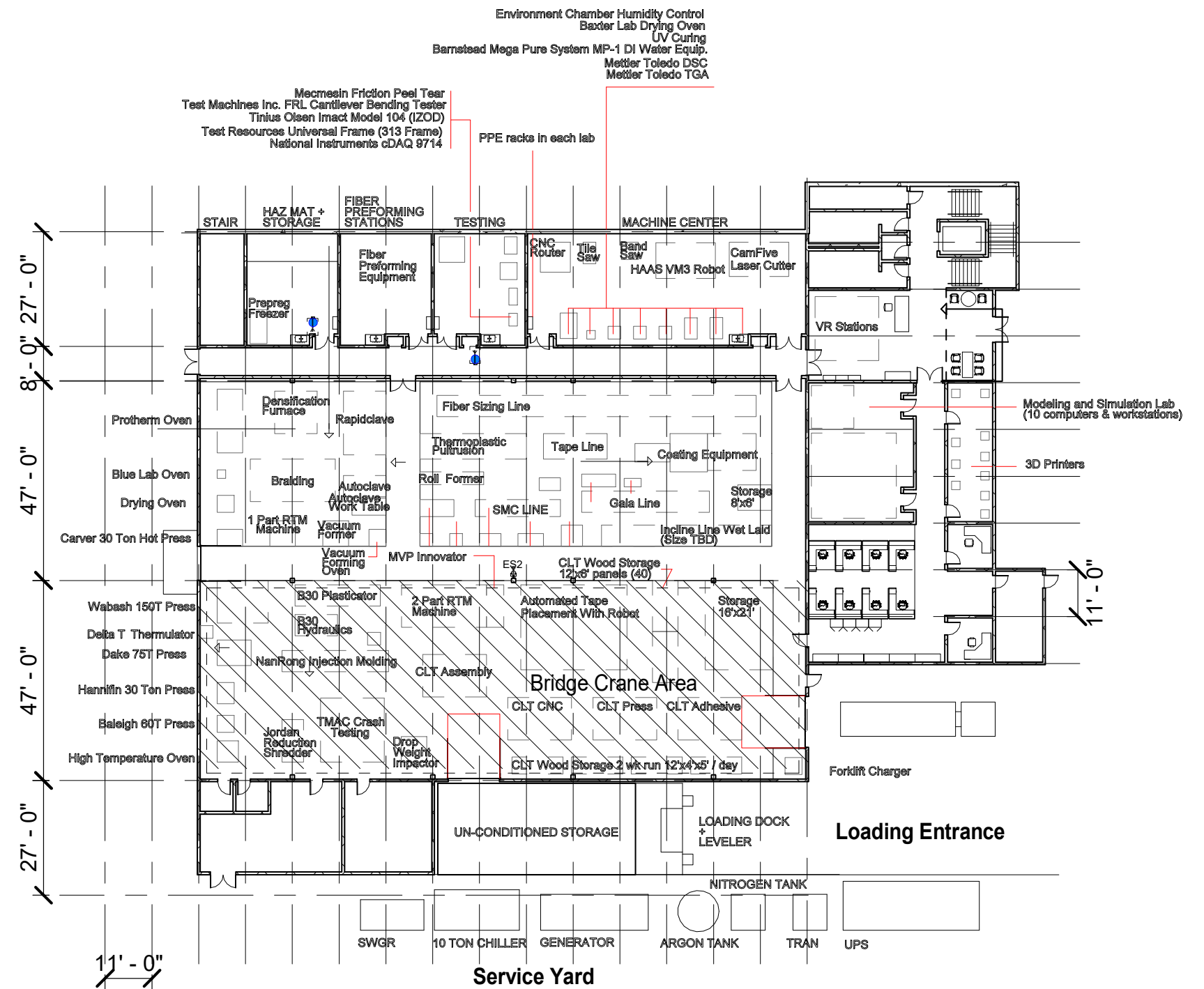


# 03 PROJECT SUMMARY

## 0.3. Overall Plans - First Level

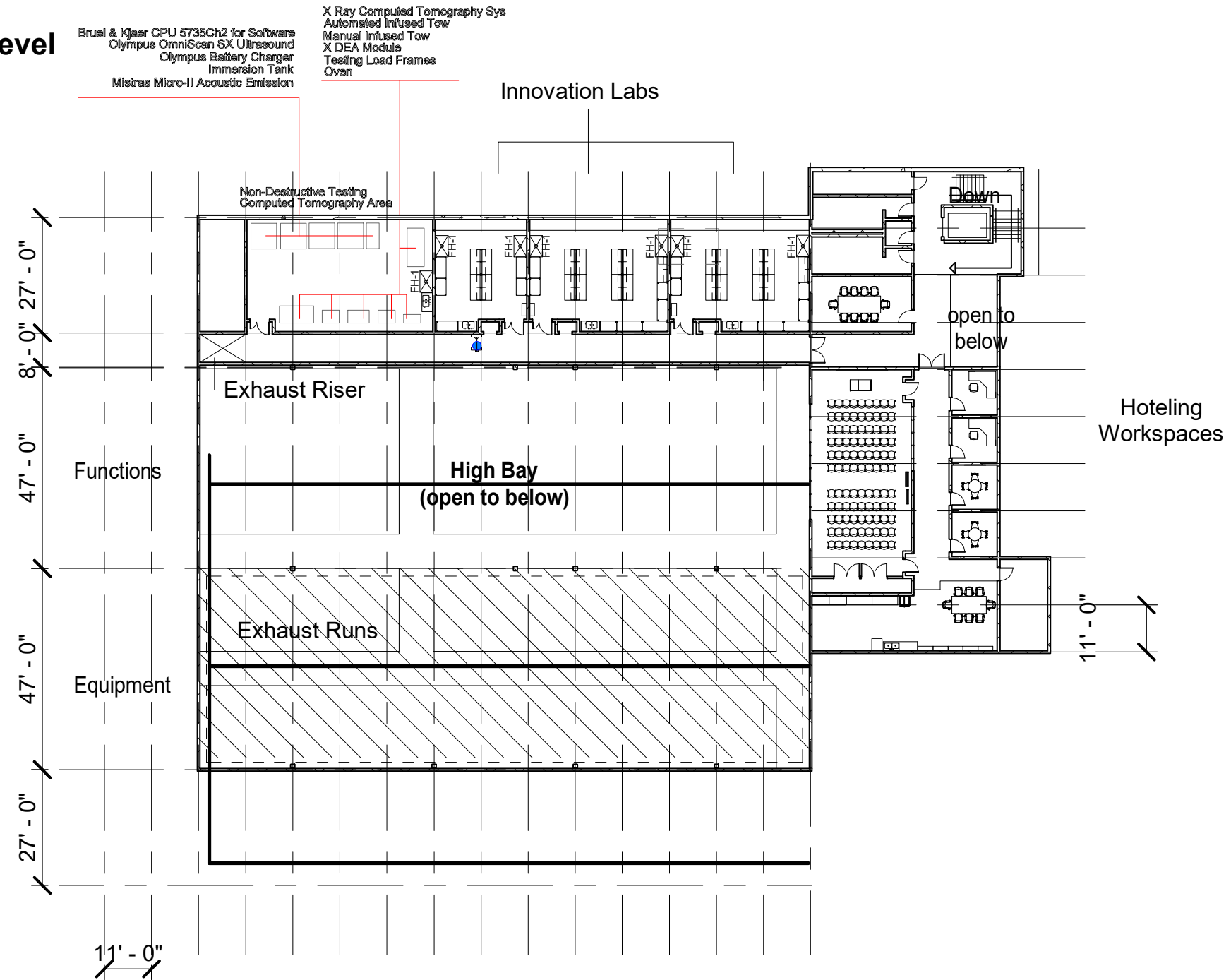
### Overview

The following images show an overview of the equipment layout for the conceptual building.



FIRST LEVEL

0.3. Overall Plans - Second Level



SECOND LEVEL

# 03 PROJECT SUMMARY

## 0.3. High Bay Equipment List

EQUIPMENT	ELECTRICAL	FOOTPRINT	HIGH OR LOW BAY?	CRANE?
<b>High Bay - No Bridge Crane</b>				
<b>SMC Line</b>	480V,60A,3ph	20'x4'	High	No
SMC Mixer	230V,30A,1ph	3'x3'	High	No
Fume Collector	120V, 15A,1ph	3'x3'	High	No
SMC Flammable Cabinet	-	3'x5'	High	No
SMC LCCF Creel	-	3'x5'	High	No
SMC work tables	-	4'x8' ea	High	No
SMC Fiberglass Creel	-	3'x6'	High	No
SMC Maturation oven	480V, 3PH, 30 A	5'x5'	High	No
<b>Autoclave</b>	220V,60A,3ph	5'x10'	High	No
Autoclave work table	120V, 20A,1ph	4'x8'	High	No
<b>Roll Former</b>	220V,30A, 3ph	3'x15'	High	No
Roll Former heater	480V,30A,3ph	sits on roll former	High	No
<b>Carver 30 Ton Hot Press</b>	230V,30A,1ph	4'x6'	High	No
<b>B30 Plasticator</b>	480V,100A,3ph	5'x20'	High	No
B30 Plasticator Hydraulics	480V,100A,3ph	5'x10'	High	No
<b>Protherm oven</b>	240 V, 30 A, 3 PH	15'x6'	High	No
<b>Gala Line</b>	480V,100A,3ph	5'x30'	High	No
Gala Line control Cabinet	480V, 60A,3ph	3'x8'	High	No
Gala Line supply cabinet	-	2'x4'	High	No
<b>Vacuum Former</b>	230V,30A,1ph	6'x6'	High	No
IR Vacuum Forming Oven	230V,50A,3ph	4'x4'	High	No
<b>Michelman sizing line</b>	see detailed attachment for		High	No
<b>Forklift Charger</b>	240V,30A,3ph	4'x4'	High	No
<b>Blue Lab Oven</b>	120V,20A,1ph	2'x2'	High	No
<b>Tape Line</b>	120V, 20A,1ph	6'x15'	High	No
Godea roll	240V, 30A, 3ph	-	High	No
Take Up Winder	120V, 20A,1ph	-	High	No
<b>Fiber spinning line</b>	240 V, 30 A, 3 PH	25'x10'	High	No
<b>Coating equipment (3 pieces)</b>	480V, 3 PH (each)	25'x15'	High	No
<b>Thermoplastic Pultrusion</b>	480V, 3PH, 100A	25'x6'	High	No
<b>Densification furnace</b>	480V, 3 PH	10'x10'	High	No
<b>Braiding</b>	480V, 3Ph, 60 A	20'x10'	High	No
<b>Rapidclave</b>	480V, 3Ph, 60A	15'x10'	High	No
<b>Drying Oven</b>	240V, 30A, 3ph	4'x4'	High	No
<b>1 part RTM machine</b>	240V, 3Ph, 20A	6'x6'	High	No
<b>Storage</b>		8'x6'		
<b>Incline Wet laid equipment</b>	120 V, 40 A, 1 ph	TBD	Low or High	No
<b>Haz Mat + Storage</b>				
<b>Prepreg Freezer</b>	120V, 20A,1ph	4'x8'	Low	No
<b>Fiber Preforming Stations Lab</b>				
Fiber preforming stations	220 V, 3 PH, 30 A	20'x20'	Low	No
<b>Testing Lab</b>				
<b>Mecmesin Friction Peel Tear</b>	120V, 20A,1ph	4'x3'	Low	No
<b>Test Machines Inc. FRL Cantilever Bending Tester</b>	120V, 20A,1ph	4'x4'	Low	No
<b>Tinius Olsen Impact Model 104 (IZOD)</b>	120V, 20A,1ph	4'x2'	Low	No
<b>Test Resources Universal Frame (313 Frame)</b>	240V,50A, 3ph	6'x6'	Low	No
Test Resources CPU	120V, 20A,1ph	-		
Test Resources Monitor	120V, 20A,1ph	-		
<b>Machine Center</b>				
<b>Environment Chamber Humidity Control</b>	120V, 20A,1ph	4'x6'	Low	No
<b>Haas VM3 Robot</b>			High	No
<b>Tile Saw</b>	120V,20A,1ph	3'x5'	High	No
<b>Band Saw</b>	120V, 20A,1ph	4'x4'	High	No
<b>CamFIVE Laser Cutter</b>	230V,30A,1ph	8'x14'	High	No
<b>Barnstead Mega Pure System MP-1 DI Water equipment</b>	120V, 20A,1ph	2'x2'	Low	No
<b>Mettler Toledo DSC CPU</b>	120V, 20A,1ph	3'x5'	Low	No
Mettler Toledo DSC Refrigeration Unit	120V, 20A,1ph	3'x3'		
Mettler Toledo DSC CPU	120V, 20A,1ph	-		
<b>Mettler Toledo TGA</b>	120V, 20A,1ph	3'x3'	Low	No
Mettler Toledo TGA Cooler	120V, 20A,1ph	3'x5'		
Mettler Toledo TGA CPU	120V, 20A,1ph	-		
<b>CNC Router</b>	120V, 20A,1ph	7'x7'	High	No

EQUIPMENT	ELECTRICAL	FOOTPRINT	HIGH OR LOW BAY?	CRANE?
<b>Non-Destructive Testing / Computed Tomography</b>				
<b>Bruel &amp; Kjaer CPU 5735Ch2 for software</b>	120V, 20A,1ph	6'x3'		
<b>Olympus OmniScan SX Ultrasound</b>	120V, 20A,1ph	6'x6'	Low	No
<b>Olympus Battery Charger</b>	120V, 20A,1ph	6'x6'	Low	No
<b>Immersion tank</b>	120V, 20A,1ph	6'x6'	Low	No
<b>Mistras Micro-II Acoustic Emission</b>	120V, 20A,1ph	6'x6'	Low	No
<b>CTA X-Ray Computed Tomography Sys</b>		8'x4'		
<b>Automated Infused Tow</b>		9'x4'		
<b>Manual Infused Tow</b>		2'x4'		
<b>CTA-X DEA Module</b>		3'x4'		
<b>CTA Testing Load Frames</b>		3'x5'		
<b>CTA-Oven</b>		3'x4'		

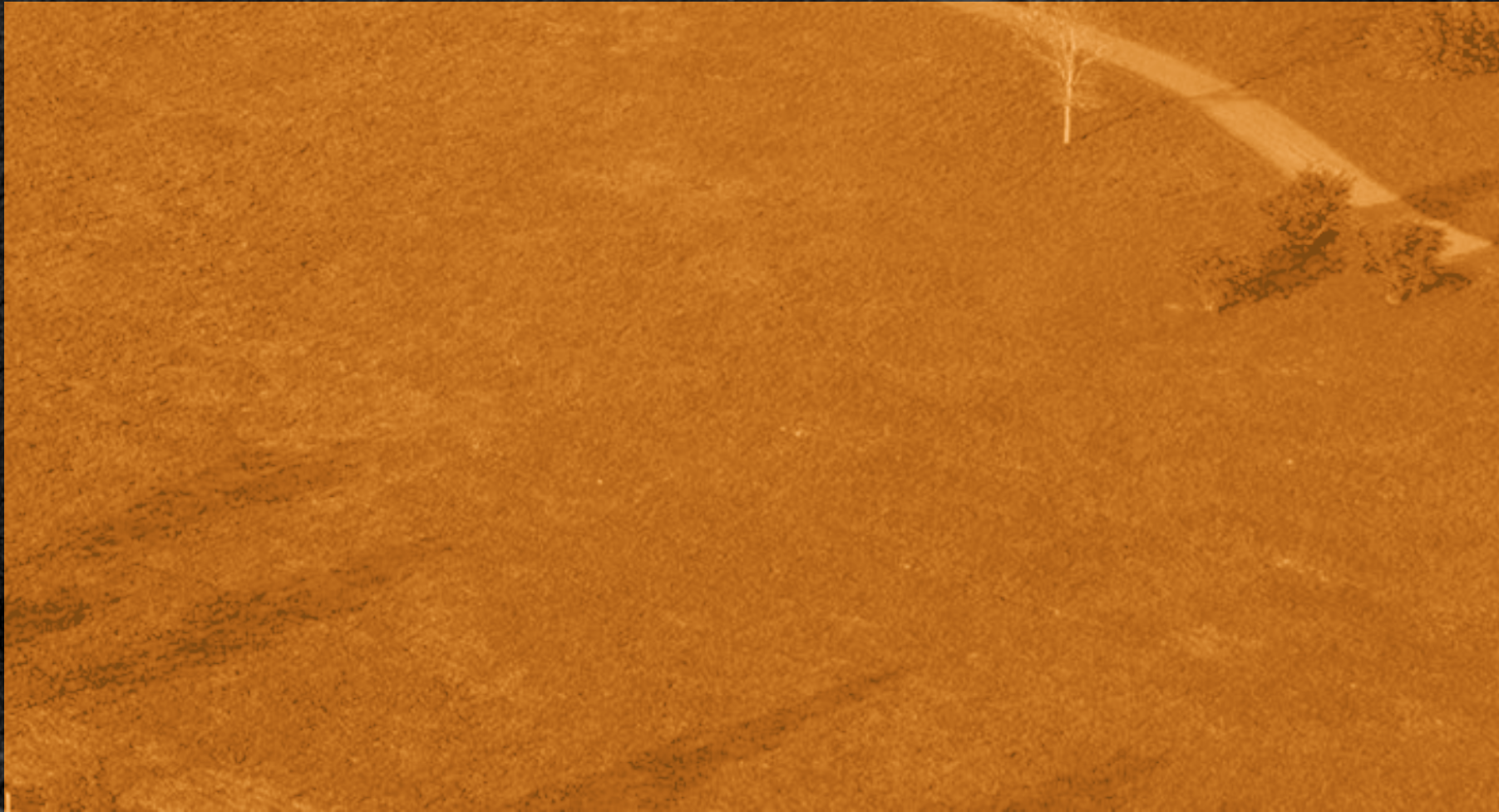
<b>High Bay - Bridge Crane</b>				
<b>Automated tape placement with robot</b>	see details in comment	25'x20'	High	Yes
<b>NanRong Injection Molding</b>	480V,150A,3ph	5'x25'	High	Yes
Thermulator	480V,40A,3ph	3'x3'	High	Yes
<b>Jordan Reduction Shredder</b>	480V,50A,3ph	5'10'	High	Yes
<b>Hannifin 30 Ton Press</b>	480V, 60A,3ph	5'x4'	High	Yes
<b>Wabash 150T Press</b>	480V,200A,3ph	10'x12'	High	Yes
<b>DAKE 75T Press</b>	240V, 60A, 3ph	6'x8'	High	Yes
Heated Plates for DAKE	460V, 60A,3h	-	High	Yes
<b>MVP Innovator</b>	-	4'x10'	High	Yes
<b>2 part RTM machine</b>	240V, 3Ph, 30A	20'x10"	High	Yes
<b>Drop weight impactor</b>	120V, 20A, 1 ph	6'x6'	High	Yes
<b>TMAC crash testing</b>	480V, 3ph, 100A	15'x15'	High	Yes
<b>Baleigh 60T Press</b>	240V, 30A, 3ph	4'x4'	High	Yes
<b>Material inventory</b>	Misc	Storage space 50'x50'? TBD	High	Yes
<b>CLT CNC</b>		10'x15'	High	Yes
<b>CLT Press</b>		10'x15'	High	Yes
<b>CLT Adhesive</b>		10'x15'	High	Yes
<b>CLT Wood Storage (x2)</b>		12'x6'	High	Yes
<b>Storage</b>		16'x21'	High	Yes
<b>High temperature ovens</b>	480 V 3 PH	5'x5'	High	Yes
<b>Delta T Thermulator</b>	460V, 30A,3h	3'x3'	High	No

<b>OFFICE WING</b>				
<b>VR stations</b>	120 V, 20 A, 1 ph	15'x15"	Low	No
<b>3D Printers (~10)</b>	120V,20A,1ph	2'x2'	Low	No
<b>Modeling and Simulation Lab (~10 computers and workstations)</b>	120V,20A,1ph	20'x20'	Low	No

<b>NOT PLACED:</b>				
<b>B24 Blow Molding Machine</b>	240 V, 30 A, 3 ph	10'x10'	High	No
<b>National Instruments cDAQ 9714</b>	120V, 20A,1ph	3'x2'	Low	No
<b>UV Curing</b>	120V,20A,1ph	2'x2'	Low	No
<b>U-Fiber Spinning line</b>		25'x10'		
<b>Baxter Lab Drying Oven</b>	120V,20A,1ph	3'x3'	Low	No

(Equipment provided by Owner; not in project budget)

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4.0

SYSTEMS NARRATIVES

# 04 SYSTEMS NARRATIVES

## Systems Narrative Summary

The built environment requires close coordination between multiple disciplines in order to provide appropriate architectural, site, structural, mechanical/hvac, electrical, plumbing, and fire protection systems. The design team met with the researchers for one site tour and participated in numerous Zoom calls to collect information on the types and quantity of initial research equipment, different layout requirements, and develop approaches to provide an appropriate environment to maximize the potential of the research.

The following narratives reflect the understanding of the multiple-disciplinary team consisting of the following members:

- Mechanical, Electrical & Plumbing (MEP) Engineering: Newcomb & Boyd
- Site & Civil Engineering: Civil & Environmental Consultants, Inc.
- Architectural: Lord Aeck Sargent
- Structural: KSi Structural Engineers

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# 04 SYSTEM NARRATIVES

## Architectural Narratives

### APPLICABLE CODES

#### 01 BUILDING CODES

Tennessee's codes apply as a mandatory minimum to all buildings except one and two family dwellings and licensed health-care facilities, except as otherwise indicated.

International Building Code (IBC), 2012 edition, except for:

1. Chapter 11 Accessibility; and
2. Chapter 34, Section 3411 Accessibility for Existing Buildings

The International Fuel Gas Code (IFGC), 2012 edition

The International Mechanical Code (IMC), 2012 edition

The International Plumbing Code (IPC), 2012 edition

The International Property Maintenance Code (IPMC), 2012 edition

The International Fire Code (IFC), 2012 edition

The International Energy Conservation Code (IECC), 2012 edition

National Electrical Code (NEC), 2017 edition

Projects with State Building Commission Numbers are required to be reviewed by the TN State Fire Marshal Office.

See [https://www.tn.gov/content/dam/tn/commerce/documents/fire\\_prevention/posts/2020-4-12\\_sfmo-code-adoption-and-history.pdf](https://www.tn.gov/content/dam/tn/commerce/documents/fire_prevention/posts/2020-4-12_sfmo-code-adoption-and-history.pdf) for additional detail.

If this project is under the City of Knoxville jurisdiction, the following codes apply:

Code Type	Code Model	Amendment
Accessibility Codes	2009 ICC / ANSI 117.1	No
Energy Conservation Code	2018 International Energy Conservation Code	Yes
Electrical Code	2017 National Electrical Code	Yes
Fuel Gas Code	2018 International Fuel Gas Code	Yes
Mechanical Code	2018 International Mechanical Code	Yes
Plumbing Code	2018 International Plumbing Code	Yes
Fire Code	2018 International Fire Code	
Ordinances	Knoxville Code of Ordinances: Chapter 6 Buildings and Regulations, Article 1, Section 6-5. Fire District	

All design building codes required for this project shall be in accordance with the applicable approved codes by the State of Tennessee. In the case of any overlap, the most stringent approved code reference should be applied. The designer shall be responsible for providing a current list of all related codes for this project.

The project shall also comply with the goals and guidelines of the Cherokee Farm Master plan, 2009 [https://trace.tennessee.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1007&context=utk\\_campmast](https://trace.tennessee.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1007&context=utk_campmast).

The design team shall be responsible for adhering to any state mandate regarding Building Information Modeling (BIM) interfacing current at the time of design.

#### 02 ASSUMPTIONS

Gross Area: 35,700 GSF with approximately 27,238 NASF maximum story area.

2 stories in height.

No atrium spaces.

There is a potential building adjacent to this project. Design team to address adjacencies to comply with code.

All new construction.

Project is located within the City of Knoxville Fire District.

#### 03 KEY ISSUES AND REQUIREMENTS

##### Occupancy Classification

Occupancy Type (2012 IBC 302.1): Mixed occupancy:

- Business – office and office support labs
- Assembly – conference spaces for greater than 50 people
- Factory Industrial – High bay and high bay support labs

##### Physical Properties

Table 503 2012 IBC provides the allowable areas per floor based upon construction type and the maximum height allowed for each construction type based upon occupancy types.

Type IA – Unlimited height (unlimited); Unlimited Area

Type IB – 11 Stories height (160 feet); Unlimited Area

Type IIA – 5 Stories height (65 feet); 37,500 GSF per floor

Type IIB – 4 Stories height (55 feet); 23,000 GSF per floor

If the building is fully sprinklered, per 2012 IBC 504.2 the maximum height can be increased 20' and the number of stories increased by one. If sprinklered and multi-story, per 2012 IBC 506.3 there is an increase in allowable floor area of 200% per floor. Additionally, per 2012 IBC 506.2 the floor area can be increased for frontage on a public way or open space.

The total allowable area increase needs to be evaluated on an individual design scenario basis. With the current design scenario and with both sprinkler and 30' minimum frontage increases, the allowable heights and area may be:

- a. Type IA – Unlimited height (unlimited); Unlimited Area
- b. Type IB – 12 Stories height (180 feet); Unlimited Area
- c. Type IIA – 6 Stories height (85 feet); 37,500 + 37,500 + 28,125 = 103,125 GSF per floor
- d. Type IIB – 5 Stories height (75 feet); 23,000 + 23,000 + 17,250 = 63,250 GSF per floor

Per 2012 IBC 705, to consider the addition as a separate building with the above allowable square footages, there must be a fire separation between the new and existing buildings at the connecting passageway. For a Business occupancy, the fire wall must be 3 hour rated. Firewalls must be structurally stable to allow collapse of construction on either side.

Per 2012 IBC 403.1, the height at which a building is classified as High-Rise is an occupied floor 75' above the lowest level of fire department vehicle access. With the current design sections, there is 56' from the basement to the upper occupied floor or 70' to the roof.

With the current design scenario of 31,833 GSF for the first floor divided proportionately between office, labs, collaboration, high bay and support spaces, and 100 GSF per person per 2012 IBC 1004.1.1 calculates to approximately 318 persons to evacuate. The second floor of 15,630 GSF including 14,430 GSF for offices, labs and support spaces for Business Occupancy, and 1,200 nsf for Assembly calculates to approximately 224 persons to evacuate.

2012 IBC 1019.1 requires a minimum of two separate means of egress per story for up to 500 persons.

## Architectural Narratives

Per 2012 IBC 1007.1, not less than two of the means of egress will need to be made accessible. In a fully sprinklered building, the exit access travel distance is 250 feet (this can be increased to 300 feet if the occupancy type is solely Type B). Minimum egress corridor width shall be 44" clear. Minimum clear opening width of exit doors is 32" (36" door). Required egress widths must be calculated per 2012 IBC Table 1005.1 for the occupant content served. Minimum ceiling height in exit access corridors = 7'-6". Accessible stair minimum width is 48" clear between the handrails unless sprinklered. Per 1007.3, accessible egress stairs require an Area of Refuge or accessed from an Area of Refuge or a horizontal exit.

### Minimum Construction Type

A. Calculations must be carefully reviewed as the proposed design develops and changes. Based upon a total gross area of 35,700 square feet and maximum area per floor of 31,833 square feet, it appears that the minimum construction type could be Type IIB. To Use Type IIB the facility will need to be fully sprinklered. 2012 IBC Table 601 gives the required fire-resistance ratings for building elements for the various construction types. Type IIB requires no fire protection on the structural frame, walls, floors and roof construction.

B. Depending on the site configuration, additional area increases could be considered if the frontage clearances are reviewed and taken into account in accordance with 2012 IBC equations in 506.2.

### Detailed Occupancy Requirements

- A. Fire Department Access
- i. The Authority Having Jurisdiction (AHJ) has the power to require access box(es) (commonly known as Knox Boxes provided by Facilities Services ) to be installed in an accessible area where access to or within a structure is difficult because of security.
  - ii. 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.
  - iii. 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 facility is fully sprinklered this distance can be extended to 450 feet.

- C. Atriums - *(Not Part of Design)*
- i. Per 2012 IBC 404, atriums are defined as openings connecting two or more stories other than enclosed stairways, elevators, hoist ways, escalators, plumbing, electrical, air-conditioning or other equipment, which is closed at the top and not defined as a mall. It is assumed that this structure will not have an atrium planned.
- D. Classrooms
- i. Spaces with an occupant load and/or seating count of less than 50 persons shall be classified as Group B occupancy. Spaces with an occupant load and/or seating count of 50 or more occupants shall be treated either as Group A-1 (if fixed seating is provided) or Group A-3.
- E. Occupancy Signage
- i. Every classroom and laboratory space is required to have signage that clearly identifies the maximum allowable occupant count for that space. Size of both the sign and the font must be approved by the State Fire Marshal.

## 04 NFPA 45 REQUIREMENTS

### General

1. The Designer shall include a list of the Lab Users chemicals and quantities to be used in each Lab. This list shall be shown on all documents for review and approval by both the SFMO.
2. The Designer shall include the appropriate safety storage or cabinets of the hazardous materials.

### Requirements

Refer to figure A1.3 of the NFPA 45 to determine if NFPA 45 governs laboratory use.

### Classifications

Laboratory units shall be classified as Class A (high fire hazard), Class B (moderate fire hazard), Class C (low fire hazard) or Class D (minimal fire hazard) according to the quantities of flammable and combustible liquids. See table 10.1.1 for limits for sprinklered units.

For the purposes of determining laboratory fire hazard classification, quantities of liquefied flammable gases shall be treated as if they were Class I flammable liquids. For example, 4 liters of liquefied gases shall be considered to be 4 liters of Class I flammable liquid.

Experiments and tests conducted in education and instructional laboratory units shall be under the direct supervision of an instructor. Instructional laboratory units shall be classified as Class C or Class D laboratory units. Educational laboratory units shall be Class D or shall be limited to 50 % of the flammable and combustible liquids quantities for Class C laboratory units.

A laboratory work area shall be considered to contain an explosion hazard of an explosion of quantities or concentrations of materials could result in serious or fatal injuries to personnel with that laboratory work area.

A laboratory unit shall not be considered to contain an explosion hazard unless a laboratory work area within that unit contains an explosion hazard great enough to cause major damage or serious injury outside that laboratory work area.

### Laboratory Unit Enclosures

Class A less than or equal to 10,000 SF shall have a fire separation of 2 hours from adjacent occupancies.

Class A greater than 10,000 SF is not permitted.

Class B less than or equal to 10,000 SF shall have a fire separation of 1 hour from adjacent occ.

Class B greater than 10,000 SF is not permitted.

Class C or Class D of any size is not required to be separated.

All floor openings shall be sealed or curbed to prevent liquid leakage to lower floors.

If water will create a serious fire or personnel hazard, a suitable not-water automatic extinguishing system shall be permitted to be an acceptable substitute for sprinklers.

Window assemblies shall be permitted in fire-rated wall assemblies have a required fire resistance rating of 1 hour or less. Windows shall comply with NFPA 101 requirements for type and approved fire protection rating. Fire window assemblies shall comply with NFPA 80, Standard for Fire Doors and Windows.

### Lab Safety Requirements

Class A, B and C laboratory units shall be classified as industrial occupancies in accordance with NFPA 101.

# 04 SYSTEM NARRATIVES

## Architectural Narratives

Instructional laboratory units and Class D laboratories shall be classified as business occupancies in accordance with NFPA 101.

### Means of Access to an Exit

A laboratory work area shall have a second means of access to an exit when:

A laboratory work area contains an explosion hazard located so that an incident would block escape or access to the laboratory work area.

A laboratory work area within a Class A laboratory exceeds 500 Sf.

A laboratory work area within a Class B, Class C or Class D laboratory exceeds 1,000 SF.

A hood in a laboratory work area is located adjacent to the primary means of exit access.

A compressed gas cylinder larger than a lecture bottle size (approx. 2 inches by 13 inches) is located such that it could prevent safe egress in the event of accidental release of cylinder contents.

A cryogenic container located such that it could prevent safe egress in the event of accidental release of its contents.

### Standpipes

In all laboratory buildings that are two or more stories above or below the grade level, standpipes shall be installed.

The location of the standpipes shall be per areas limited to systems such as the stairwells.

The fire protection system shall be designed by a State of Tennessee licensed engineer and/or contractor.

### Sprinklers

Automatic Sprinkler system protection shall be required for all new laboratories.

Class A and class B laboratory units shall be classified as Ordinary Hazard (Group 2).

Class C and Class D laboratory units shall be classified as Ordinary Hazard (Group1).

Where other automatic extinguishing systems are required or permitted in lieu of automatic sprinkler systems, they shall be designed and installed to meet the one or more of the following NFPA Standards: NFPA 11, NFPA 11A, NFPA 12, NFPA 12A, NFPA 15, NFPA 17, NFPA 17A, NFPA 69, NFPA 750, NFPA 2001.

Discharge of an automatic fire extinguishing system shall activate an audible fire alarm system on the premises.

a. Audible Alarm & Strobes - The audible alarm location shall be verified by the field SFMO for the required decibel ratings for each room.

The sprinkler system shall be designed by a State of Tennessee licensed engineer and/or contractor with experience of the University of Tennessee fire protection systems.

### Laboratory Ventilating and Hood Requirements

Laboratory units and laboratory hoods in which chemicals are present shall be continuously ventilated under normal operating conditions.

Chemical fume hoods shall not be relied upon to provide explosion (blast) protection unless specifically designed to do so.

Laboratory ventilation systems shall be designed to ensure that chemicals originating from the laboratory shall not be recirculated.

The release of chemicals into the laboratory shall be controlled by enclosures or captured to prevent any flammable and/or combustible concentrations of vapors from reaching any source or ignition.

The location and configuration of fresh air intakes shall be chosen to avoid drawing in chemicals or products of combustion coming either from the laboratory building or other structures and devices.

The air pressure in the laboratory work areas shall be negative with respect to corridors and non-laboratory areas of a laboratory unit.

Air exhausted from chemical fume hoods and other special local exhaust shall not be recirculated.

sustainability measures above and beyond LEED<sup>1</sup>. The process shall employ cutting-edge sustainability practices.

The design team's pursuit of conceptual energy modeling through the SD and DD phases using the whole building energy simulation software eQUEST shall follow the HPBr. It is required for all State Buildings that the ASHRAE Standard 90.1, 2010 be used. The goal of such parametric modeling will be to test energy efficiency measures to meet and exceed ASHRAE 90.1-2010 prescriptive requirements for energy efficiency. Meeting the ASHRAE 90.1-2010 standard will facilitate compliance with energy code adopted by Tennessee while earning LEED EAp2 Minimum Energy Performance and EAc1 Optimize Energy Performance<sup>2</sup>.

It is recommended that an energy performance target, set through benchmarking, be pursued using energy modeling. The baseline for the benchmarking can be from the CBECS 2003 database, as illustrated in the graphic below:

Daylighting performance shall be optimized through variables such as orientation, shading, amount and type of glazing. This analysis will inform the daylighting zone depth, i.e., the amount of electric lighting to be controlled by photosensors. Uniformity of daylight distribution, glare reduction and maximizing lighting energy savings shall be the outcomes of an integrated approach towards daylighting and lighting design. It is recommended that daylighting performance be optimized using climate based daylight metrics such as Daylight Autonomy.<sup>3</sup>

## 02 UNIVERSITY OF TENNESSEE, KNOXVILLE SUSTAINABLE BUILDING POLICY

The University of Tennessee, Knoxville recognizes the importance of energy efficiency and sustainable design for campus buildings. Sustainable design considers human and environmental health along with economic and social concerns within the design, construction, and renovation process. As a member of the United States Green Building Council The University of Tennessee acknowledges the Leadership in Energy and Environmental Design (LEED™) rating system as the nationally accepted sustainable building standard (<http://www.usgbc.com>).

## SUSTAINABILITY

### 01 STRATEGY

The design team's approach to sustainable design shall at minimum adhere to the State of Tennessee's High Performance Building Requirements (HPBr). LEED certification shall be used both as a guideline and measuring stick, while giving due consideration to

## Architectural Narratives

Campus structures are designed with a long life expectancy. The lifetime maintenance of building materials and systems (life cycle costs) should be considered along with capital cost in new constructions and major renovations. In accordance with the principles of the campus Environmental Policy the University of Tennessee, Knoxville shall use the United States Green Building Council's Leadership in Energy and Environmental Design (LEED™) rating system as the standard for the design and construction of new buildings costing more than \$5 million and major renovations. All such projects shall be designed to meet current LEED certification as a minimum requirement under the LEED for New Construction and Major Renovations (LEED-NC) standard.

Architects, contractors, engineers, and all others involved with the building design process are expected to follow this policy. In addition to following LEED criteria, building planning teams should provide a building operation life cycle cost as early as possible in the design process to the Chancellor's staff for review.

### 03 STATE OF TENNESSEE HIGH PERFORMANCE BUILDING REQUIREMENTS

See Sustainable Design Guidelines of the Designers' Manual High Performance Building Requirements (HPBr) dated January 2009/December 2015 at: [https://www.tn.gov/content/dam/tn/statearchitect/documents/HPBr\\_Manual\\_v1.01.pdf](https://www.tn.gov/content/dam/tn/statearchitect/documents/HPBr_Manual_v1.01.pdf)

## ARCHITECTURAL

### 01 GENERAL

The approximately 35,700 GSF building will consist of two occupied floors. The first floor is approximately 31,833 GSF comprised primarily of high bay and laboratory space, with lobby, office and building support functions. The second floor is a smaller area comprised of primarily laboratory, office, collaboration and building support space of approximately 15,630 GSF that overlooks the two-story high bay space. These areas will have a diverse base of research, teaching and learning. An open and expressive dialogue between UT, Construction Manager, and Designer will ensure the development of a truly collaborative and successful project.

The following sections represent a brief outline of items to be included but is not an all encompassing list. Additional sections may be required (such as roof access, walking paths, pavers, etc.) as the design proceeds.

### 02 SITEWORK (See Civil report)

#### Selective Demolition

Remove all site features, as required to prepare the site. Provide all required safety and protective measures during the demolition process. Verify any hazardous materials to be removed per the State of Tennessee guidelines. As part of the State's requirements for sustainability, refer to the material recycling requirements.

#### Utility Connections

Electrical, Steam, Gas, Water, Sewer, Storm, Telephone, and Fiber Optic are all available nearby. Compressed Air, Vacuum, and Treated Water are not available from a central plant and will therefore need to be provided within the building.

#### Utility relocations N/A

#### Sitework

Sitework includes all concrete sidewalks, asphalt paving, brick faced concrete retaining walls, site lighting, wheelchair ramps, landscaping, planting, and site furniture. Site preparation will include excavation as required for foundation systems, grading, excavation, scraping and grubbing as required to prepare the site .

#### Concrete Sidewalks and Paving

New concrete sidewalks will be 10' wide by 6" thick min., 4000 psi concrete with recycled content on stone base. All dumpster pads, loading areas, approaches to/from dumpsters and loading areas, and driveways to be concrete.

### 03 CONCRETE

#### Foundations and Footings

All foundations and footings to be cast in place reinforced concrete. Foundation system and soil bearing capacity are to be determined .

#### Structural Concrete

See 206 - Structural Systems Narrative on pages 44-47.

#### Concrete Slabs

See 206 - Structural Systems Narrative on pages 44-47.

### 04 UNIT MASONRY

#### Concrete Masonry Units

Exterior wall construction may include reinforced CMU construction as backup in selected areas to the exterior veneer or cast stone system.

#### Brick Veneer

Exterior wall construction will include brick veneer as selected by the design team consistent with other buildings in Cherokee Farms Research Park over waterproofed reinforced Steel Stud or CMU construction as backup . Brick work may also include brick faced retaining walls, pavers, and other architectural site features. All ground mounted utilities shall have brick veneer and/or stone screen walls matching the building design within the Campus Building Guidelines.

#### Cast Stone

Exterior wall construction may include cast stone trim in colors and shapes over waterproofed reinforced Steel Stud or CMU construction as backup. Cast Stone work may also include trim work at retaining walls, pavers, and other architectural site features.

#### Precast Cladding

Exterior wall construction may include precast cladding as selected by Facilities Services Project Manager over waterproofed reinforced Steel Stud or CMU construction as backup .

### 05 METALS

#### Structural Steel

See 206 - Structural Systems Narrative.

#### Miscellaneous Metals

Provide lintels, bracing, clips, equipment supports, rooftop mechanical equipment supports, and related metal framing for laboratory casework and equipment, including door systems or opening framing(s).

# 04 SYSTEM NARRATIVES

## Architectural Narratives

### Structural Metal Stud Framing

Exterior wall construction may include structural steel stud construction as backup to the exterior veneer or cast stone system .

### Cold Formed Metal Framing

Provide cold-formed metal framing for walls, equipment support, anchorage, and attachment.

### Metal Handrails

Provide shop fabricated and finished stainless steel handrails at ramps, metal stairs, mezzanines and other areas as required by code.

### Ornamental Metals

Provide shop fabricated and finished ornamental metalwork as designed by Architect.

## 06 WOOD AND PLASTICS

### Wood Blocking

Provide fire retardant treated wood blocking (as approved by State Fire Marshall) as required for installation of laboratory casework and equipment, wall protection devices, grab bars, and other equipment.

### Plastic Laminate

Provide chemical resistant plastic laminates in colors and surfaces (countertops).

### Solid Surfacing

Toilet room vanities and other countertop surfaces will be monolithic solid surface material equal to Corian.

## 07 Thermal and Moisture Protection

### Building Insulation

All exterior wall, foundation wall, and underslab conditions to include rigid insulation as required meeting energy code of the State of Tennessee. Roofing system will include rigid insulation compatible with a modified bitumen membrane roofing system. Sound attenuating batt insulation will be installed in interior partition walls according to UL designations where required. If required, add a layer of batt insulation above the ceiling for additional sound control

### Fire Stopping

Firestopping will be installed at all floor, wall, and ceiling penetrations as required by code to seal all rated penetrations. Firestopping rating to be equal to that of installed assembly. Label all penetrations above ceiling for rating. Use only U.L. fire rated stopping materials.

### Joint Sealers

Interior: Butyl caulking for sound rated partitions, toilet room fixtures, and interior glazing and miscellaneous sealant. Chemical resistant silicone sealant where all lab benches and backsplashes meet walls. Exterior: One or two part silicone or polysulfide type sealant to be used at all exterior joints. Color as selected by Facilities Services Project Manager. One part silicone sealant at all window sash to pre-cast joints.

### Roofing Systems

The main roof is to be selected by the design team consistent with other buildings in Cherokee Farms Research Park but is envisioned to be a flat roof, sloped appropriately for drainage, because this is predominately found on other buildings on campus. Gutters and downspouts or internal drainage system to be determined? Flat Roofs: Single-Ply Modified Bitumen Membrane Roofing system with High Solar reflectance index.

Copper and/or cast stone copings with Copper counter flashings.

### Fluid Applied Waterproofing

All exterior wall systems will include a continuous fluid-applied waterproofing system.

### Metal Wall Panels

Exterior wall construction may include painted metal wall panels as selected by Facilities Services Project Manager over waterproofed reinforced Steel Stud or CMU construction as backup.

## 08 Doors and Windows

### Standard Steel Doors and Frames

Interior and exterior frames to be hollow metal in styles and configurations as selected by Facilities Services Project Manager. Frames to be fully welded, shop primed and finished, ready for field painting. Grout as required for rating at masonry walls. Coordinate frame requirements with panic devices, electric strikes and card readers as required.

All interior metal doors to be rated seamless steel construction, shop primed and finished for field painting, shop fitted for hardware and glazing.

### Hollow Metal Doors

Exterior hollow metal doors will be galvanized ready for field painting (fire rated where required) as selected by Facilities Services Project Manager.

### Wood Doors

Interior doors at offices, classrooms, labs, and other public areas may be wood doors. They will be solid core (fire rated where required) with veneer.

Standard interior doors, including those at classrooms, offices, and public areas will be 7'-0" in height and all classroom and office doors to have vision panel per code.

Lab entry doors to be two unequal leaf 5'-0" wide doors with vision panel and all laboratory doors will be 8'-0" in height.

All areas to have a minimum of one door with a minimum width of 36".

### Overhead Coiling Doors

Overhead coiling doors are intended at loading dock/receiving areas and will be motor operated with prefinished galvanized steel slats. Doors will be provided with locks and full weatherstripping. Insulated slots will be provided at exterior door.

### Door Hardware

All door hardware to be ADA approved, brushed chrome US 26D finish. All door hinges to be 5 knuckle, 3 minimum per door. All lab doors to have lockset, closer, kick plate, and latch sets as required.

### Security

All exterior doors to have magnetic lock, card access control. Doors to lab corridors (or openings to labs from any common spaces) will be provided with card access.

### Exterior Windows and Curtainwall Systems

Exterior windows to be thermally broken aluminum frame shop fabricated with welded corners. Stick built or site fabricated curtain wall systems will be thermally broken. Color and finish as selected by Facilities Services Project Manager.

## Architectural Narratives

### Aluminum Entrances and Doors

Exterior entrance doors will be thermally broken aluminum or frameless laminated glass in aluminum frame to match exterior window and curtain wall system. Automatic door openers will be provided to fit in with current campus standards and will comply with ADA requirements.

### Glazing

Exterior glazing will be high performance low-e type, 1" insulating unit with tinted vision glass. Interior glazing will be 1/4" safety clear vision glass and/or fire rated glass as required.

## 09 Finish Systems

### Gypsum Drywall

Partitions to be painted gypsum wallboard on light gauge metal stud framing in UL assemblies, fire ratings, and STC ratings as required. Metal studs to be 22 ga. min., with no greater than 1/240 vertical deflection.

In lobby and collaboration areas or other areas indicated, provide suspended gypsum wallboard ceiling on metal stud frame with furring strips. Seal all joints at walls, floors, and ceilings as described in Division 7.

### Acoustic Tile Ceilings

All labs, classrooms, and office areas to receive new mineral based modular cast or molded acoustic tile with factory painted finish and fissured pattern. ACT to be 2'x2' square, white, revealed edge, NRC 0.60. Suspension system to be direct hung double steel web, roll formed and capped, pre-painted cold rolled steel, intermediate duty, with upward access.

### Resilient Flooring

VCT will be provided at all classrooms, break area, and corridors. The use and material of sustainable, "green" products is to be considered and explored. Colors and patterns to be selected..

High Bay, High Bay support, Labs and Lab Support Flooring  
Sealed concrete

### Resilient Base and Accessories

All base at resilient or carpeted floors to be 4" rubber base in color as selected by the Facilities Services Project Manager. Material to be

continuous at corners with no spliced joints. All fixed casework to have 4" rubber base.

Porcelain Tile  
Lobby

### Ceramic Tile

Ceramic or Porcelain tile in toilet rooms with cove, base and bullnose to form a complete system. Wet walls and all walls to wet walls shall be tile at a minimum height of 60" or, extend tile to ceiling height with a continuous decorative border. Colors and pattern to be selected.

### Carpet or Carpet Tile

All offices and associated support areas to have carpet or carpet tile with low VOC content and 4" rubber base. Colors and pattern to be selected. Tiles to be 18"x18" or 24"x24" and carpet rolls to be standard 12'-0" width rolls.

### Painting

All walls to be painted with low VOC semi-gloss water based latex paint. All walls to receive one coat primer and two coats paint or more to cover areas with no visible variations or blemishes in the coating finish. All shop primed ferrous metals to receive two coats low VOC latex enamel. All exterior paint to be alkaloid based gloss enamel or High Performance coatings as required.

### High Performance Coatings

None anticipated, however if this becomes a requirement in design these spaces are to receive high-build, three-coat semi-gloss epoxy paint system.

## 10 SPECIALTIES

### Visual Display Boards

All whiteboards to be dry erase marker board, porcelain enamel steel on rigid particleboard or composite substrate with aluminum frame with a mat finish. Each unit to have bottom marker rails as from the Claridge manufacturer. Provide movable units as noted.

### Toilet Partitions

Toilet Partitions to be ceiling hung, solid phenolic or stainless steel partition system complete with doors with continuous hinges, panels, and hardware including bumpers, coat hooks, etc.

### Fire Extinguishers, Cabinets, and Accessories

Provide fire Class ABC all-purpose fire extinguishers in rated stainless steel cabinets (U.L. semi-recessed mounting) with glass doors where indicated. Provide full body fire blankets by Lab Safety Supply or equal. All fire extinguishers, blankets, and accessories to comply with NFPA, OSHA and all locations to be per State Fire Marshall.

### Signage

Designed and manufactured per the campus standard and as approved by Facilities Services Project Manager.

### Toilet and Bath Accessories

All toilet and restroom accessories to be stainless steel with #4 finish, by Bobrick or equal. Each toilet room to have paper towel dispensers, waste receptacle, soap dispensers at each sink, infrared sensors for water operation, mirrors, and sanitary napkin dispenser in women's toilets. Each stall to have two roll toilet tissue dispenser, grab bars, coat hook, and sanitary napkin disposal in women's toilet room. No toilet accessories are to be recessed. All accessories and finishes to be verified with the Owner for type and all are to be provided in proposed construction contract.

### Wall Protection

Corner guards are to be 60" high, surface mounted stainless steel with number 4 finish and installed at all corners. Wall bumpers to be flexible extruded vinyl inserts mounted over aluminum mounting channel secure to CMU or blocking in wall, including all corners, caps, and trim pieces. Color of wall bumpers to be selected. Basis of design: Boston Bumper Series 2000 or equal.

### Folding Panel Partition

A folding panel partition may be provided in the selected spaces to provide flexible classrooms. Partitions to have a minimum sound rating of STC 56 and to provide pass through panel options and marker panel options. Style and finish to be selected by Facilities Services Project Manager. Basis of design: Modern Fold or equal.

### Waste and Recycling Container Cabinets

Provide wood cabinetry to conceal waste and recycling containers at all public spaces (including corridors), classrooms, break rooms, and work/copy rooms. UTK to provide waste and recycling containers. See Section 413 - Recycling Station Design Guidelines on page 242 of the Appendix for additional information.

### Emergency Aid Specialties

# 04 SYSTEM NARRATIVES

## Architectural Narratives

Provide recessed or semi-recessed cabinets to accommodate standard Automatic External Defibrillator (AED) devices. Include alarm connected to centrally monitored alarm system. Style and finish to be selected. Basis of design: JL Industries 1400 Series. UTK to provide the AED devices.

### Information and Directory Cabinets

Provide recessed or surface mounted bulletin and directory board cabinets. Cabinets to be constructed of heavy-gage aluminum with cork display backing. Style and finish to be selected. Basis of design: Claridge Imperial Series Bulletin and Directory Board Cabinet.

## 11 EQUIPMENT

### Laboratory Fume Hoods

All fume hoods are to be by-pass style for use with the specified HVAC system. Cabinet construction to be powder-coated cold rolled steel frame construction. Each hood to have electronic face velocity sensors and infrared occupancy sensors. All hoods are to be pre-wired and pre-piped. Basis of Design: Thermo Scientific Fisher Hamilton, Ltd. or equal as approved by the Owner. All hoods to meet ASHRAE 110-1995 (in-place tested), BS 7258, DIN 12924. Air sentry, flow-safe.

- Bench Mounted Fume Hoods, 6 foot width, 31 inch depth
- Vertical rising sash, tempered safety glass
- Adjustable baffle
- Epoxy resin worksurface
- 120V duplex, one each side
- Cupsink with cold water gooseneck fixture and vacuum breaker, right side
- Specialty gas service, total two, pre-piped up, right side
- Two tube fluorescent light
- One each acid and flammable storage cabinets. Acid cabinets to be passively exhausted into fume hood volume
- One fume hood assembly on the floor, at a minimum, should be ADA compliant.

The requirement for supplemental exhaust in these support labs, whether via lab snorkel, canopy exhaust, or direct exhaust drop will be determined during the Design phase.

## 12 LABORATORY CASEWORK

The lab module for the Innovation South Building is based on an eleven foot width. There are three types of lab spaces within the building – the high-

bay lab, lab support spaces directly supporting high bay labs, and innovation labs which may be assigned, in full or in part, to industry partners.

Other than the High Bay Lab, labs within the building will include High Bay Support Labs, and Innovation Labs. The layout of high-bay support labs are driven by equipment within these labs. The Innovation Labs are more traditional in layout, with a mix of fixed casework and mobile tables. All lab casework is to conform to the requirements of the Scientific Equipment and Furniture Association.

Fixed casework is to be cold rolled metal fabrication, powder-coated, flush overlay style with color to be selected by architect from manufacturers standard palette. Hinges for drawer units are to be stainless steel, three-knuckle hinge. Drawer slides are to be telescoping with stainless steel ball bearings, 100-pound rated at minimum. All base units are to have leveling feet.

Fixed casework elements include undermounted epoxy resin sink assemblies in each lab. Sinks will have be epoxy resin, 25" width by 15" depth by 10" height, served by a hot/cold swinging gooseneck epoxy-coated faucet with wrist blades, with vacuum breaker and aerator. Each sink location will have a drench pose type eyewash. Each sink unit will have a 16" deep shelf above for mounting a deionization unit and reservoir, and each will have an epoxy resin pegboard with polypropylene pegs and a stainless steel drain pan for drying glassware and labware. At least one sink assembly on each lab floor should be ADA compliant.

Fixed casework will also include those base cabinets which are a part of the bench mounted fume hood assemblies outlined in Section 11 EQUIPMENT.

Worksurfaces are to be 1-inch thick epoxy resin, with 4 inch height applied curb.

Mobile table assemblies in the Innovation Labs will be located on both the perimeter of the lab, and as subcomponents of island assemblies. Perimeter tables will be painted steel, adjustable in height from 30" to 36" height, and will have epoxy resin tops and leveling feet. Where these tables are located, three tier adjustable wall shelving will be included in the same length as the table.

The island assemblies are each made of subcomponent tables, with tables on each side of the island being 2'-6" depth. These tables are adjustable in height from sitting height (2'-6" worksurface above finished floor) to standing height (3'-0" worksurface above finished floor). These tables will each have three 12" depth adjustable height shelves attached to standards, and will have on-board wiremold with power and data servicing both sides of the bench. Each table, back to back, should have access to six duplex outlets and should be a dedicated 20 Amp circuit. These tables will be

provided with a single mobile base cabinet, 2'-6" in width, with door/drawer configuration to be determined during the Design Phase. As tables are adjustable in height, the ration of standing height to sitting heigh mobile base cabinets will be 2:1. Tables are to be provided with a power cord capable of plugging up to power provided in a ceiling service panel, with plug and receptacle configuration coordinated for plugging in this direction.

Service gases are to be provided at island assemblies (and at fume hoods) from cylinder gas closets accessible in the lab corridor. These gases may be routed to ceiling service panels, after which flexible gas service lines may be connected to ball or needle valves at the bench level as needed. Service gas needs, both type and purity, should be defined during the design phase, and will define service gas line material and gas valve requirements.

Cylinder racks, or wall-mounted cylinder restraints will be provided within cylinder closets adjacent the lab entry points.

In-lab or corridor safety showers, as well as eyewash units, will be provided with a thermal mixing valve. Safety showers located in the High Bay Support Labs and Innovation Labs will be in-wall type, with single hand-pull actuation. Safety shower units in the High Bay Lab will include an integral eyewash. All units will conform to ANSI/ISEA Z358.1-2014, American National Standard for Emergency Eyewash and Shower Equipment, and be compliant with OSHA 29 CFR 1910.151.

## 13 SPECIAL CONSTRUCTION

The crane proposed for the Innovation South build-out is to cover the Eastern half of the High Bay footprint. It is to be (as defined by the Crane Manufacturers Association of America) a Class D, 10 Ton, top running unit rated for indoor use. The crane is to span 50 feet width and 144 feet length, is to be mounted to building structure sized for its inclusion, and is to have the following characteristics:

- Four wheel design structural tube trucks
- 20 feet lift with ½" round wire rope
- Hoist speed 14 FPM, 20 HP
- Trolley Speed 80 FPM
- Girders: Wide flange beams with reinforcement plates designed per CMAA standards.
- Bridge: Four polyurethane bumpers, Trolley: Four spring type bumpers
- Control: Fixed type pendant, mounted off of B girder, to extend to within 4 feet of finished floor

## Architectural Narratives

### 14 CONVEYING SYSTEMS

#### Service Elevator

Type:Electric Hydraulic

Capacity:5000 lbs.

Speed:150 fpm.

Floors:To serve all floors. Roof access to be determined.

Operation:Single push button

Interior Wall:Stainless Steel (*decorative style and extra durable wall finish*)

Interior Floor:Textured Stainless Steel

Interior Ceiling:Stainless Steel (*to be removable*)

Doors:Single Automatic, 4'-0" Clear opening

Cab Dimensions:5'-8" W X 8'-5" D X 8'-0" H (*must accommodate ambulance stretcher*)

Fixtures:Stainless Steel

Lighting:Manufacturers Standard [LED preferred]

Communications:Telephone, Alarm Bell



# 04 SYSTEMS NARRATIVES

## Site & Civil Engineering Narrative

Civil & Environmental Consultants, Inc. (CEC) appreciates the opportunity to provide Schematic Design engineering services for the above referenced project and we offer the following evaluation of the project site within The University of Tennessee Research Park, Knoxville, Knox County, Tennessee.

### Site Location

The proposed location of the project, UTK Innovation South, is at The University of Tennessee Research Park at Cherokee Farm off of Alcoa Hwy in Knoxville, Knox County, Tennessee. The Research Park is master planned with roadways and infrastructure suited for development in planned leased areas.



### Zoning

- Zoning Jurisdiction: City of Knoxville
- Zoning District: I-RD: Research and Development Zoning District
- Site Design Guidelines: Master Plan Design Guidelines for the Research Park
- Current Setbacks: 3 stories and below = 5'  
4 stories and above = 10'
- Parking: City of Knoxville Article 11 min/max based on final building uses
- Water Quality: City of Knoxville – first flush / SPAP  
Projected (1) water quality unit for parking & (1) water quality unit for building
- NPDES Permit: City of Knoxville SWPPP/NOI

### Site Layout and Utilities

It is our understanding parking will be constructed on the northern area and the building will be constructed on the southern area. The below shows approximate useable areas for both areas.



The northern area has open grassed area of approximately 200' by 125'-135' available development. This area is suitable for approximately 60-70 maximum spaces with access off Cherokee Farm Way. The existing grade in this area is average 7% with approximately 15' of total grade change across the area. Existing drainage piping is available to connect to with 15" HDPE along Cherokee Farm Way connecting to the downstream 30" HDPE pipe. It is possible one existing light pole may

need to be relocated along Cherokee Farm Way. A fire hydrant is existing at the SE corner of this area.

The southern area has open grassed area of approximately 225'-230' by 285' available for development. The existing grade in this area is average 9% with approximately 25' total grade change across the area. Existing sanitary sewer is stubbed for connection at the NW corner. Existing water, electric, gas, and telephone is available for connection. Existing drainage piping is available to connect to with a 12" HDPE stub-out with 24" & 30" HDPE downstream. A fire hydrant is existing across Osprey Vista Way to the SE of this area, it is assumed at least (1) additional fire hydrant may need to be installed in this area depending on building MEP designs.

### Approximate Budget Allowance

The following preliminary, planning phase opinion of probable cost is estimated based on similar projects to provide an approximate budget allowance for the project. As the project is considered in the planning phase stage of development, our recommended contingency range is shown below as -15% to +50% considering the stage of development and the volatility of the construction material costs due to the pandemic.

Site Work Category	Approximate Budget Allowance
Stormwater (Parking Area)	\$ 65,000 - \$ 110,000
Stormwater (Building Area)	\$ 105,000 - \$ 170,000
Parking (Parking Area - 45 Spaces)	\$ 125,000 - \$ 205,000
Earthwork (Parking Area)	\$ 35,000 - \$ 55,000
Earthwork (Building Area)	\$ 340,000 - \$ 570,000
Planting (Parking & Building Area) [10% - 15% of total site cost]	\$ 125,000 - \$ 320,000
Hardscape (Parking area sidewalk & Building Area Asphalt, 14 Parking Spaces, & Sidewalk)	\$ 205,000 - \$ 345,000
Retaining Wall (Building Area) (Note: does not consider building foundation retaining)	\$ 305,000 - \$ 515,000
Utility Relocation/Infrastructure (Parking & Building Area)	\$ 90,000 - \$ 150,000

## Structural Narratives

The project includes 35,000gsf of high-bay research space to be used for Translational Science Research within a new 65,000gsf facility. It is assumed that that hazardous or explosive materials, if used in the space, will be used in quantities less than allowed by Table 307.1(1) or 307.1(2) of the International Fire Code.

The expected governing building code for the project will be the International Building Code, 2018 Edition with any amendments required by the local Authority Having Jurisdiction (AHJ). However, if the project is considered a state project, then the structural design and construction shall comply with the governing state building code which is the International Building Code, 2012 Edition with associated amendments.

The building structure will consist of structural steel framing and reinforced concrete. Inclusion of mass timber structural systems (glue-laminated, cross-laminated, and others) may also be considered by the UT Research Foundation. The structural steel systems shall include wide-flange columns and beams supporting a composite concrete slab system. The roof system is anticipated to be open web joists and joist girders but may include wide-flanged beams if they are found to be more economical and/or practical for the applications.

In the High Bay Lab area, the structural steel frame shall support the use of a 20-Ton Service Class D overhead bridge type crane with a service areas as shown on included floor plans. The crane shall have a 50ft span. Structural support shall be provided by steel columns which may or may not be included in the main building structure. Location of columns which are not part of the building structural shall be coordinated with and approved by the UT Research Foundation or its appointed representative. The foundation supporting the crane columns will be independent of the grade supported slab and shall be designed with appropriate settlement limits to ensure proper operations of the crane.

The ground supported slab, including the compacted fill supported slab, shall be designed, and constructed to provide acceptable performance for use as a heavy industrial space supporting the operation of heavy equipment. Final slab design will be coordinated with the layout and specification of equipment provided by the UT Research Foundation. At this time there are no special floor flatness requirements so in general an  $F_f$  of 30 and  $F_L$  of 20 may be assumed unless noted otherwise in special areas as directed by the UT Research Foundation.

Suspension of heavy equipment from the roof of the structure is not anticipated. All utilities including power, and pipe for liquid and gases will be suspended from roof framing and distributed to the ground using building columns. Assume a superimposed dead load of 15psf to support the suspended utilities. Locations and capacities of all concentrated loads resulting from suspended utilizes shall be coordinated with the design of the open-web joist roof framing. In addition the roof framing shall be coordinated with roof-top supported equipment such as exhaust fans and air handling units by either posting up from roof elements or providing a dunnage system with a minimum of 3ft clearance for roof maintenance.

### DESIGN CRITERIA – Based on IBC 2018/ASCE 7-16

Risk Category – II – Buildings other than Categories I, III, and IV

#### Design Floor Loads

Uniform Live Loads (reduced as allowed by the Building Code):

- Ground Floor - High Bay Lab 250 psf
- Ground Floor - General 150 psf
- Ground Floor – Office, Sim Lab, Corridors 85 psf
- 2<sup>nd</sup> Floor – General (includes partitions) 85 psf
- 2<sup>nd</sup> Floor – Tomography Area 150 psf
- Mechanical Rooms 150 psf

Concentrated Live Loads (over 2'-6"x2'-6" area)

- Ground Floor - High Bay Lab 3000 lb
- General Areas 2000 lb

#### Design Wind Loads

- Nominal Design Wind Speed (50yr MRI) 84 mph

Design Serviceability Limits – Based on IBC 2018 Table 1604.3 UNO

- Elevated Floors – Max Total Deflection 1.0 in
- Roof – Max Total Deflection 2.0 in
- Drift due to Nominal Wind (50yr MRI) H/400

### MATERIAL PROPERTIES

#### Reinforcement

- Reinforcing Steel ASTM A615, Grade 60

#### Normal-Weight Concrete

- Slab-on-Grade 4,500 psi
- Framed Beams, Slabs 4,000 psi

# 04 SYSTEM NARRATIVES

## MEP Programming Narrative

### HEATING, VENTILATING, AND AIR CONDITIONING

#### GENERAL

HVAC systems will comply with the following minimum requirements:

- International Building Code – 2012
- International Mechanical Code – 2012
- International Energy Conservation Code – 2012
- ASHRAE Standard 62.1-2007
- ASHRAE Standard 90.1-2010
- University of Tennessee – Division of Facilities Planning – Designer’s Manual
- University of Tennessee Knoxville – Facilities Services – Design & Construction Guidelines

Design conditions will be as follows:

- Inside design cooling: 75°F db, 50% RH.
- Inside design heating: 70°F (no humidification required).
- Outside design cooling: 95°F db, 78°F wb.
- Outside design heating: 0°F db.

Pressurization Criteria:

- The following spaces will be designed to maintain inward directional airflow relative to adjacent building areas:
  - Research Labs and Lab Support
  - High Bay Lab
  - Toilets
  - Janitor Closets
- The total building will be designed to maintain outward directional airflow.

Cooling Load Criteria:

- Research labs and lab support will be served by 100% outside air systems. Supply/exhaust airflows for laboratories and support spaces will be determined by cooling load calculations and exhaust requirements except that the spaces will be designed to maintain the following criteria:
  - Minimum 6 air changes per hour
  - Equipment heat release of 10 watts per square foot
  - Lighting heat release of 1.2 watts per square foot
- High bay lab will be served by a recirculating supply air system combined with a dedicated exhaust system to pick up point exhaust sources as needed throughout the space. Supply/exhaust airflows for the high bay lab will be determined by cooling load calculations and exhaust requirements except that the spaces will be designed to maintain the following criteria:
  - Equipment heat release of 5.0 watts per square foot
  - Lighting heat release of 1.1 watt per square foot
  - Minimum exhaust airflow of 0.4 cfm per square foot
  - Minimum outside airflow of 0.5 cfm per square foot
- Offices, modeling/simulation lab, conference rooms, and office support spaces will be served by a recirculating supply air system combined

with a dedicated toilet exhaust system. Supply/exhaust airflows for these spaces will be determined by cooling load calculations and exhaust requirements to maintain the following criteria:

- Equipment heat release 1 watt per square foot
- Lighting heat release of 1 watt per square foot
- Minimum outside airflow per ASHRAE Standard 62.1.

#### AIR CONDITIONING SYSTEMS

Air conditioning systems, except as noted otherwise, will be rooftop units complete with compressors, condensers, evaporator coils, supply fans, motors, variable frequency drives, hot gas reheat coils, electric heating section, filters, vibration isolation, and unit controls housed in a finished solid double-wall weatherproof casing with 2” thick thermal insulation and drain pan. Functional components will be accessible for inspection and maintenance through hinged, solid double-wall access doors in each section.

The air conditioning system serving the research lab and lab support spaces will be a 100% outside air, variable-volume rooftop energy recovery units with variable-volume, venturi-type supply air valves and electric reheat coils. Unit will include an exhaust deck with general exhaust fan, filters, and energy recovery wheel to transfer heat between airstreams whenever weather conditions are favorable. Supply ductwork will be rectangular, externally-insulated galvanized steel with laminar flow supply diffusers in labs with fume hoods and panel face diffusers in labs without fume hoods.

The air conditioning system serving the high bay lab will be a single-zone, constant-volume rooftop unit with heating, cooling, and dehumidification control modes. Supply ductwork will be round, double-wall insulated galvanized steel with round cone face diffusers.

The air conditioning system serving offices, conference rooms, and office support spaces will be a variable-volume rooftop unit with variable-volume fan-powered terminal units with electric reheat. Supply ductwork will be rectangular, externally-insulated galvanized steel with panel face diffusers. Return air ductwork will be fully ducted from each room served back to the rooftop unit.

Telecom rooms and elevator machine rooms will be served by ductless split systems. Systems will be cooling-only type units complete with wall-mounted indoor fan coil section, outdoor condensing unit, wall-mounted controller, and disconnect switches. Units for telecom rooms will be sized as required by the University of Tennessee – Telecommunications Design and Installation Standards.

Electrical rooms located in the office building core will be served as a cooling only zone from the office rooftop unit.

The main electrical and mechanical rooms will be ventilated with exhaust fans and heated with electric unit heaters.

Stairs will be heated by electric wall heaters.

#### EXHAUST SYSTEMS

Research Labs and Lab Support Exhaust

- Laboratory fume hoods will be variable-volume type and will be provided with venturi-type air valves connected to a manifolded high-induction exhaust fan system located on the roof. The high-induction exhaust fan system will include redundant fans with variable frequency drives, a common plenum, fan isolation dampers, outside air bypass dampers, and discharge nozzles capable of producing discharge velocities above 5000 feet per minute. Acceptable manufacturers will be Cook, Greenheck, MK Plastics, or Strobic Air. Manufacturers utilizing inline mixed flow type fans will be required to furnish a jib crane system for motor removal.
- Fume hood exhaust ductwork will be type 304 stainless steel with welded longitudinal seams and transverse joints.
- General exhaust in each lab will be provided with variable-volume, venturi-type general exhaust air valves connected to the rooftop energy recovery unit.
- General exhaust ductwork will be galvanized steel.

High Bay Lab Exhaust

- High bay lab exhaust will be provided with twelve 12” diameter exhaust drops located at columns for connection to research equipment requiring local exhaust. These drops will be terminated 10’ AFF, will be provided with manual balancing dampers, and will be connected to a manifolded exhaust fan system located on the roof. The exhaust fan system will include two fully redundant fans with variable frequency drives, isolation dampers, and independent discharge stacks capable of producing discharge velocities above 3000 feet per minute. Fans will be utility sets with epoxy-coated steel wheel and housing, belt drive, motor, weatherproof cover, and Type C spark-resistant rating.
- High bay lab exhaust ductwork will be galvanized steel.

Toilet Exhaust

- Toilet rooms and janitor closets will be exhausted to a rooftop power roof ventilator.

#### PROCESS CHILLED WATER SYSTEM

Process chilled water with supply temperature of 50°F will be provided to serve cooling needs of selected research equipment in the building. The system will be comprised of a 50-ton air-cooled chiller, chilled water pumps, buffer tank, and insulated copper piping. The pumps and accessories will be located in a mechanical room on the first level of the building. The chiller will be located in the equipment yard.

High bay lab will be provided with twelve pairs of 1” process chilled water drops located at columns for connection to research equipment requiring cooling water. These drops will be terminated 8’ AFF and will be provided with ball valves and 0.75” hose end connections.

#### AUTOMATIC TEMPERATURE CONTROL SYSTEMS

## MEP Programming Narrative

An open-protocol, building control system (BCS), including a PC-based operator system, will be provided to control the terminal units, exhaust systems, process chilled water system, and other miscellaneous systems. Acceptable manufacturers will be JCI or Schneider Electric to interface with existing UTK systems.

Variable-volume laboratory pressurization controls will be provided in laboratory spaces. Controls will be fast-acting type to maintain CFM offsets in each space. Laboratory pressurization controls will monitor lighting systems to determine occupancy and setback the minimum ventilation rate during unoccupied periods. Pressurization controls will provide full interface with the BCS. Acceptable manufacturers will be Phoenix Controls or Price.

Rooftop units will be provided with communication interface for full interface with the BCS.

### TESTING, ADJUSTING, AND BALANCING

Systems will be tested, adjusted, and balanced to achieve proper operation, design flow, temperature and pressure differentials, and pressure drop through piping, ductwork, equipment, and components. A Subcontractor, certified by AABC or NEBB and independent of the Contractor, will be required to perform testing, adjusting, and balancing work.

## PLUMBING

### GENERAL

Plumbing systems will comply with the following minimum requirements:

- International Building Code – 2012
- International Plumbing Code – 2012
- International Fuel Gas Code – 2012
- International Energy Conservation Code – 2012
- University of Tennessee – Division of Facilities Planning – Designer’s Manual
- University of Tennessee Knoxville – Facilities Services – Design & Construction Guidelines

### PLUMBING FIXTURES

Acceptable manufacturers for plumbing fixtures will be American Standard, Kohler, Sloan, and Zurn. Plumbing fixtures will be provided as follows:

- Water closets will be elongated vitreous china, wall-hung, sensor-activated, flush valve type, 1.28 gallons per flush with white open front seats.
- Urinals will be vitreous china, wall-hung, sensor-activated, flush valve type, 0.125 gallons per flush.
- Lavatories will be vitreous china, self-rimming type, with sensor-activated centerset faucet, 0.5 gpm flow control, and grid strainer.
- Water fountains will be electric, modular type with in-wall chiller, extended receptors, and bottle filler option.
- Service sinks will be terrazzo, floor type with grid strainer, rim guard and faucet with hose thread outlet, vacuum breaker, and wall brace.

- Break room sinks will be stainless steel, self-rimming, undercounter type with swing spout faucet, and 1.5 gpm flow control.
- Casework-mounted sinks and faucets will be provided by the casework manufacturer.
- Emergency showers and eyewashes will be specified by the Architect and provided by the casework manufacturer. Each emergency shower and eyewash will be provided with a thermostatic type tempering valve to provide tepid water (between 60°F and 100°F) at point of use.

### DRAINAGE SYSTEMS

Sanitary drain, waste, and vent systems will extend from 5’ outside the building to all fixtures and equipment requiring service. Drainage and vent stacks will extend vertically through the roof. The system will be provided with traps, vents, and cleanouts as required by code. Trap primers will be provided for drains susceptible to loss of water seal by evaporation.

High bay lab will be provided with twelve floor sinks located near columns for connection to research equipment requiring drainage.

Elevator pits will be provided with sump pumps with the discharge piped to the sanitary system.

Rainwater primary and secondary drainage systems will extend from the roof and gutter drains to 5’ outside the building. Cleanouts will be provided as required by code. Drain bodies and horizontal rainwater primary and secondary piping above grade and within heated spaces will be insulated to prevent condensation. Rainwater secondary drainage piping will be routed independent of other drainage systems and discharge above grade at an observable location.

Drainage and vent piping above grade will be hubless, coal-tar coated, service weight cast iron pipe and fittings with heavy duty compression type couplings. Drainage and vent piping below grade will be bell and spigot, coal-tar coated, service weight cast iron pipe and fittings with elastomeric compression joints. Horizontal, above grade rainwater piping will be insulated with flexible fiberglass blanket insulation.

Chemical-resistant waste and vent systems will be provided for all laboratory area sinks, cup sinks, fixtures and equipment requiring service. Drainage and vent stacks will extend vertically through the roof. The system will be provided with traps, vents, and cleanouts as required by code. Drainage will be discharged into a neutralization basin before being discharged into the site sanitary system. Chemical-resistant waste and vent piping above grade will be fire retardant polypropylene with a combination of mechanical and heat-fused joints.

### DOMESTIC WATER SYSTEMS

The domestic water service will be located in a mechanical room on the first level of the building. The water service will be provided with indoor parallel backflow prevention devices in accordance with local code.

The building will be served with a horizontal distribution system to each fixture group and to vertical risers. Isolation valves will be provided at the domestic water entrance, at the base or top of each vertical riser, at each branch to commons areas serving 2 or more fixtures, at each laboratory, and at each wall hydrant or equipment connection. Water hammer arresters will be provided for shock suppression. Water connections for mechanical system make-up will be isolated from the domestic water system by reduced pressure backflow preventers.

High bay lab will be provided with twelve 1” cold water drops located at columns for connection to research equipment requiring water. These drops will be terminated 8’ AFF and will be provided with ball valves and 0.75” hose end connections.

Domestic hot water service will be extended from water heaters to the plumbing fixtures, laboratory sinks, emergency showers, and eyewashes. Engineer will perform life cycle evaluation to compare gas-fired and electric type water heaters to serve the building.

Domestic water piping within the building will be type L hard copper with wrought copper sweat type fittings, and joints using lead-free solder. In lieu of soldered joints, UTK may allow pressed joints. Water piping below slabs on grade will be type K soft copper with no joints below slab. Domestic hot and cold water piping will be insulated with fiberglass pipe insulation. Fittings will be insulated with preformed fiberglass fittings finished with glass fabric and vapor barrier mastic.

### LABORATORY SYSTEMS

Laboratory compressed air and vacuum will be provided to laboratory outlets and fume hoods. Piping will be type L hard copper tubing, pre-cleaned for oxygen service with wrought copper fittings. Joints will be brazed with 14% silver brazing alloy and continuously purged with nitrogen during brazing operations.

Compressors will be oil-free scroll-type compressors with desiccant air dryers to a minimum of -4°F dew point. Compressed air systems will include compressed air receivers, air-cooled after-coolers, and pre- and post-filters to provide clean air.

A dry claw type laboratory vacuum system will be designed for 15” hg at casework outlets.

Compressed air for general laboratory use will be distributed at 50 psig and high-pressure compressed air will be distributed at minimum 100 psig for specialty use.

High bay lab will be provided with twelve 0.75” compressed air drops located at columns for connection to research equipment requiring compressed air. These drops will be terminated 8’ AFF and will be provided with capped ball valves.

### SPECIALTY GAS SYSTEMS

# 04 SYSTEM NARRATIVES

## MEP Programming Narrative

Project will provide infrastructure to support one bulk cryogenic tank in service yard to serve high bay lab. High bay lab will be provided with a 1.5" main and twelve 0.75" drops located at columns for connection to research equipment requiring specialty gas. These drops will be terminated 8' AFF and will be provided with capped ball valves.

Piping will be type L hard copper tubing, precleaned for oxygen service with wrought copper fittings. Joints will be brazed with 14% silver brazing alloy and continuously purged with nitrogen during brazing operations.

### FUEL GAS SYSTEMS

The fuel gas system will provide natural gas at 14" wg from the gas meter outside the building to the water heaters (if required), laboratory outlets, and fume hoods.

Underground piping will be yellow polyethylene with thermal fusion joints. Piping above ground will be schedule 40 black steel with welded or threaded fittings as required.

## ELECTRICAL

### GENERAL

Electrical systems will comply with the following minimum requirements:

- International Building Code – 2012
- NFPA 70-2017, National Electrical Code
- NFPA 110-2019, Emergency and Standby Power Systems
- NFPA 780-2017, Installation of Lightning Protection Systems
- International Energy Conservation Code – 2012
- University of Tennessee – Division of Facilities Planning – Designer's Manual
- University of Tennessee Knoxville – Facilities Services – Design & Construction Guidelines
- University of Tennessee – Telecommunications Design and Installation Standards

### PRIMARY ELECTRICAL SYSTEM

Primary electrical service to the building will be provided by the utility company. A new pad-mount transformer will be provided by the utility company and will be located outside of the building. Surge protectors will be provided on pad-mount transformer.

### SECONDARY ELECTRICAL SYSTEM

Electrical service for the building will originate from pad-mount service transformer. Service to the building will be 480Y/277 V, 3-phase, 4-wire, wye connected, grounded neutral. Secondary feeder will be installed in underground concrete-encased duct bank from pad-mount transformer to secondary service switchboard.

In general loads will be served as follows:

- LED lighting – 277 V
- Motors 5 hp and larger – 480 V, 3-phase
- Receptacles and motors 0.33 hp and smaller – 120 V, single-phase through use of step-down transformers.

Service equipment will consist of a low-voltage switchboard. Service switchboard will be front accessible with individually mounted main and group mounted feeder devices. Switchboard bussing will be copper and will be braced for the available fault current. Main device will be stationary, insulated case type and feeder devices will be molded case circuit breakers. Solid state ground fault protection will be provided for main device and feeder devices. Energy-reducing maintenance switching provisions shall be provided for circuit breakers rated 1200A or greater. Service switchboard will be provided with integral surge protection device. Service switchboard will be provided with an electronic power monitor, GE Multilin PQM II-T20A, to meter multiphase amperes and volts, and power parameters.

Building lighting, receptacle, mechanical equipment loads, and laboratory loads will be served by separate feeders. Feeder risers will be cable in conduit to supply power to distribution and branch circuit panelboards. Laboratory distribution panelboards will be provided with integral surge protection device. Branch circuit panelboards will be provided on each floor to serve lighting and receptacles on the same floor. Laboratory panelboards will be provided on each floor and located within the laboratories to serve laboratory loads on the same floor. Protective devices in panelboards will bolt-on type circuit breakers. Bussing in panelboards will be copper. Panelboards will have minimum 20% spare circuit breakers plus 10% spaces for future breakers. Six spare 1" empty conduits will be stubbed up above ceiling for recessed panelboards. Dry-type transformers will be provided to serve receptacle and other 120 V loads. Dry-type transformers will be copper wound, 480 delta primary, 208Y/120 V secondary, 220°C insulation, 115°C rise.

The high bay lab will be provided with distribution and branch circuit panelboards (480V and 208V) to serve equipment. Panelboards will be provided along the perimeter of the high bay space.

### Electrical Load Criteria:

- Research Labs
  - 20 watts per square foot
- High Bay Lab & Specialty Labs
  - 50 watts per square foot

Wiring will be insulated conductors installed in raceways. Conductors will be copper with type THWN/THHN or XHHW insulation. Conductors for power wiring will be minimum #12 AWG and a maximum of 500 kcmil. Separate neutral conductors will be provided for each branch circuit phase conductor. Wiring will be color-coded the entire length for identification of various phases.

Raceways will be minimum 0.75" for power and 1" for communications. In general, electrical metallic tubing will be provided for interior wiring installations. Flexible metal conduits will be provided for connections to recessed luminaires, motors, dry-type transformers, and electrical equipment

subject to movement or vibration. Liquidtight flexible metal conduits will be provided for connection to equipment exposed to rain or spray. Cable trays will be provided to form a system that interconnect all telecommunication rooms and extends throughout corridors and work areas. Aluminum, dual-channel, surface metal raceways will be used for power and communication devices in laboratories.

Electrical systems, circuit and equipment will be grounded and bonded. The maximum resistance of electrical systems to ground will be 3 ohms. A green colored grounding conductor will be installed in raceways with phase conductors. A ground riser system consisting of #4/0 copper ground risers and copper ground busses will be provided. Ground busses will be located in each electrical room, communications room, and high bay lab as required.

A lightning protection system with ground ring will be provided and will be the concealed type installed with UL lighting protection inspection certificates.

### LIGHTING

Interior and exterior lighting will be LED type unless noted otherwise. Illumination levels for work surfaces will be provided in accordance with IESNA recommended illumination levels.

In general, the following luminaire types will be provided:

- Enclosed offices: recessed, indirect/direct LED luminaires with dimmer controls for daylight harvesting and individual control.
- Open offices: suspended, low-profile indirect/direct LED luminaires with dimmer controls for daylight harvesting and individual control.
- Conference rooms: recessed indirect/direct LED luminaires with dimmer controls.
- Research Labs: recessed, linear-slot LED luminaires.
- High bay lab: suspended, high bay LED systems.
- Mechanical and electrical rooms: industrial type LED luminaires.
- Means of egress: LED edge-lit exit signs.

Interior spaces will be provided controls for automatic lighting shut-off in accordance with IECC-2012. Automatic lighting shut-off controls will consist primarily of ceiling-mounted vacancy/occupancy sensors with local override switch as required per code. Mechanical and electrical rooms will be provided with digital timer wall switches. Interior office spaces will be provided with dimming controls. Lighting within daylight zones will be provided with daylight responsive dimming controls. Interior office spaces will be provided with dimming controls. Architectural preset lighting control systems will be provided for conference rooms. Lighting control system will be Lutron Quantum. Exterior lighting will be controlled by photocell, timeclock, and lighting relay panel.

### EMERGENCY POWER SYSTEM

The emergency power system will include an engine-generator set, automatic transfer switches, remote annunciator, and accessories to automatically supply power during a utility power failure. Engine-generator set will be provided with a diesel-fueled engine with unit-mounted radiator. Generator will be 480Y/277 V, 3-phase, 4-wire, synchronous type with

## MEP Programming Narrative

permanent magnet pilot exciter. The engine-generator set will be located at the building exterior in a weatherproof, acoustically-treated enclosure with a sub-base fuel tank sized to provide 48 hours of runtime at full rated load. A 100% rated permanent load bank will be installed adjacent to the engine-generator set. A temporary generator connection cabinet will be provided near the building's loading dock as required per Article 700 of NFPA 70. Acceptable engine-generator manufacturers will be Caterpillar or Kohler. Automatic transfer switches will be open transition type 4-pole switched neutral.

Emergency and standby power system loads:

- Egress lighting and exit lights.
- Fire detection and alarm systems.
- Fire protection systems.
- Lighting and receptacles in main and emergency electrical rooms.
- Public safety communication systems.
- Sump pumps.
- Fume hood exhaust fan systems.
- Building control systems.
- Automatic doors for handicap door operators.
- Lighting, receptacles, and outlets serving telecommunication equipment rooms.
- Selected receptacles in research labs.
- Selected receptacles and equipment in high bay lab.

### COMMUNICATION SYSTEMS

Telecommunications service will be provided by the utility company and extend into the building MDF.

A complete telecommunications system (equipment, equipment racks, cabling, conduits, pathways, equipment rooms, work area outlets, wireless LAN, etc.) will be furnished and installed per UT Telecommunications Design and Installation Standards.

Provisions will be made to accommodate a campus master clock system.

### SECURITY SYSTEMS

Electronic security systems will include an integrated system of intrusion detection, access control and alarm monitoring, and video surveillance. Building exterior entry and selected interior doors will be provided with electric strikes with access control and alarm monitoring. Video surveillance will be provided at building main entrances and exits. Manufacturer will be Gallagher to match campus standard. Final connectivity and programming will be by UT Facility Services.

### FIRE ALARM

#### GENERAL

Fire alarm systems will comply with the following minimum requirements:

- International Building Code – 2012
- NFPA 70-2017, National Electrical Code
- NFPA 72-2010, National Fire Alarm Code
- University of Tennessee – Division of Facilities Planning – Designer's Manual
- University of Tennessee Knoxville – Facilities Services – Design & Construction Guidelines

#### DESIGN CRITERIA

A new fire alarm will be installed to serve the building. The system will be a supervised, local protective signaling system employing multiplex communication and individually addressable initiating devices.

Fire alarm equipment will be the product of SimplexGrinnell or Edwards. Work to be performed will include expansion and modification of the existing SimplexGrinnell 4190 or Edwards EST3 color graphics system at the UTK campus central electrical shop.

Wiring will be installed in metallic raceways.

#### CONTROL EQUIPMENT

Control equipment will be modular in construction, UL listed, and housed in a recessed steel cabinet. Operating voltage will be 24 V DC. Standby power will be furnished by a 4-hour self-contained emergency battery power supply.

The main fire alarm control panel will include solid state construction, plug-in modules and dead front construction. Signaling line circuits and initiating device circuits will be arranged so that the number of connected devices does not exceed 80% of circuit capacity. The fire alarm annunciator will be an LCD display with minimum 80-character capacity.

Speaker circuits will be selectable for 1-way transmission of voice instructions. The circuit selector panel will be mounted adjacent to or integral with the CPU and will include individual zone selector switches, an all-call switch, and a microphone with press-to-call button and coil cord.

#### ALARM INITIATING DEVICES

Alarm initiating devices will include addressable manual pull stations, monitor modules, duct detectors, heat detectors, and smoke detectors. Addressable monitor modules will be provided for nonaddressable devices including sprinkler water flow switches and valve tamper switches.

Auxiliary functions will be performed by control modules located within 36" of the controls for the equipment to be operated.

#### NOTIFICATION DEVICES

Alarm signaling devices will consist of alarm speakers and strobe lights.

### FIRE SUPPRESSION

#### GENERAL

Fire suppression systems will comply with the following minimum requirements:

- International Building Code - 2012
- International Fire Prevention Code – 2012
- NFPA 13-2010, Installation of Sprinkler Systems
- NFPA 14-2010, Installation of Standpipe and Hose Systems
- University of Tennessee – Division of Facilities Planning – Designer's Manual
- University of Tennessee Knoxville – Facilities Services – Design & Construction Guidelines

#### DESIGN CRITERIA

The building will be protected throughout by automatic sprinklers.

Sprinkler piping will be sized by hydraulic calculations. Research labs, high bay lab, mechanical rooms and storage areas will be classified Ordinary Hazard, Group 1. Other areas will be classified Light Hazard. Hydraulic design criteria will be in accordance with NFPA 13-2010, Paragraph 11-2.3 as follows:

- Light Hazard areas will be designed to provide a minimum density of 0.10 gpm/ft<sup>2</sup>. Maximum area per sprinkler will be 225 ft<sup>2</sup>.
- Ordinary Hazard, Group 1 areas will be designed to provide a minimum density of 0.15 gpm/ft<sup>2</sup>. Maximum area per sprinkler will be 130 ft<sup>2</sup>.
- Minimum design area will be the most hydraulically demanding 1500 ft<sup>2</sup> for wet systems.
- A simultaneous inside hose demand of 250 gpm will be included for all areas.
- Sprinkler connections for each zone will include a monitored control valve, a flow switch, and a test/drain connection. A drain riser with discharge at the building exterior will also be provided to serve each sprinkler system.

#### SYSTEMS

The fire water service will be located in a mechanical room on the first level of the building. The fire water service will be provided with an indoor, UL-listed, ASSE-approved, reduced-pressure type backflow prevention device.

Sprinklers heads will be commercial, quick response, UL listed type. Sprinklers in areas having ceilings will be semi-recessed pendent design with a white finish and white ceiling cup. Concealed type sprinklers with white cover plates will be used in areas with gypsum board ceilings. Sprinkler heads in areas without ceilings will be upright type.

Aboveground piping will be black steel with threaded, grooved, or welded fittings. Piping 2" and smaller will be schedule 40 and pipe 2.5" and larger will be schedule 10. No plain-end fittings, strap-on branch outlets, or couplings employing set screws will be used.

# 04 SYSTEM NARRATIVES

## MEP Programming Narrative

Underground piping will be cement-lined ductile iron with mechanical joints. Underground piping will be anchored with concrete thrust blocks and tie rods.

The fire suppression system will be monitored by the building fire alarm system. Monitor points will include trouble and alarm conditions for waterflow switches, valve monitor switches, and fire department access key (Knox) boxes.

**MEP Programming Narrative**

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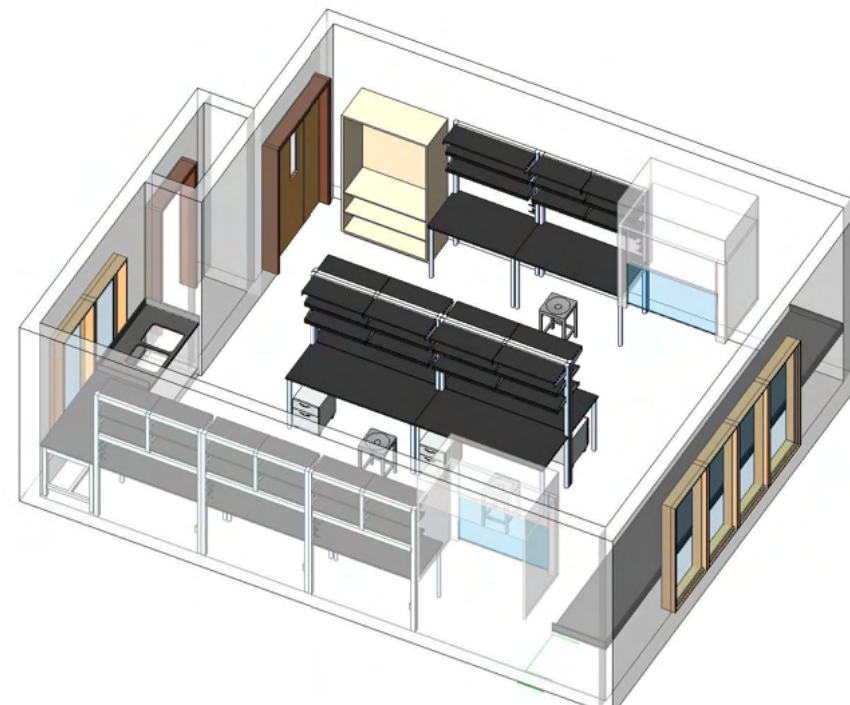
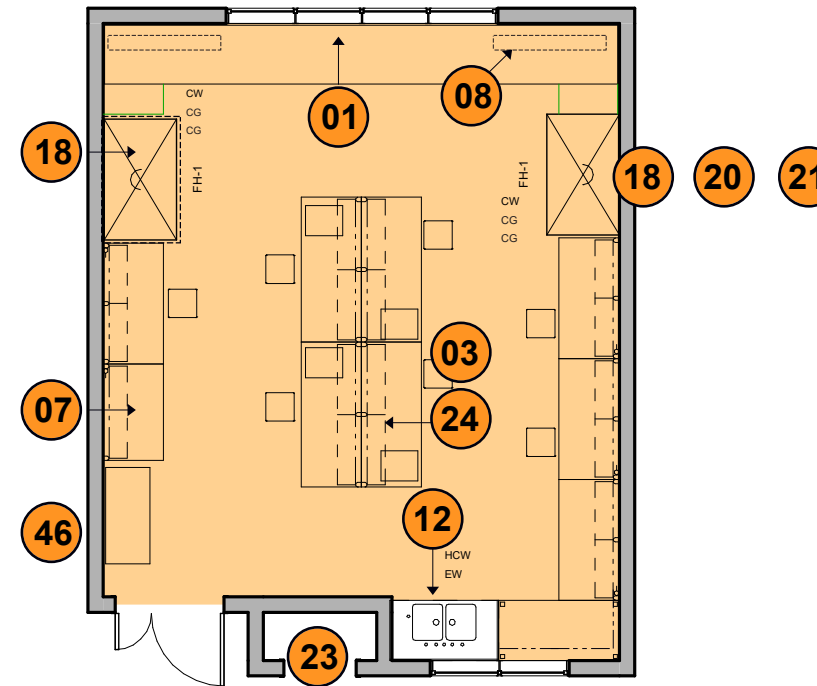


5.0

SPACE DIAGRAMS

# 05 SPACE DIAGRAMS

## 5.1. Research / Incubator Lab (2 modules)



### LEGEND

1. BASE CABINET, STANDING HT.
2. BASE CABINET, SITTING HT.
3. LABORATORY BENCH SYSTEM
4. MOBILE CABINET
5. LAB TABLE, STANDING HT.
6. LAB TABLE, SITTING HT.
7. LAB TABLE, ADJ. HT.
8. ADJUSTABLE WALL SHELVING
9. WALL CABINET
10. TALL STORAGE CABINET
11. HEAVY DUTY SHELVING
12. LABORATORY SINK
13. CUP SINK
14. SCULLERY SINK (SS)
15. MOBILE CAGING
16. HEADWALL
17. COUNTERTOP WITH OVERHEAD SHELVES
18. OVERHEAD PROCEDURE LIGHT
19. STAINLESS STEEL WALL-HUNG SINK
20. CHAIR
21. TABLE WITH SINK
22. COUNTERTOP WITH OVERHEAD SHELVES
23. PROCEDURE TABLE
24. CEILING SERVICE PANEL
25. OVERHEAD SERVICE CARRIER
26. EQUIPMENT SPACE
27. REFRIGERATOR/FREEZER
28. LOW TEMP FREEZER
30. UNDERCOUNTER REFRIG.
31. WATER POLISHING STATION
32. ICE MACHINE
33. LAB CART (OFOI)
34. WRITE UP SPACE
35. PEGBOARD
36. PAPER TOWEL HOLDER
37. MARKERBOARD
38. TACKBOARD
39. OFFICE FURNITURE
40. STORAGE

- HCW HOT AND COLD WATER
- CW COLD WATER
- PW PURE WATER (GRADE TBD)
- EW EYEWASH
- FD FLOOR DRAIN
- FS FLOOR SINK
- SS STAINLESS STEEL
- A AIR
- V VACUUM
- CG CYLINDER GAS

- ELECTRICAL DATA RACEWAY
- DUPLEX POWER OUTLET
- ⊕ SPECIAL POWER OUTLET
- ⊕ EP SPECIAL POWER OUTLET ON EMERGENCY POWER
- ⊕ EP SINGLE POWER OUTLET ON EMERGENCY POWER
- ⊕ DUPLEX POWER OUTLET CONCEIVING MTD CORD REEL
- ▲ DUPLEX DATA OUTLET

## Research / Incubator Lab Description

### SPACE REQUIRED

Name: Research Lab

Occupancy: 6-8 Occupants

Net Square Footage: 594 SF

Unit Square Footage: N/A

### 2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

#### Relationships:

- a. Contiguous: N/A
- b. Adjacent: Locate adjacent to other Research Lab Space.
- c. Convenient: Locate remote from Public Spaces and Office Spaces.

#### Services and Features:

- a. Atmospheric Criteria: Summer 75°F db / 50% RH  
Winter 70°F db  
People Outdoor Air Rate Rp = 10 CFM per person  
Area Outdoor Air Rate Ra = 0.18 CFM per square foot  
Pressurization: Negative  
100% exhausted
- b. Illumination: Maintained Average Illumination: 50-75 footcandles  
Lighting Power Density: 1.2 watts per square foot max  
Dimmed lighting control system with automatic shutoff
- c. Electrical: 120 V ceiling receptacle outlets, minimum two locations  
120 V general receptacle outlets, minimum 10' O.C. at wall  
120 V general receptacle outlets, 2'-0" O.C. at casework  
(above counter in surface mounted raceway)  
208 V general receptacle outlet at Future Equipment Space

d. Communications: Communication ceiling outlets, minimum two locations

Communication wall outlets, 6'-0" O.C. at casework  
(above counter in surface mounted raceway)

Wireless Internet connectivity

e. Plumbing: Hot & cold water at lab sink with emergency eyewash

f. Music/Video: N/A

#### Finishes:

This section is to record specific requirements for all surface areas.

a. Floor & Base: Polished concrete or Resilient Tile Flooring with Rubber Base

b. Walls: Painted Gypsum Board

c. Ceiling: Acoustical Ceiling Tile throughout

d. Doors and Frames: Painted Steel Doors with Lockable Hardware and Hollow Metal Frames,

minimum 42" clear entry

e. Windows: Aluminum framed glazed system

f. Window Treatments: Blinds or shades

### 3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

A flexible research laboratory space for up to 2 companies/tenants to share

### 4. LIST OF FURNISHINGS AND EQUIPMENT

A = Built-in equipment to be furnished and installed by the General Contractor.

Fixed Casework (Base Cabinets, Wall Cabinets, Wall Shelves, Countertops)

Casework Distinction Tables, Loose (60" x 30")

Fume Hoods

Mobile Lab Cabinet under each Table at center islands

Fire Extinguisher and Cabinet

PPE storage large enough for separated storage of clean and dirty lab coats. Include shelving for "non-hung" PPE like gloves, safety glasses, earplugs, etc.

UTK standard paper towel and soap dispensers at each sink. Labs should also be provided with a drying rack adjacent to the sinks.

Cylinder storage does not require a separate closet. Cylinders will be anchored to walls or benches. Cylinders requiring special exhausts will be placed in vented cabinets. Exhaust connections for future installation of those vented cabinets are required.

B = Specified and procured through Interior Designer (not furnished by GC)

Lab Stools

C = Specified and procured through A/V Consultant (not furnished by GC)

N/A

D = Specified and procured through I.T. Consultant (not by GC)

N/A

E = Supplied by Owner (in project budget)

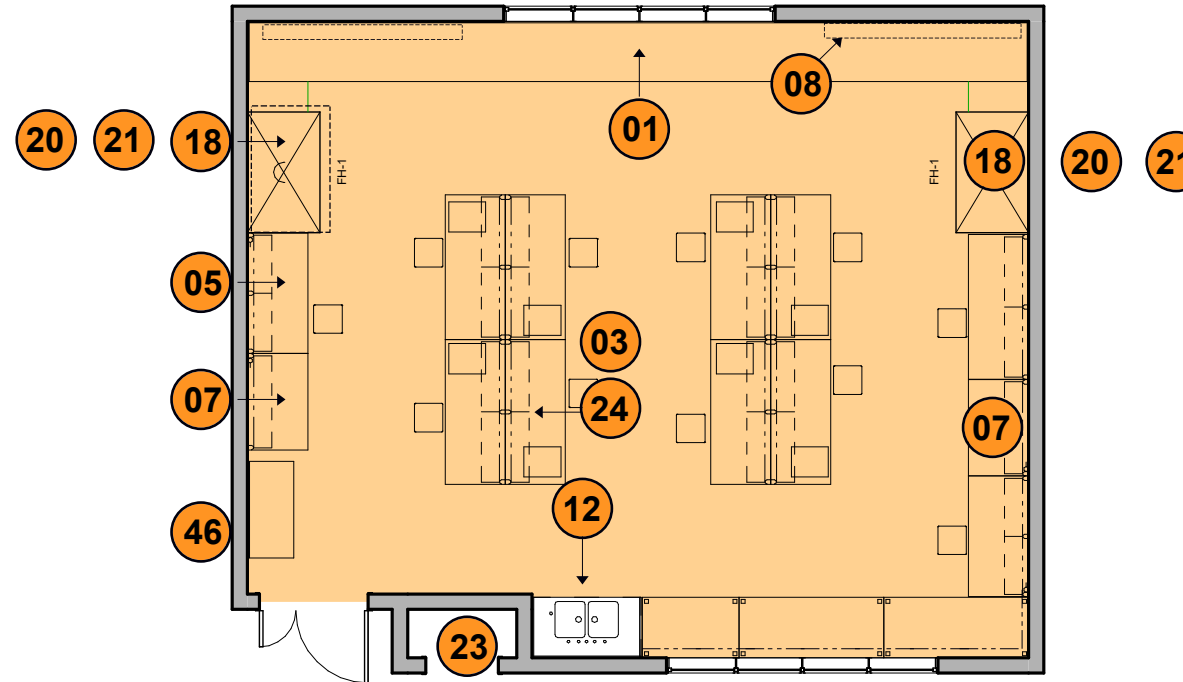
N/A

F = Supplied by Owner (not in project budget)

N/A

# 05 SPACE DIAGRAMS

## 5.2. Research / Incubator Lab (3 modules)



### LEGEND

1. BASE CABINET, STANDING HT.
2. BASE CABINET, SITTING HT.
3. LABORATORY BENCH SYSTEM
4. MOBILE CABINET
5. LAB TABLE, STANDING HT.
6. LAB TABLE, SITTING HT.
7. LAB TABLE, ADJ. HT.
8. ADJUSTABLE WALL SHELVING
9. WALL CABINET
10. TALL STORAGE CABINET
11. HEAVY DUTY SHELVING
12. LABORATORY SINK
13. CUP SINK
14. SCULLERY SINK (SS)
15. MOBILE CAGING
16. HEADWALL
17. COUNTERTOP WITH OVERHEAD SHELVES
18. OVERHEAD PROCEDURE LIGHT
19. STAINLESS STEEL WALL-HUNG SINK
20. CHAIR
21. TABLE WITH SINK
22. COUNTERTOP WITH OVERHEAD SHELVES
23. PROCEDURE TABLE
24. CEILING SERVICE PANEL
25. OVERHEAD SERVICE CARRIER
26. EQUIPMENT SPACE
27. REFRIGERATOR/FREEZER
28. LOW TEMP FREEZER
30. UNDERCOUNTER REFRIG.
31. WATER POLISHING STATION
32. ICE MACHINE
33. LAB CART (OFOI)
34. WRITE UP SPACE
35. PEGBOARD
36. PAPER TOWEL HOLDER
37. MARKERBOARD
38. TACKBOARD
39. OFFICE FURNITURE
40. STORAGE

- HCW HOT AND COLD WATER
- CW COLD WATER
- PW PURE WATER (GRADE TBD)
- EW EYEWASH
- FD FLOOR DRAIN
- FS FLOOR SINK
- SS STAINLESS STEEL
- A AIR
- V VACUUM
- CG CYLINDER GAS

- ELECTRICAL DATA RACEWAY
- DUPLEX POWER OUTLET
- ⊕ SPECIAL POWER OUTLET
- ⊕ EP SPECIAL POWER OUTLET ON EMERGENCY POWER
- ⊕ EP SINGLE POWER OUTLET ON EMERGENCY POWER
- ⊕ DUPLEX POWER OUTLET CONCEIVING MTD CORD REEL
- ▲ DUPLEX DATA OUTLET

## Research / Incubator Lab Description

### SPACE REQUIRED

Name: Research Lab

Occupancy: 10-12 Occupants

Net Square Footage: 891 SF

Unit Square Footage: N/A

### 2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

#### Relationships:

- a. Contiguous: N/A
- b. Adjacent: Locate adjacent to other Research Lab Space.
- c. Convenient: Locate remote from Public Spaces and Office Spaces.

#### Services and Features:

- a. Atmospheric Criteria: Summer 75°F db / 50% RH  
Winter 70°F db  
People Outdoor Air Rate Rp = 10 CFM per person  
Area Outdoor Air Rate Ra = 0.18 CFM per square foot  
Pressurization: Negative  
100% exhausted
- b. Illumination: Maintained Average Illumination: 50-75 footcandles  
Lighting Power Density: 1.2 watts per square foot max  
Dimmed lighting control system with automatic shutoff
- c. Electrical: All receptacles will be served by the building generator  
120 V ceiling receptacle outlets, minimum two locations  
120 V general receptacle outlets, minimum 10' O.C. at wall  
120 V general receptacle outlets, 2'-0" O.C. at casework  
(above counter in surface mounted raceway)  
208 V general receptacle outlet at Future Equipment Space

d. Communications: Communication ceiling outlets, minimum two locations

Communication wall outlets, 6'-0" O.C. at casework  
(above counter in surface mounted raceway)

Wireless Internet connectivity

e. Plumbing: Hot & cold water at lab sink with emergency eyewash

f. Music/Video: N/A

#### Finishes:

This section is to record specific requirements for all surface areas.

a. Floor & Base: Polished concrete or Resilient Tile Flooring with Rubber Base

b. Walls: Painted Gypsum Board

c. Ceiling: Acoustical Ceiling Tile throughout

d. Doors and Frames: Painted Steel Doors with Lockable Hardware and Hollow Metal Frames,

minimum 42" clear entry

e. Windows: Aluminum framed glazed system

f. Window Treatments: Blinds or shades

### 3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

A flexible research laboratory space for up to 2 companies/tenants to share

### 4. LIST OF FURNISHINGS AND EQUIPMENT

A = Built-in equipment to be furnished and installed by the General Contractor.

Fixed Casework (Base Cabinets, Wall Cabinets, Wall Shelves, Countertops)

Casework Distinction Tables, Loose (60" x 30")

Fume Hoods

Mobile Lab Cabinet under each Table at center islands

Fire Extinguisher and Cabinet

PPE storage large enough for separated storage of clean and dirty lab coats. Include shelving for "non-hung" PPE like gloves, safety glasses, earplugs, etc.

UTK standard paper towel and soap dispensers at each sink. Labs should also be provided with a drying rack adjacent to the sinks.

Cylinder storage does not require a separate closet. Cylinders will be anchored to walls or benches. Cylinders requiring special exhausts will be placed in vented cabinets. Exhaust connections for future installation of those vented cabinets are required.

B = Specified and procured through Interior Designer (not furnished by GC)

Lab Stools

C = Specified and procured through A/V Consultant (not furnished by GC)

N/A

D = Specified and procured through I.T. Consultant (not by GC)

N/A

E = Supplied by Owner (in project budget)

N/A

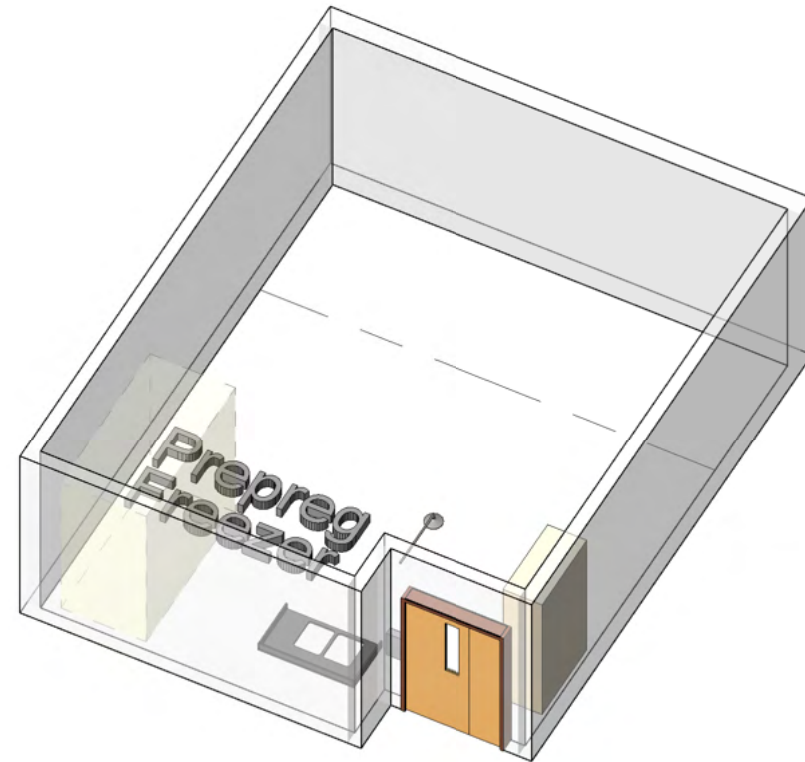
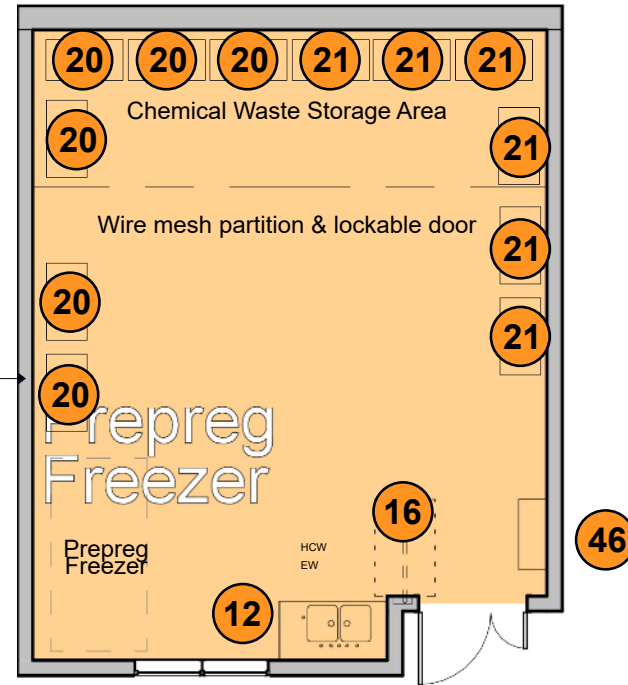
F = Supplied by Owner (not in project budget)

N/A

# 05 SPACE DIAGRAMS

## 5.3. Haz Mat + Storage

1-hr fire-rated walls for control area separation for this room



### LEGEND

1. BASE CABINET, STANDING HT.
2. BASE CABINET, SITTING HT.
3. LABORATORY BENCH SYSTEM
4. MOBILE CABINET
5. LAB TABLE, STANDING HT.
6. LAB TABLE, SITTING HT.
7. LAB TABLE, ADJ. HT.
8. ADJUSTABLE WALL SHELVING
9. WALL CABINET
10. TALL STORAGE CABINET
11. HEAVY DUTY SHELVING
12. LABORATORY SINK
13. CUP SINK
14. SCULLERY SINK (SS)
15. MOBILE CAGING
16. HEADWALL
17. COUNTERTOP WITH OVERHEAD SHELVES
18. OVERHEAD PROCEDURE LIGHT
19. STAINLESS STEEL WALL-HUNG SINK
20. CHAIR
21. TABLE WITH SINK
22. COUNTERTOP WITH OVERHEAD SHELVES
23. PROCEDURE TABLE
24. CEILING SERVICE PANEL
25. OVERHEAD SERVICE CARRIER
26. EQUIPMENT SPACE
27. REFRIGERATOR/FREEZER
28. LOW TEMP FREEZER
30. UNDERCOUNTER REFRIG.
31. WATER POLISHING STATION
32. ICE MACHINE
33. LAB CART (OFOI)
34. WRITE UP SPACE
35. PEGBOARD
36. PAPER TOWEL HOLDER
37. MARKERBOARD
38. TACKBOARD
39. OFFICE FURNITURE
40. STORAGE

- HCW HOT AND COLD WATER
- CW COLD WATER
- PW PURE WATER (GRADE TBD)
- EW EYEWASH
- FD FLOOR DRAIN
- FS FLOOR SINK
- SS STAINLESS STEEL
- A AIR
- V VACUUM
- CG CYLINDER GAS

- ELECTRICAL DATA RACEWAY
- DUPLEX POWER OUTLET
- ⊕ SPECIAL POWER OUTLET
- ⊕ EP SPECIAL POWER OUTLET ON EMERGENCY POWER
- ⊕ EP SINGLE POWER OUTLET ON EMERGENCY POWER
- ⊕ DUPLEX POWER OUTLET CONCEIVING MTD CORD REEL
- ▲ DUPLEX DATA OUTLET

## Haz Mat + Storage Description

### SPACE REQUIRED

Name: Haz Mat + Storage

Occupancy: 2 Occupants

Net Square Footage: 594 SF

Unit Square Footage: N/A

### 2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

#### Relationships:

- a. Contiguous: *see concept floor plan*
- b. Adjacent: *see concept floor plan*
- c. Convenient: *see concept floor plan*

#### Services and Features:

- a. Atmospheric Criteria: Summer 75°F db / 50% RH  
 Winter 70°F db  
 People Outdoor Air Rate Rp = N/A  
 Area Outdoor Air Rate Ra = 0.06 CFM per square foot  
 Pressurization: Negative  
 100% exhausted
- b. Illumination: Maintained Average Illumination: 75 footcandles  
 Lighting Power Density: 1.2 watts per square foot max  
 Lighting control system with automatic shutoff
- c. Electrical: 120 V general receptacle outlets, minimum 10' O.C. at wall  
 Outlets as required for equipment (confirm if emergency power is required)
- d. Communications: Communication wall outlets, 2 locations  
 Wireless Internet connectivity
- e. Plumbing: Hot & cold water at lab sink with emergency eyewash  
 Safety Shower

f. Music/Video: N/A

#### Finishes:

This section is to record specific requirements for all surface areas.

- a. Floor & Base: Sealed Concrete Flooring with Rubber Base
- b. Walls: Painted Gypsum Board or CMU, wire mesh partition
- c. Ceiling: Exposed structure
- d. Doors and Frames: Painted Steel Doors with Lockable Hardware and Hollow Metal Frames, Door Light.  
 minimum 42" clear entry
- e. Windows: Aluminum framed glazed system
- f. Window Treatments: Blinds or shades

### 3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

Storage for waste chemical and chemicals to be used in the labs

### 4. LIST OF FURNISHINGS AND EQUIPMENT

A = Built-in equipment to be furnished and installed by the General Contractor.

Flammable Storage Cabinets

Acids Storage Cabinets

Safety Shower

Fixed Casework

Fire Extinguisher and Cabinet

UTK standard paper towel and soap dispensers at each sink. Labs should also be provided with a drying rack adjacent to the sinks.

Cylinder storage does not require a separate closet. Cylinders will be anchored to walls or benches. Cylinders requiring special exhausts will be placed in vented cabinets. Exhaust connections for future installation of those vented cabinets are required.

B = Specified and procured through Interior Designer (not furnished by GC)

N/A

C = Specified and procured through A/V Consultant (not furnished by GC)

N/A

D = Specified and procured through I.T. Consultant (not by GC)

N/A

E = Supplied by Owner (in project budget)

N/A

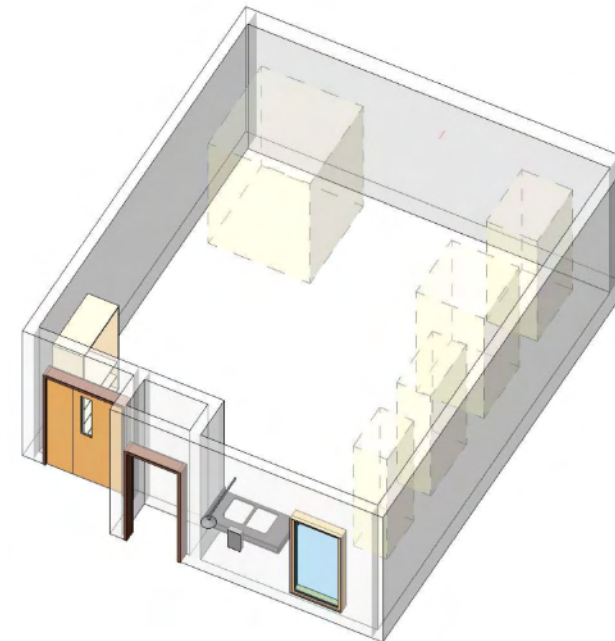
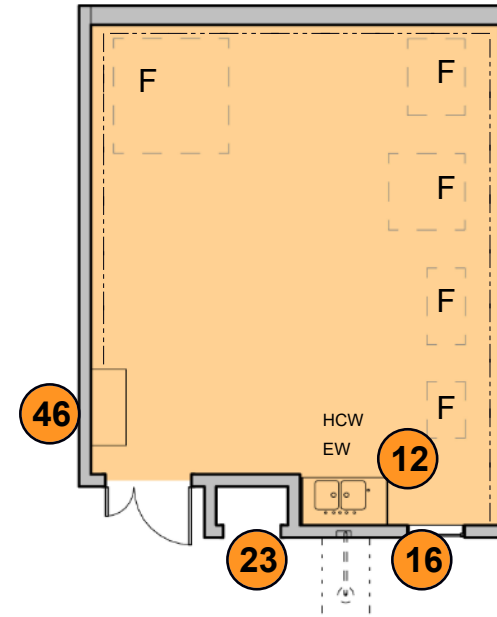
F = Supplied by Owner (not in project budget)

See room diagram and Owner Supplied Equipment List in Section 3.0



# 05 SPACE DIAGRAMS

## 5.4. Testing



### LEGEND

1. BASE CABINET, STANDING HT.
2. BASE CABINET, SITTING HT.
3. LABORATORY BENCH SYSTEM
4. MOBILE CABINET
5. LAB TABLE, STANDING HT.
6. LAB TABLE, SITTING HT.
7. LAB TABLE, ADJ. HT.
8. ADJUSTABLE WALL SHELVING
9. WALL CABINET
10. TALL STORAGE CABINET
11. HEAVY DUTY SHELVING
12. LABORATORY SINK
13. CUP SINK
14. SCULLERY SINK (SS)
15. MOBILE CAGING
16. HEADWALL
17. COUNTERTOP WITH OVERHEAD SHELVES
18. OVERHEAD PROCEDURE LIGHT
19. STAINLESS STEEL WALL-HUNG SINK
20. CHAIR
21. TABLE WITH SINK
22. COUNTERTOP WITH OVERHEAD SHELVES
23. PROCEDURE TABLE
24. CEILING SERVICE PANEL
25. OVERHEAD SERVICE CARRIER
26. EQUIPMENT SPACE
27. REFRIGERATOR/FREEZER
28. LOW TEMP FREEZER
30. UNDERCOUNTER REFRIG.
31. WATER POLISHING STATION
32. ICE MACHINE
33. LAB CART (OFOI)
34. WRITE UP SPACE
35. PEGBOARD
36. PAPER TOWEL HOLDER
37. MARKERBOARD
38. TACKBOARD
39. OFFICE FURNITURE
40. STORAGE

- HCW HOT AND COLD WATER  
 CW COLD WATER  
 PW PURE WATER (GRADE TBD)  
 EW EYEWASH  
 FD FLOOR DRAIN  
 FS FLOOR SINK  
 SS STAINLESS STEEL  
 A AIR  
 V VACUUM  
 CG CYLINDER GAS

- ELECTRICAL DATA RACEWAY
- DUPLEX POWER OUTLET
- ⊕ SPECIAL POWER OUTLET
- ⊕ EP SPECIAL POWER OUTLET ON EMERGENCY POWER
- ⊕ EP SINGLE POWER OUTLET ON EMERGENCY POWER
- ⊕ DUPLEX POWER OUTLET CONCEIVING MTD CORD REEL
- ▲ DUPLEX DATA OUTLET

## Testing Lab Description

SPACE REQUIRED

Name: Testing

Occupancy: 2 Occupants

Net Square Footage: 594 SF

Unit Square Footage: N/A

### 2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

Relationships:

- a. Contiguous: *see concept floor plan*
- b. Adjacent: *see concept floor plan*
- c. Convenient: *see concept floor plan*

Services and Features:

- a. Atmospheric Criteria: Summer 75°F db / 50% RH  
 Winter 70°F db  
 People Outdoor Air Rate Rp = 10 CFM per person  
 Area Outdoor Air Rate Ra = 0.18 CFM per square foot  
 Pressurization: Negative  
 100% exhausted
- b. Illumination: Maintained Average Illumination: 50-75 footcandles  
 Lighting Power Density: 1.2 watts per square foot max  
 Dimmed lighting control system with automatic shutoff
- c. Electrical: 120 V general receptacle outlets, minimum 4' O.C. at wall  
 Outlets as required for equipment (confirm if emergency power is required)
- d. Communications: Communication wall outlets, 2 locations  
 Wireless Internet connectivity
- e. Plumbing: Hot & cold water at lab sink with emergency eyewash  
 Safety Shower

f. Music/Video: N/A

Finishes:

This section is to record specific requirements for all surface areas.

- a. Floor & Base: Sealed Concrete Flooring with Rubber Base
- b. Walls: Painted Gypsum Board or CMU, wire mesh partition
- c. Ceiling: Exposed structure
- d. Doors and Frames: Painted Steel Doors with Lockable Hardware and Hollow Metal Frames,  
 minimum 42" clear entry
- e. Windows: Aluminum framed glazed system
- f. Window Treatments: Blinds or shades

### 3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

Storage for waste chemical and chemicals to be used in the labs

### 4. LIST OF FURNISHINGS AND EQUIPMENT

A = Built-in equipment to be furnished and installed by the General Contractor.

Fixed Casework with lab sink & eyewash

Safety Shower

Fire Extinguisher and Cabinet

UTK standard paper towel and soap dispensers at each sink. Labs should also be provided with a drying rack adjacent to the sinks.

Cylinder storage does not require a separate closet. Cylinders will be anchored to walls or benches. Cylinders requiring special exhausts will be placed in vented cabinets. Exhaust connections for future installation of those vented cabinets are required.

B = Specified and procured through Interior Designer (not furnished by GC)

N/A

C = Specified and procured through A/V Consultant (not furnished by GC)

N/A

D = Specified and procured through I.T. Consultant (not by GC)

N/A

E = Supplied by Owner (in project budget)

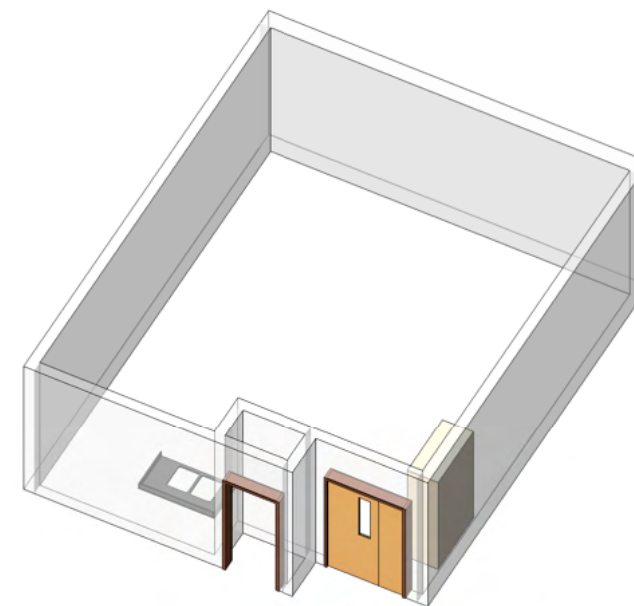
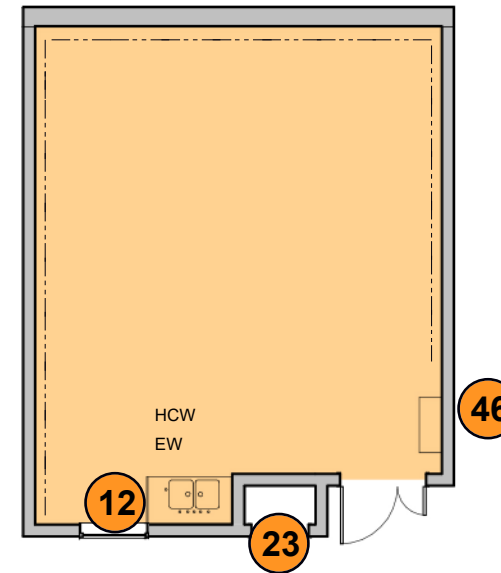
N/A

F = Supplied by Owner (not in project budget)

See room diagram and Owner Supplied Equipment List in Section 3.0

# 05 SPACE DIAGRAMS

## 5.5. Fiber Preforming Room



### LEGEND

1. BASE CABINET, STANDING HT.
2. BASE CABINET, SITTING HT.
3. LABORATORY BENCH SYSTEM
4. MOBILE CABINET
5. LAB TABLE, STANDING HT.
6. LAB TABLE, SITTING HT.
7. LAB TABLE, ADJ. HT.
8. ADJUSTABLE WALL SHELVING
9. WALL CABINET
10. TALL STORAGE CABINET
11. HEAVY DUTY SHELVING
12. LABORATORY SINK
13. CUP SINK
14. SCULLERY SINK (SS)
15. MOBILE CAGING
16. HEADWALL
17. COUNTERTOP WITH OVERHEAD SHELVES
18. OVERHEAD PROCEDURE LIGHT
19. STAINLESS STEEL WALL-HUNG SINK
20. CHAIR
21. TABLE WITH SINK
22. COUNTERTOP WITH OVERHEAD SHELVES
23. PROCEDURE TABLE
24. CEILING SERVICE PANEL
25. OVERHEAD SERVICE CARRIER
26. EQUIPMENT SPACE
27. REFRIGERATOR/FREEZER
28. LOW TEMP FREEZER
30. UNDERCOUNTER REFRIG.
31. WATER POLISHING STATION
32. ICE MACHINE
33. LAB CART (OFOI)
34. WRITE UP SPACE
35. PEGBOARD
36. PAPER TOWEL HOLDER
37. MARKERBOARD
38. TACKBOARD
39. OFFICE FURNITURE
40. STORAGE

- HCW HOT AND COLD WATER
- CW COLD WATER
- PW PURE WATER (GRADE TBD)
- EW EYEWASH
- FD FLOOR DRAIN
- FS FLOOR SINK
- SS STAINLESS STEEL
- A AIR
- V VACUUM
- CG CYLINDER GAS

- ELECTRICAL DATA RACEWAY
- DUPLEX POWER OUTLET
- ⊕ SPECIAL POWER OUTLET
- ⊕ EP SPECIAL POWER OUTLET ON EMERGENCY POWER
- ⊕ EP SINGLE POWER OUTLET ON EMERGENCY POWER
- ⊕ DUPLEX POWER OUTLET CONCEIVING MTD CORD REEL
- ▲ DUPLEX DATA OUTLET

## Fiber Preforming Room Description

### SPACE REQUIRED

Name: Fiber Preforming Room

Occupancy: 4-6 Occupants

Net Square Footage: 594 SF

Unit Square Footage: N/A

### 2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

#### Relationships:

- a. Contiguous: *see concept floor plan*
- b. Adjacent: *see concept floor plan*
- c. Convenient: *see concept floor plan*

#### Services and Features:

- a. Atmospheric Criteria: Summer 75°F db / 50% RH  
 Winter 70°F db  
 People Outdoor Air Rate Rp = 10 CFM per person  
 Area Outdoor Air Rate Ra = 0.18 CFM per square foot  
 Pressurization: Negative  
 100% exhausted
- b. Illumination: Maintained Average Illumination: 50-75 footcandles  
 Lighting Power Density: 1.2 watts per square foot max  
 Dimmed lighting control system with automatic shutoff
- c. Electrical: 120 V general receptacle outlets, minimum 4' O.C. at wall  
 Outlets as required for equipment (confirm if emergency power is required)
- d. Communications: Communication wall outlets, 6'-0" O.C. (In surface mounted raceway)  
 Wireless Internet connectivity
- e. Plumbing: Hot & cold water at lab sink with emergency eyewash
- f. Music/Video: N/A

#### Finishes:

This section is to record specific requirements for all surface areas.

- a. Floor & Base: Sealed Concrete Flooring with Rubber Base
- b. Walls: Painted Gypsum Board or CMU
- c. Ceiling: Exposed structure
- d. Doors and Frames: Painted Steel Doors with Lockable Hardware and Hollow Metal Frames,  
 minimum 42" clear entry
- e. Windows: Aluminum framed glazed system
- f. Window Treatments: Blinds or shades

### 3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

A flexible lab for initial use with fiber preforming equipment & processes

### 4. LIST OF FURNISHINGS AND EQUIPMENT

A = Built-in equipment to be furnished and installed by the General Contractor.

Fixed Casework with lab sink & eyewash

Fire Extinguisher and Cabinet

UTK standard paper towel and soap dispensers at each sink. Labs should also be provided with a drying rack adjacent to the sinks.

Cylinder storage does not require a separate closet. Cylinders will be anchored to walls or benches. Cylinders requiring special exhausts will be placed in vented cabinets. Exhaust connections for future installation of those vented cabinets are required.

B = Specified and procured through Interior Designer (not furnished by GC)

N/A

C = Specified and procured through A/V Consultant (not furnished by GC)

N/A

D = Specified and procured through I.T. Consultant (not by GC)

N/A

E = Supplied by Owner (in project budget)

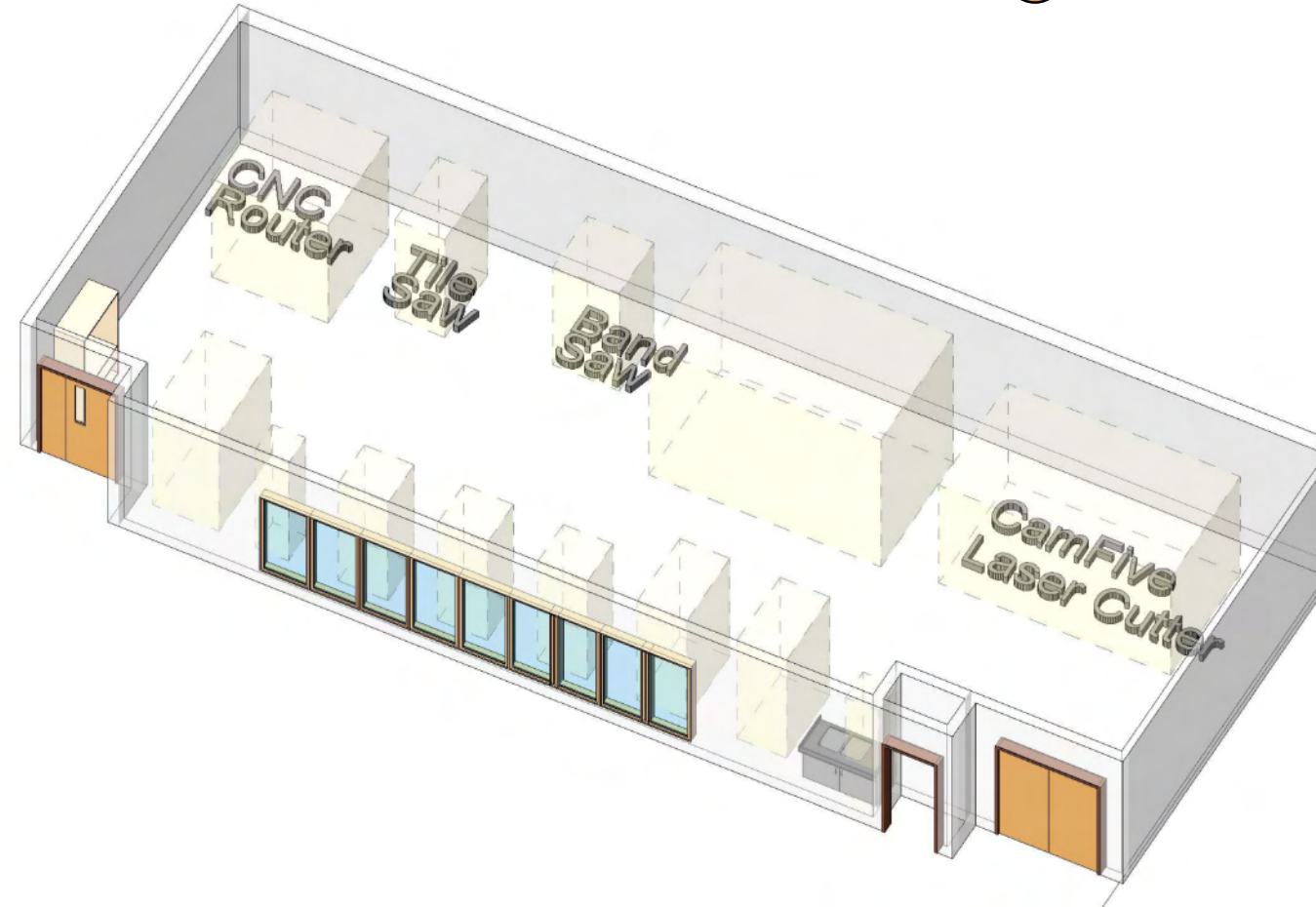
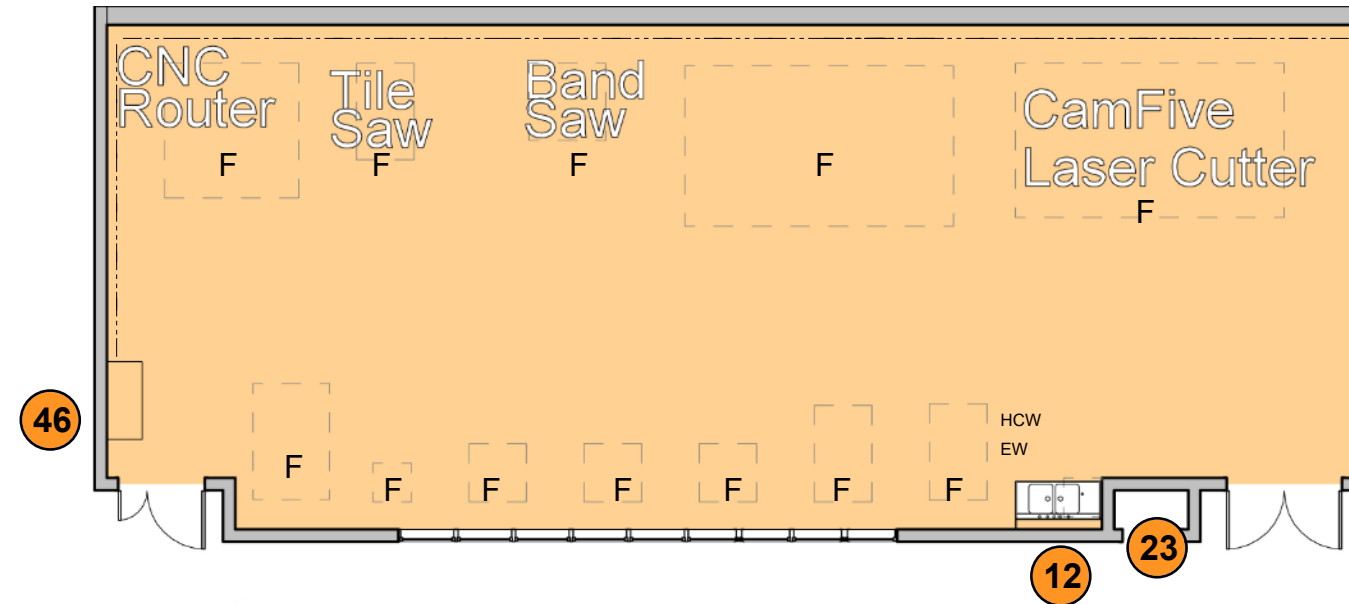
N/A

F = Supplied by Owner (not in project budget)

See room diagram and Owner Supplied Equipment List in Section 3.0

# 05 SPACE DIAGRAMS

## 5.6. Machining Center



### LEGEND

1. BASE CABINET, STANDING HT.
2. BASE CABINET, SITTING HT.
3. LABORATORY BENCH SYSTEM
4. MOBILE CABINET
5. LAB TABLE, STANDING HT.
6. LAB TABLE, SITTING HT.
7. LAB TABLE, ADJ. HT.
8. ADJUSTABLE WALL SHELVING
9. WALL CABINET
10. TALL STORAGE CABINET
11. HEAVY DUTY SHELVING
12. LABORATORY SINK
13. CUP SINK
14. SCULLERY SINK (SS)
15. MOBILE CAGING
16. HEADWALL
17. COUNTERTOP WITH OVERHEAD SHELVES
18. OVERHEAD PROCEDURE LIGHT
19. STAINLESS STEEL WALL-HUNG SINK
20. CHAIR
21. TABLE WITH SINK
22. COUNTERTOP WITH OVERHEAD SHELVES
23. PROCEDURE TABLE
24. CEILING SERVICE PANEL
25. OVERHEAD SERVICE CARRIER
26. EQUIPMENT SPACE
27. REFRIGERATOR/FREEZER
28. LOW TEMP FREEZER
30. UNDERCOUNTER REFRIG.
31. WATER POLISHING STATION
32. ICE MACHINE
33. LAB CART (OFOI)
34. WRITE UP SPACE
35. PEGBOARD
36. PAPER TOWEL HOLDER
37. MARKERBOARD
38. TACKBOARD
39. OFFICE FURNITURE
40. STORAGE

- HCW HOT AND COLD WATER
- CW COLD WATER
- PW PURE WATER (GRADE TBD)
- EW EYEWASH
- FD FLOOR DRAIN
- FS FLOOR SINK
- SS STAINLESS STEEL
- A AIR
- V VACUUM
- CG CYLINDER GAS

- ELECTRICAL DATA RACEWAY
- DUPLEX POWER OUTLET
- ⊕ SPECIAL POWER OUTLET
- ⊕ EP SPECIAL POWER OUTLET ON EMERGENCY POWER
- ⊕ EP SINGLE POWER OUTLET ON EMERGENCY POWER
- ⊕ DUPLEX POWER OUTLET CONCEIVING MTD CORD REEL
- ▲ DUPLEX DATA OUTLET

## Machining Center Description

### SPACE REQUIRED

Name: Machining Center

Occupancy: 10-12 Occupants

Net Square Footage: 1782 SF

Unit Square Footage: N/A

### 2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

#### Relationships:

- a. Contiguous: *see concept floor plan*
- b. Adjacent: *see concept floor plan*
- c. Convenient: *see concept floor plan*

#### Services and Features:

- a. Atmospheric Criteria: Summer 75°F db / 50% RH

Winter 70°F db

People Outdoor Air Rate Rp = 10 CFM per person

Area Outdoor Air Rate Ra = 0.18 CFM per square foot

Pressurization: Negative

100% exhausted

Particulate and fume exhaust as required for specific equipment

- b. Illumination: Maintained Average Illumination: 50-75 footcandles

Lighting Power Density: 1.2 watts per square foot max

Dimmed lighting control system with automatic shutoff

- c. Electrical: 120 V general receptacle outlets, minimum 4' O.C. at wall

Outlets as required for equipment (confirm if emergency power is required)

- d. Communications: Communication wall outlets, 6'-0" O.C. (In surface mounted raceway)

Wireless Internet connectivity

- e. Plumbing: Hot & cold water at lab sink with emergency eyewash

Safety shower

- f. Music/Video: N/A

#### Finishes:

This section is to record specific requirements for all surface areas.

- a. Floor & Base: Sealed Concrete Flooring with Rubber Base
- b. Walls: Painted Gypsum Board or CMU
- c. Ceiling: Exposed structure
- d. Doors and Frames: Painted Steel Doors with Lockable Hardware and Hollow Metal Frames,  
minimum 42" & 68" clear entry
- e. Windows: Aluminum framed glazed system
- f. Window Treatments: Blinds or shades

### 3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

A flexible lab for initial use with machining equipment & processes

### 4. LIST OF FURNISHINGS AND EQUIPMENT

A = Built-in equipment to be furnished and installed by the General Contractor.

Fixed Casework with lab sink & eyewash

Fire Extinguisher and Cabinet

UTK standard paper towel and soap dispensers at each sink. Labs should also be provided with a drying rack adjacent to the sinks.

Cylinder storage does not require a separate closet. Cylinders will be anchored to walls or benches. Cylinders requiring special exhausts will be placed in vented cabinets. Exhaust connections for future installation of those vented cabinets are required.

B = Specified and procured through Interior Designer (not furnished by GC)

N/A

C = Specified and procured through A/V Consultant (not furnished by GC)

N/A

D = Specified and procured through I.T. Consultant (not by GC)

N/A

E = Supplied by Owner (in project budget)

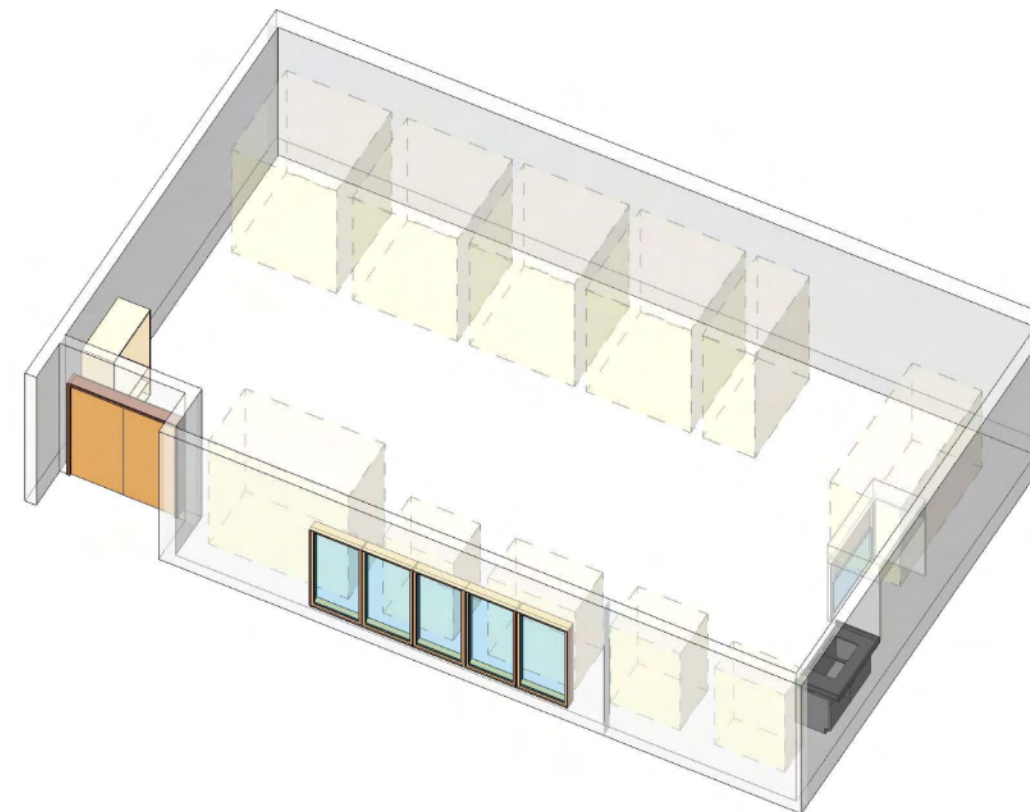
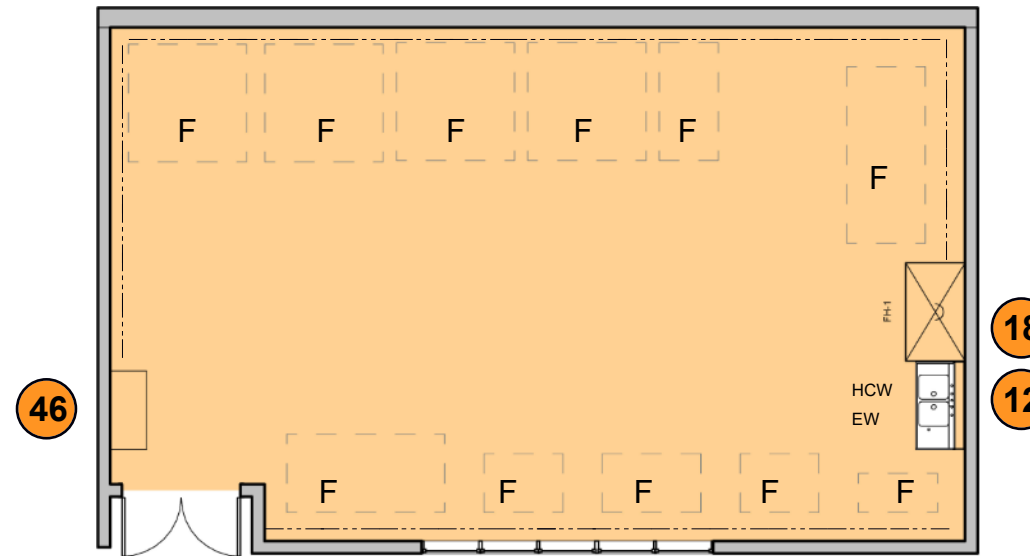
N/A

F = Supplied by Owner (not in project budget)

See room diagram and Owner Supplied Equipment List in Section 3.0

# 05 SPACE DIAGRAMS

## 5.7. Computed Tomography & Support



### LEGEND

1. BASE CABINET, STANDING HT.
2. BASE CABINET, SITTING HT.
3. LABORATORY BENCH SYSTEM
4. MOBILE CABINET
5. LAB TABLE, STANDING HT.
6. LAB TABLE, SITTING HT.
7. LAB TABLE, ADJ. HT.
8. ADJUSTABLE WALL SHELVING
9. WALL CABINET
10. TALL STORAGE CABINET
11. HEAVY DUTY SHELVING
12. LABORATORY SINK
13. CUP SINK
14. SCULLERY SINK (SS)
15. MOBILE CAGING
16. HEADWALL
17. COUNTERTOP WITH OVERHEAD SHELVES
18. OVERHEAD PROCEDURE LIGHT
19. STAINLESS STEEL WALL-HUNG SINK
20. CHAIR
21. TABLE WITH SINK
22. COUNTERTOP WITH OVERHEAD SHELVES
23. PROCEDURE TABLE
24. CEILING SERVICE PANEL
25. OVERHEAD SERVICE CARRIER
26. EQUIPMENT SPACE
27. REFRIGERATOR/FREEZER
28. LOW TEMP FREEZER
30. UNDERCOUNTER REFRIG.
31. WATER POLISHING STATION
32. ICE MACHINE
33. LAB CART (OFOI)
34. WRITE UP SPACE
35. PEGBOARD
36. PAPER TOWEL HOLDER
37. MARKERBOARD
38. TACKBOARD
39. OFFICE FURNITURE
40. STORAGE

- HCW HOT AND COLD WATER  
 CW COLD WATER  
 PW PURE WATER (GRADE TBD)  
 EW EYEWASH  
 FD FLOOR DRAIN  
 FS FLOOR SINK  
 SS STAINLESS STEEL  
 A AIR  
 V VACUUM  
 CG CYLINDER GAS

- ELECTRICAL DATA RACEWAY
- DUPLEX POWER OUTLET
- ⊕ SPECIAL POWER OUTLET
- ⊕ EP SPECIAL POWER OUTLET ON EMERGENCY POWER
- ⊕ EP SINGLE POWER OUTLET ON EMERGENCY POWER
- ⊕ DUPLEX POWER OUTLET CONCEIVING MTD CORD REEL
- ▲ DUPLEX DATA OUTLET

## Computed Tomography Description

### SPACE REQUIRED

Name: Computed Tomography

Occupancy: 8-10 Occupants

Net Square Footage: 1188 SF

Unit Square Footage: N/A

### 2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

#### Relationships:

- a. Contiguous: *see concept floor plan*
- b. Adjacent: *see concept floor plan*
- c. Convenient: *see concept floor plan*

#### Services and Features:

- a. Atmospheric Criteria: Summer 75°F db / 50% RH

Winter 70°F db

People Outdoor Air Rate Rp = 10 CFM per person

Area Outdoor Air Rate Ra = 0.18 CFM per square foot

Pressurization: Negative

100% exhausted

Particulate and fume exhaust as required for specific equipment

- b. Illumination: Maintained Average Illumination: 50-75 footcandles

Lighting Power Density: 1.2 watts per square foot max

Dimmed lighting control system with automatic shutoff

- c. Electrical: 120 V general receptacle outlets, minimum 4' O.C. at wall

Outlets as required for equipment (confirm if emergency power is required)

- d. Communications: Communication wall outlets, 6'-0" O.C. (In surface mounted raceway)

Wireless Internet connectivity

- e. Plumbing: Hot & cold water at lab sink with emergency eyewash

Safety shower

- f. Music/Video: N/A

#### Finishes:

This section is to record specific requirements for all surface areas.

- a. Floor & Base: Sealed Concrete Flooring with Rubber Base
- b. Walls: Painted Gypsum Board or CMU
- c. Ceiling: Exposed structure
- d. Doors and Frames: Painted Steel Doors with Lockable Hardware and Hollow Metal Frames,  
Minimum 68" clear entry
- e. Windows: Aluminum framed glazed system
- f. Window Treatments: Blinds or shades

### 3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

A flexible lab for initial use with computer tomography equipment & processes

### 4. LIST OF FURNISHINGS AND EQUIPMENT

A = Built-in equipment to be furnished and installed by the General Contractor.

Fixed Casework with lab sink & eyewash

Fume hood

Fire Extinguisher and Cabinet

UTK standard paper towel and soap dispensers at each sink. Labs should also be provided with a drying rack adjacent to the sinks.

Cylinder storage does not require a separate closet. Cylinders will be anchored to walls or benches. Cylinders requiring special exhausts will be placed in vented cabinets. Exhaust connections for future installation of those vented cabinets are required.

B = Specified and procured through Interior Designer (not furnished by GC)

N/A

C = Specified and procured through A/V Consultant (not furnished by GC)

N/A

D = Specified and procured through I.T. Consultant (not by GC)

N/A

E = Supplied by Owner (in project budget)

N/A

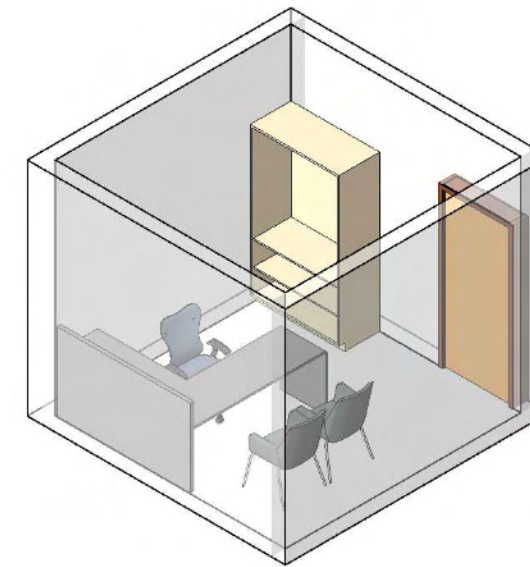
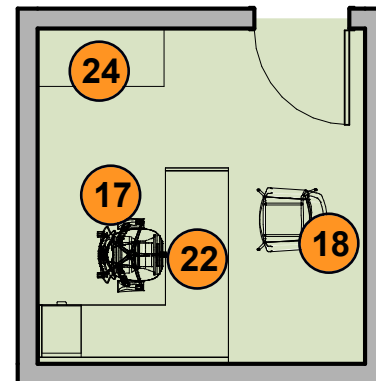
F = Supplied by Owner (not in project budget)

See room diagram and Owner Supplied Equipment List in Section 3.0



# 05 SPACE DIAGRAMS

## 5.8. Office / Hoteling



- |                       |  |                               |                                 |                             |
|-----------------------|--|-------------------------------|---------------------------------|-----------------------------|
| 1. Whiteboard         | 8. Mobile Teaching Lectern - Power   Data   AV | 15. Tablet Arm Chair - Mobile | 22. Office Desk / Workstation   | 29. Work Counter - Standing |
| 2. Tackboard          | 9. Training Table - Power   Data               | 16. Student Chair             | 23. File Cabinet                | 30. Base Cabinet            |
| 3. Projection Screen  | 10. Seminar Table                              | 17. Task Chair                | 24. Bookshelves                 | 31. Wall Cabinet            |
| 4. Digital Projector  | 11. Conference Table                           | 18. Guest Chair               | 25. Credenza                    | 32. Mail Boxes              |
| 5. Flat Panel Display | 12. Side Table                                 | 19. Conference Chair          | 26. Copy   Scanner Machine      | 33. Refrigerator            |
| 6. Moveable Partition | 13. Cafe Table                                 | 20. Stack Chair               | 27. 5-Shelf Wire Shelving Units | 34. Tall Storage Cabinet    |
| 7. Equipment Space    | 14. Lounge   Soft Seating                      | 21. Cafe Chair                | 28. Sink                        |                             |

## Office / Hoteling Description

### SPACE REQUIRED

Name: Office / Hoteling

Occupancy: 1 Occupant

Net Square Footage: 120 SF

Unit Square Footage: N/A

### 2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

#### Relationships:

- a. Contiguous: *see concept floor plan*
- b. Adjacent: *see concept floor plan*
- c. Convenient: *see concept floor plan*

#### Services and Features:

- a. Atmospheric Criteria: Summer 75°F db / 50% RH  
 Winter 70°F db  
 People Outdoor Air Rate  $R_p = 5$  CFM per person  
 Area Outdoor Air Rate  $R_a = 0.06$  CFM per square foot  
 Pressurization: Neutral  
 No exhaust requirements
- b. Illumination: Maintained Average Illumination: 30-50 footcandles  
 Lighting Power Density: 1.0 watts per square foot max  
 Dimmed lighting control system with automatic shutoff
- c. Electrical: 120 V general receptacle outlets, minimum 10' O.C. wall  
 120 V quad receptacle outlet for desk
- d. Communications: Communication outlet for desk  
 Wireless Internet connectivity
- e. Plumbing: No plumbing requirements
- f. Music/Video: N/A

#### Finishes:

- a. Floor & Base: Carpet Tile with Rubber Base
- b. Walls: Painted Gypsum Board
- c. Ceiling: Acoustical Ceiling Tile or painted exposed structure
- d. Doors and Frames: Painted Steel Doors with Lockable Hardware and Hollow Metal Frames
- e. Windows: Aluminum framed glazed system
- f. Window Treatments: Blinds or shades

### 3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

Dedicated or shareable Office for resident or visiting researcher

### 4. LIST OF FURNISHINGS AND EQUIPMENT

A = Built-in equipment to be furnished and installed by the General Contractor.

N/A

B = Specified and procured through Interior Designer (not furnished by GC)

1 Desk

1 Desk Chair

1 Guest Chairs

1 Bookshelf Units (3'-0" W)

1 Lateral File Cabinets (36" W x 28"H)

C = Specified and procured through A/V Consultant (not furnished by GC)

N/A

D = Specified and procured through I.T. Consultant (not by GC)

N/A

E = Supplied by Owner (in project budget)

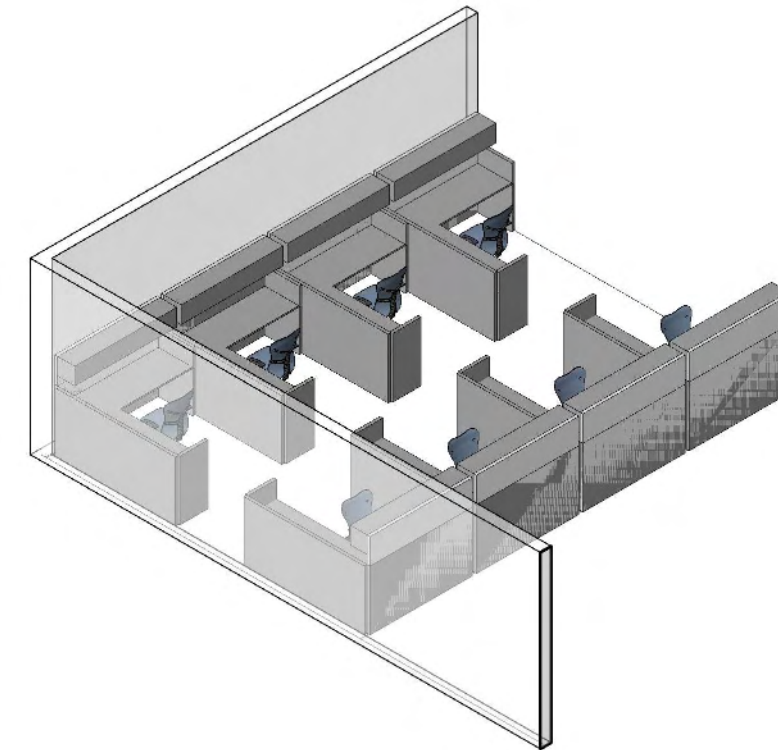
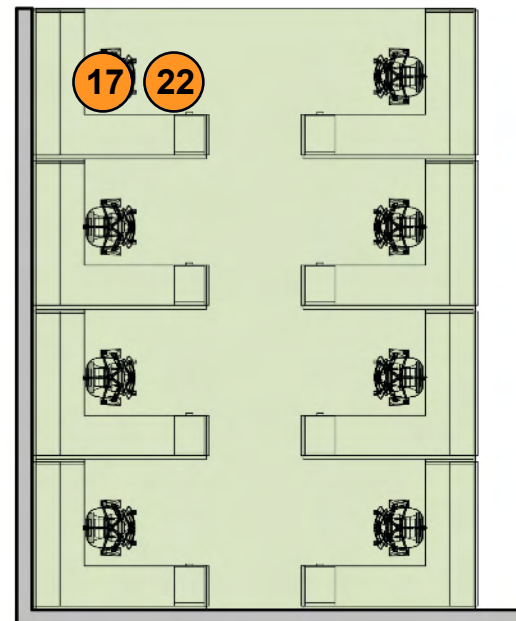
N/A

F = Supplied by Owner (not in project budget)

Computer & phone if required

# 05 SPACE DIAGRAMS

## 5.9. Graduate Research Assistant / Open Office



- |                       |  |                               |                                 |                             |
|-----------------------|--|-------------------------------|---------------------------------|-----------------------------|
| 1. Whiteboard         | 8. Mobile Teaching Lectern - Power   Data   AV | 15. Tablet Arm Chair - Mobile | 22. Office Desk / Workstation   | 29. Work Counter - Standing |
| 2. Tackboard          | 9. Training Table - Power   Data               | 16. Student Chair             | 23. File Cabinet                | 30. Base Cabinet            |
| 3. Projection Screen  | 10. Seminar Table                              | 17. Task Chair                | 24. Bookshelves                 | 31. Wall Cabinet            |
| 4. Digital Projector  | 11. Conference Table                           | 18. Guest Chair               | 25. Credenza                    | 32. Mail Boxes              |
| 5. Flat Panel Display | 12. Side Table                                 | 19. Conference Chair          | 26. Copy   Scanner Machine      | 33. Refrigerator            |
| 6. Moveable Partition | 13. Cafe Table                                 | 20. Stack Chair               | 27. 5-Shelf Wire Shelving Units | 34. Tall Storage Cabinet    |
| 7. Equipment Space    | 14. Lounge   Soft Seating                      | 21. Cafe Chair                | 28. Sink                        |                             |

## Graduate Research Assistant / Open Office Description

### SPACE REQUIRED

Name: Graduate Research Assistant Office

Occupancy: 1 Occupant

Net Square Footage: 60 SF

Unit Square Footage: N/A

### 2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

#### Relationships:

- a. Contiguous: *see concept floor plan*
- b. Adjacent: *see concept floor plan*
- c. Convenient: *see concept floor plan*

#### Services and Features:

- a. Atmospheric Criteria: Summer 75°F db / 50% RH  
 Winter 70°F db  
 People Outdoor Air Rate Rp = 5 CFM per person  
 Area Outdoor Air Rate Ra = 0.06 CFM per square foot  
 Pressurization: Neutral  
 No exhaust requirements
- b. Illumination: Maintained Average Illumination: 30-50 footcandles  
 Lighting Power Density: 1.0 watts per square foot max  
 Dimmed lighting control system with automatic shutoff
- c. Electrical: 120 V general receptacle outlets, minimum 10' O.C. wall  
 120 V quad receptacle outlet for desks
- d. Communications: Communication outlet for desk  
 Wireless Internet connectivity
- e. Plumbing: No plumbing requirements
- f. Music/Video: N/A

#### Finishes:

- a. Floor & Base: Carpet Tile with Rubber Base
- b. Walls: Painted Gypsum Board
- c. Ceiling: Acoustical Ceiling Tile or painted exposed structure
- d. Doors and Frames: N/A
- e. Windows: Aluminum framed glazed system for view into High Bay
- f. Window Treatments: Blinds or shades

### 3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

Dedicated or Shareable Office for Resident or Visiting Researcher . Can be in closed room or open to a larger Office Suite.

### 4. LIST OF FURNISHINGS AND EQUIPMENT

A = Built-in equipment to be furnished and installed by the General Contractor.

N/A

B = Specified and procured through Interior Designer (not furnished by GC)

Work stations with lockable storage, tack board

4 Desk Chairs

C = Specified and procured through A/V Consultant (not furnished by GC)

N/A

D = Specified and procured through I.T. Consultant (not by GC)

N/A

E = Supplied by Owner (in project budget)

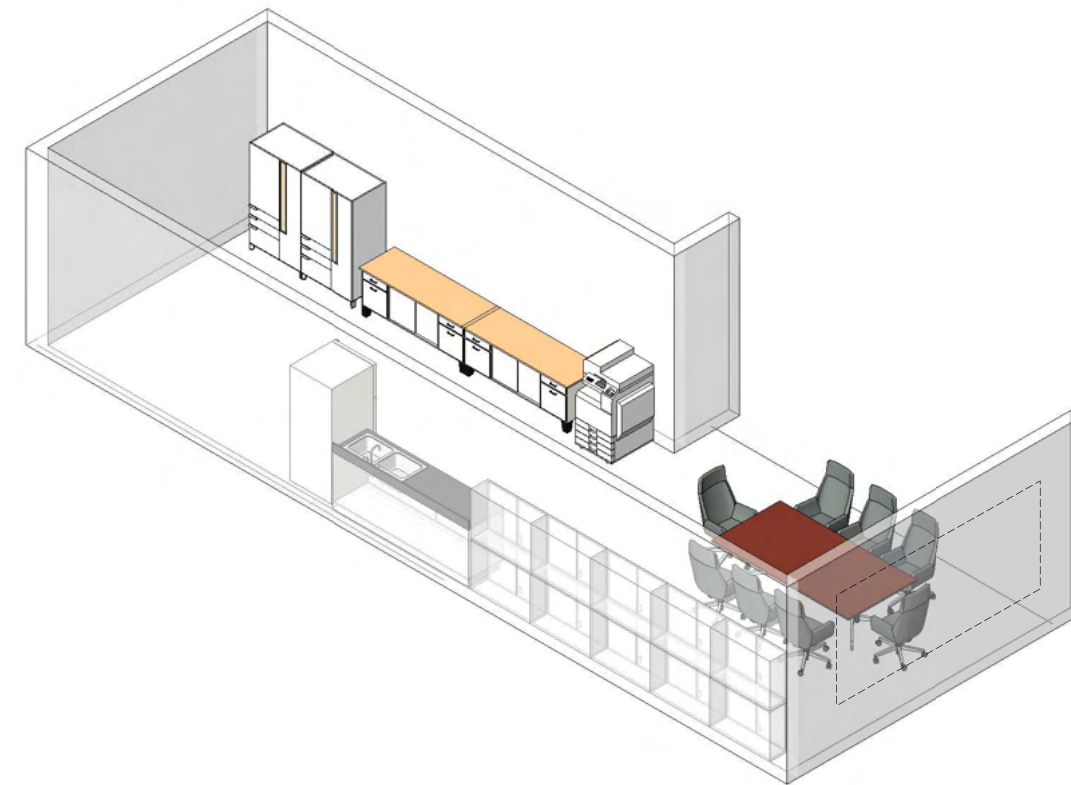
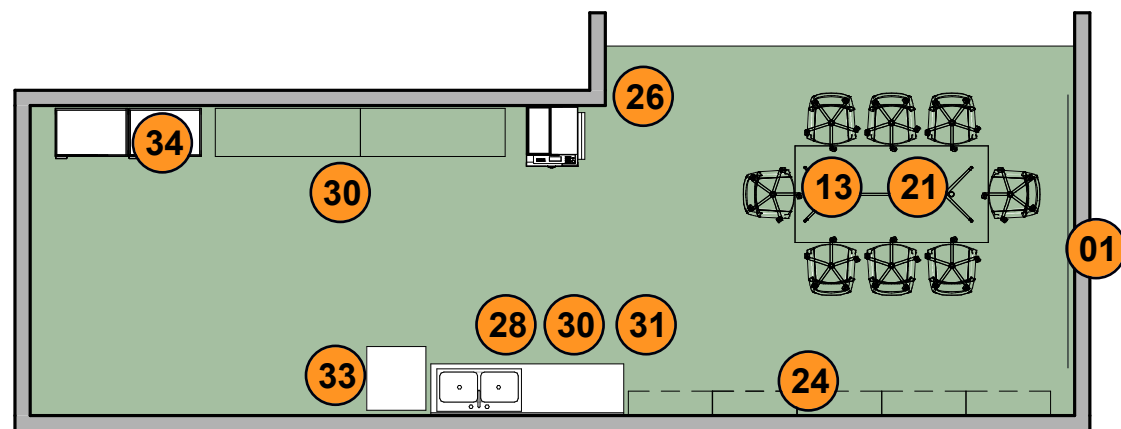
N/A

F = Supplied by Owner (not in project budget)

Computer & phone if required

# 05 SPACE DIAGRAMS

## 5.10. Break Room



- |                       |  |                               |                                 |                             |
|-----------------------|--|-------------------------------|---------------------------------|-----------------------------|
| 1. Whiteboard         | 8. Mobile Teaching Lectern - Power   Data   AV | 15. Tablet Arm Chair - Mobile | 22. Office Desk / Workstation   | 29. Work Counter - Standing |
| 2. Tackboard          | 9. Training Table - Power   Data               | 16. Student Chair             | 23. File Cabinet                | 30. Base Cabinet            |
| 3. Projection Screen  | 10. Seminar Table                              | 17. Task Chair                | 24. Bookshelves                 | 31. Wall Cabinet            |
| 4. Digital Projector  | 11. Conference Table                           | 18. Guest Chair               | 25. Credenza                    | 32. Mail Boxes              |
| 5. Flat Panel Display | 12. Side Table                                 | 19. Conference Chair          | 26. Copy   Scanner Machine      | 33. Refrigerator            |
| 6. Moveable Partition | 13. Cafe Table                                 | 20. Stack Chair               | 27. 5-Shelf Wire Shelving Units | 34. Tall Storage Cabinet    |
| 7. Equipment Space    | 14. Lounge   Soft Seating                      | 21. Cafe Chair                | 28. Sink                        |                             |

## Break Room Description

### SPACE REQUIRED

Name: Break Room

Occupancy: 8 Occupants

Net Square Footage: 500 SF

Unit Square Footage: N/A

### 2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

#### Relationships:

- a. Contiguous: *see concept floor plan*
- b. Adjacent: *see concept floor plan*
- c. Convenient: *see concept floor plan*

#### Services and Features:

- a. Atmospheric Criteria: Summer 75°F db / 50% RH  
 Winter 70°F db  
 People Outdoor Air Rate  $R_p = 5$  CFM per person  
 Area Outdoor Air Rate  $R_a = 0.06$  CFM per square foot  
 Pressurization: Neutral  
 No exhaust requirements
- b. Illumination: Maintained Average Illumination: 30-50 footcandles  
 Lighting Power Density: 1.0 watts per square foot max  
 Dimmed lighting control system with automatic shutoff
- c. Electrical: 120 V general receptacle outlets, minimum 10' O.C. wall
- d. Communications: Communication general outlets, minimum one location  
 Wireless Internet connectivity
- e. Plumbing: Break room sink & beverage machine
- f. Music/Video: N/A

#### Finishes:

- a. Floor & Base: Carpet Tile with Rubber Base
- b. Walls: Painted Gypsum Board
- c. Ceiling: Acoustical Ceiling Tile or painted exposed structure
- d. Doors and Frames: N/A
- e. Windows: Aluminum framed glazed system
- f. Window Treatments: Blinds or shades

### 3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

Informal gathering / break area for building occupants

### 4. LIST OF FURNISHINGS AND EQUIPMENT

A = Built-in equipment to be furnished and installed by the General Contractor.

1 Whiteboard (12'-0" W x 4'-0" H)

Wall cabinets, base cabinets, and countertop with 1 sink

B = Specified and procured through Interior Designer (not furnished by GC)

1 Break Room Style Table

8 Chairs

2 Tall Storage Cabinets

2 Shelving Units

C = Specified and procured through A/V Consultant (not furnished by GC)

N/A

D = Specified and procured through I.T. Consultant (not by GC)

N/A

E = Supplied by Owner (in project budget)

N/A

F = Supplied by Owner (not in project budget)

Refrigerator

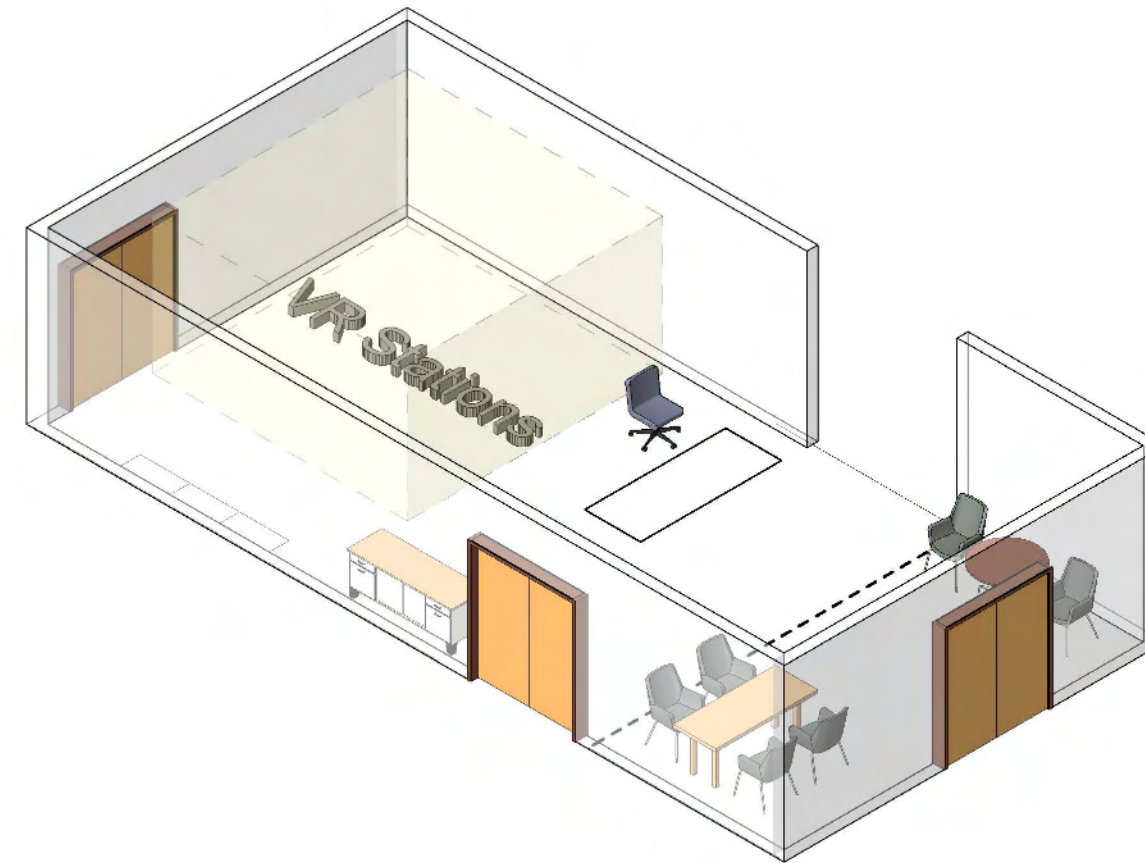
Beverage Machine(s)

Microwave Oven

Copier / Printer

# 05 SPACE DIAGRAMS

## 5.11. Lobby and Reception



- |                       |  |                               |                                 |                             |
|-----------------------|--|-------------------------------|---------------------------------|-----------------------------|
| 1. Whiteboard         | 8. Mobile Teaching Lectern - Power   Data   AV | 15. Tablet Arm Chair - Mobile | 22. Office Desk / Workstation   | 29. Work Counter - Standing |
| 2. Tackboard          | 9. Training Table - Power   Data               | 16. Student Chair             | 23. File Cabinet                | 30. Base Cabinet            |
| 3. Projection Screen  | 10. Seminar Table                              | 17. Task Chair                | 24. Bookshelves                 | 31. Wall Cabinet            |
| 4. Digital Projector  | 11. Conference Table                           | 18. Guest Chair               | 25. Credenza                    | 32. Mail Boxes              |
| 5. Flat Panel Display | 12. Side Table                                 | 19. Conference Chair          | 26. Copy   Scanner Machine      | 33. Refrigerator            |
| 6. Moveable Partition | 13. Cafe Table                                 | 20. Stack Chair               | 27. 5-Shelf Wire Shelving Units | 34. Tall Storage Cabinet    |
| 7. Equipment Space    | 14. Lounge   Soft Seating                      | 21. Cafe Chair                | 28. Sink                        |                             |
- F. Owner provided equipment not in project budget; see Section 3.3

## Lobby and Reception Description

SPACE REQUIRED

Name: Lobby & Reception

Occupancy: 1-10 Occupants

Net Square Footage: 900 SF

Unit Square Footage: N/A

### 2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

Relationships:

- a. Contiguous: *see concept floor plan*
- b. Adjacent: *see concept floor plan*
- c. Convenient: *see concept floor plan*

Services and Features:

- a. Atmospheric Criteria: Summer 75°F db / 50% RH  
 Winter 70°F db  
 People Outdoor Air Rate  $R_p = 5$  CFM per person  
 Area Outdoor Air Rate  $R_a = 0.06$  CFM per square foot  
 Pressurization: Neutral  
 No exhaust requirements
- b. Illumination: Maintained Average Illumination: 30-50 footcandles  
 Lighting Power Density: 1.0 watts per square foot max  
 Dimmed lighting control system with automatic shutoff
- c. Electrical: 120 V general receptacle outlets, minimum 10' O.C. wall
- d. Communications: Communication general outlets, minimum 10' O.C. walls  
 Wireless Internet connectivity
- e. Plumbing: N/A
- f. Music/Video: N/A

Finishes:

- a. Floor & Base: Porcelain Tile Flooring & Base, walk off mat

- b. Walls: Painted Gypsum Board with acoustical panels (approx. 25%)
- c. Ceiling: Acoustical Ceiling Tile, GWB Ceiling & painted exposed structure
- d. Doors and Frames: Glazed aluminum, glazed wood, or painted steel doors with lockable hardware and hollow metal frames
- e. Windows: Aluminum framed glazed system & doors at exit wall
- f. Window Treatments: Blinds or shades (automated)

### 3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

Main entry and waiting area for visitors; virtual reality demonstration area for visitors.

### 4. LIST OF FURNISHINGS AND EQUIPMENT

A = Built-in equipment to be furnished and installed by the General Contractor.

10 linear feet of wall cabinets, base cabinets, and countertop with 1 sink

B = Specified and procured through Interior Designer (not furnished by GC)

- Table
- Task Chairs
- Reception desk / workstation
- Lounge Chairs
- Side Table

C = Specified and procured through A/V Consultant (not furnished by GC)

N/A

D = Specified and procured through I.T. Consultant (not by GC)

N/A

E = Supplied by Owner (in project budget)

N/A

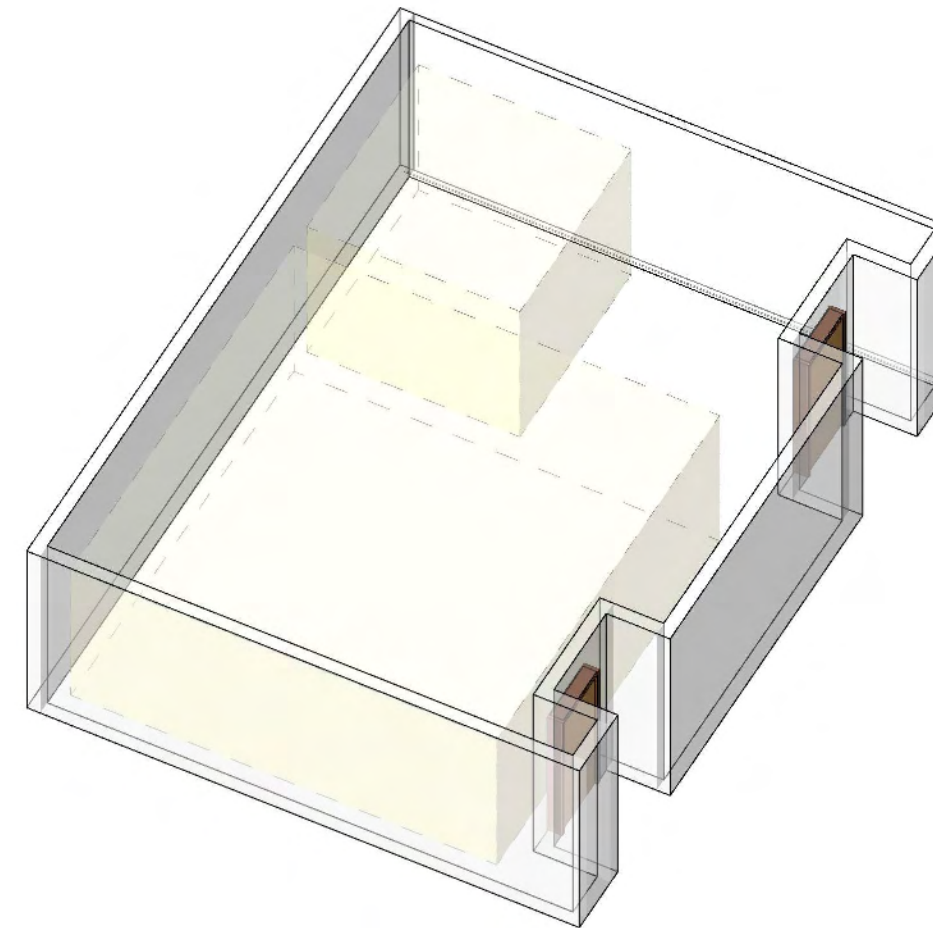
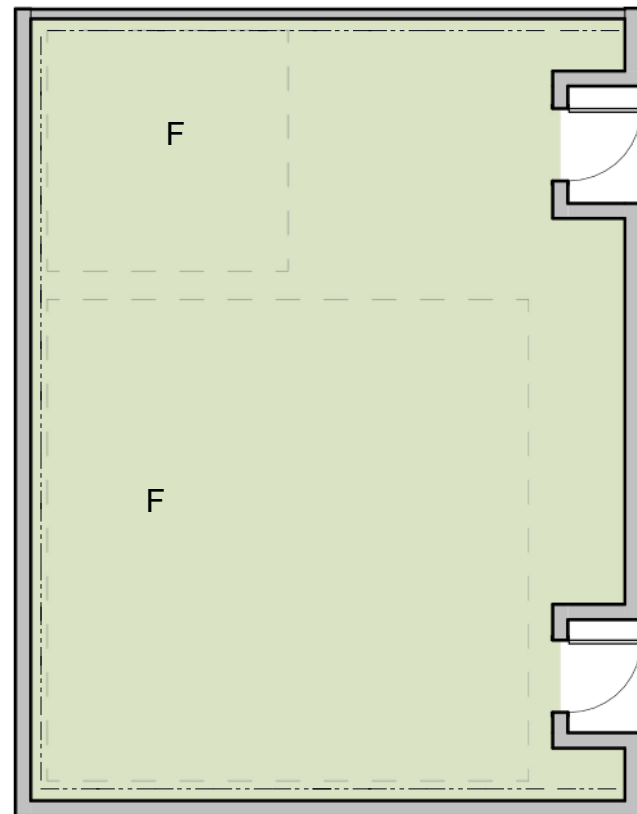
F = Supplied by Owner (not in project budget)

- VR Stations
- Branding / Graphics



# 05 SPACE DIAGRAMS

## 5.12. Modeling & Simulation Lab



1. Whiteboard
2. Tackboard
3. Projection Screen
4. Digital Projector
5. Flat Panel Display
6. Moveable Partition
7. Equipment Space

8. Mobile Teaching Lectern - Power | Data | AV
9. Training Table - Power | Data
10. Seminar Table
11. Conference Table
12. Side Table
13. Cafe Table
14. Lounge | Soft Seating

15. Tablet Arm Chair - Mobile
16. Student Chair
17. Task Chair
18. Guest Chair
19. Conference Chair
20. Stack Chair
21. Cafe Chair

22. Office Desk / Workstation
23. File Cabinet
24. Bookshelves
25. Credenza
26. Copy | Scanner Machine
27. 5-Shelf Wire Shelving Units
28. Sink

29. Work Counter - Standing
30. Base Cabinet
31. Wall Cabinet
32. Mail Boxes
33. Refrigerator
34. Tall Storage Cabinet

F. Owner provided equipment not in project budget; see Section 3.3

## Modeling & Simulation Lab Description

### SPACE REQUIRED

Name: Modeling & Simulation Lab Description

Occupancy: 2-6 Occupants

Net Square Footage: 770 SF

Unit Square Footage: N/A

### 2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

#### Relationships:

- a. Contiguous: *see concept floor plan*
- b. Adjacent: *see concept floor plan*
- c. Convenient: *see concept floor plan*

#### Services and Features:

- a. Atmospheric Criteria: Summer 75°F db / 50% RH  
 Winter 70°F db  
 People Outdoor Air Rate  $R_p = 10$  CFM per person  
 Area Outdoor Air Rate  $R_a = 0.12$  CFM per square foot  
 Pressurization: Neutral  
 No exhaust requirements
- b. Illumination: Maintained Average Illumination: 30-50 footcandles  
 Lighting Power Density: 1.0 watts per square foot max  
 Dimmed lighting control system with automatic shutoff
- c. Electrical: 120 V general receptacle outlets, minimum 4' O.C. (In surface mounted raceway)
- d. Communications:  
 Communication wall outlets, 4' O.C. (In surface mounted raceway)  
 Wireless Internet connectivity
- e. Plumbing: N/A
- f. Music/Video: N/A

#### Finishes:

- a. Floor & Base: Polished concrete or carpet tile with rubber base
- b. Walls: Painted Gypsum Board with acoustical panels (approx. 25%)
- c. Ceiling: Acoustical Ceiling Tile throughout or with portions of exposed structure
- d. Doors and Frames: Wood or Painted Steel Doors with glazing & lockable hardware and hollow metal frames
- e. Windows: N/A
- f. Window Treatments: N/A

### 3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

A flexible space for 3d digital modeling & simulation

### 4. LIST OF FURNISHINGS AND EQUIPMENT

A = Built-in equipment to be furnished and installed by the General Contractor.

N/A

B = Specified and procured through Interior Designer (not furnished by GC)

N/A

C = Specified and procured through A/V Consultant (not furnished by GC)

N/A

D = Specified and procured through I.T. Consultant (not by GC)

N/A

E = Supplied by Owner (in project budget)

N/A

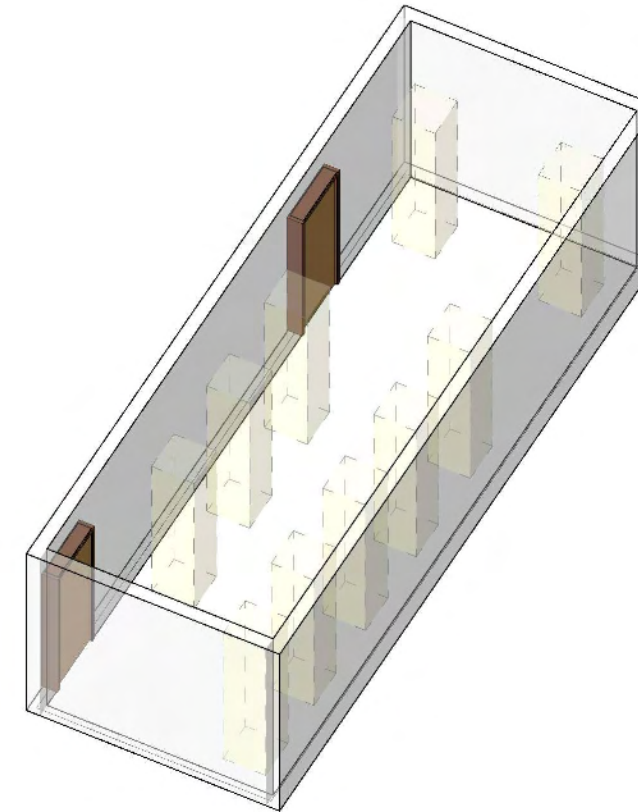
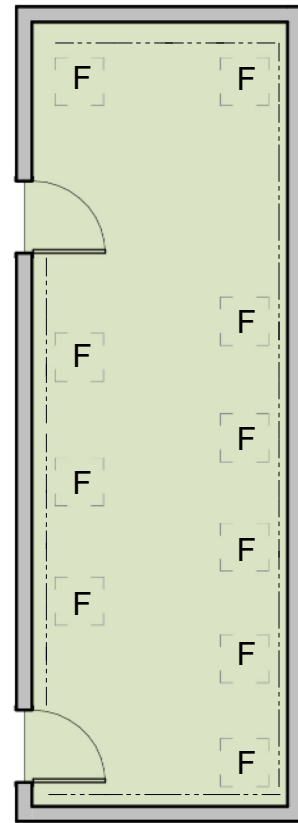
F = Supplied by Owner (not in project budget)

Digital modeling and simulation equipment & workstations

UPS system if required

# 05 SPACE DIAGRAMS

## 5.13. 3D Printers



1. Whiteboard
2. Tackboard
3. Projection Screen
4. Digital Projector
5. Flat Panel Display
6. Moveable Partition
7. Equipment Space

8. Mobile Teaching Lectern - Power | Data | AV
9. Training Table - Power | Data
10. Seminar Table
11. Conference Table
12. Side Table
13. Cafe Table
14. Lounge | Soft Seating

15. Tablet Arm Chair - Mobile
16. Student Chair
17. Task Chair
18. Guest Chair
19. Conference Chair
20. Stack Chair
21. Cafe Chair

22. Office Desk / Workstation
23. File Cabinet
24. Bookshelves
25. Credenza
26. Copy | Scanner Machine
27. 5-Shelf Wire Shelving Units
28. Sink

29. Work Counter - Standing
30. Base Cabinet
31. Wall Cabinet
32. Mail Boxes
33. Refrigerator
34. Tall Storage Cabinet

F. Owner provided equipment not in project budget; see Section 3.3

### 3D Printers Description

SPACE REQUIRED

Name: 3D Printing Room

Occupancy: 2-4 Occupants

Net Square Footage: 350 SF

Unit Square Footage: N/A

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

Relationships:

- a. Contiguous: *see concept floor plan*
- b. Adjacent: *see concept floor plan*
- c. Convenient: *see concept floor plan*

Services and Features:

- a. Atmospheric Criteria: Summer 75°F db / 50% RH  
 Winter 70°F db  
 People Outdoor Air Rate Rp = 10 CFM per person  
 Area Outdoor Air Rate Ra = 0.12 CFM per square foot  
 Pressurization: Neutral  
 Exhaust for printers
- b. Illumination: Maintained Average Illumination: 30-50 footcandles  
 Lighting Power Density: 1.0 watts per square foot max  
 Dimmed lighting control system with automatic shutoff
- c. Electrical: 120 V general receptacle outlets, minimum 2' O.C. (In surface mounted raceway)  
 Outlets as required for equipment (confirm if emergency power is required)
- d. Communications:  
 Communication wall outlets, 2' O.C. (In surface mounted raceway)  
 Wireless Internet connectivity
- e. Plumbing: N/A

f. Music/Video: N/A

Finishes:

- a. Floor & Base: Polished concrete or carpet tile with rubber base
- b. Walls: Painted Gypsum Board
- c. Ceiling: Acoustical Ceiling Tile throughout or with portions of exposed structure
- d. Doors and Frames: Wood or Painted Steel Doors with glazing & lockable hardware and hollow metal frames  
 Minimum 36"
- e. Windows: Aluminum framed glazed system for exterior windows
- f. Window Treatments: Blinds or shades

#### 3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

A flexible space for 3D printing

#### 4. LIST OF FURNISHINGS AND EQUIPMENT

A = Built-in equipment to be furnished and installed by the General Contractor.

N/A

B = Specified and procured through Interior Designer (not furnished by GC)

N/A

C = Specified and procured through A/V Consultant (not furnished by GC)

N/A

D = Specified and procured through I.T. Consultant (not by GC)

N/A

E = Supplied by Owner (in project budget)

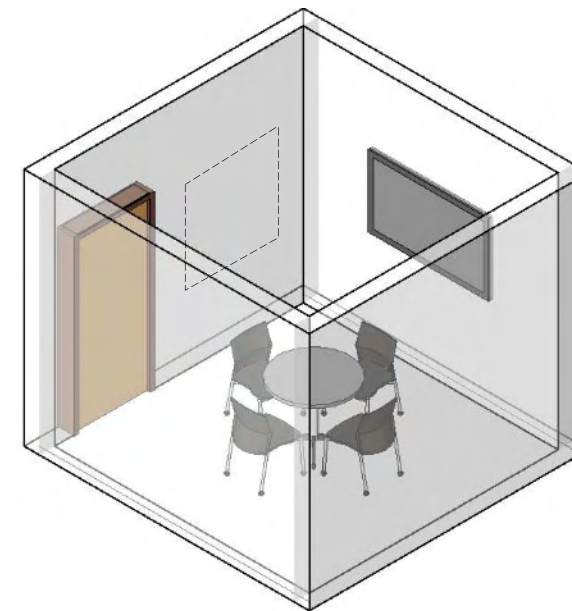
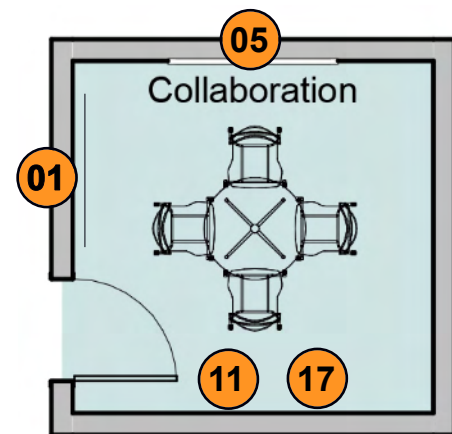
N/A

F = Supplied by Owner (not in project budget)

Digital printing equipment & workstations  
 UPS system if required

# 05 SPACE DIAGRAMS

## 5.14. Hoteling / Collaboration



1. Whiteboard
2. Tackboard
3. Projection Screen
4. Digital Projector
5. Flat Panel Display
6. Moveable Partition
7. Equipment Space

8. Mobile Teaching Lectern - Power | Data | AV
9. Training Table - Power | Data
10. Seminar Table
11. Conference Table
12. Side Table
13. Cafe Table
14. Lounge | Soft Seating

15. Tablet Arm Chair - Mobile
16. Student Chair
17. Task Chair
18. Guest Chair
19. Conference Chair
20. Stack Chair
21. Cafe Chair

22. Office Desk / Workstation
23. File Cabinet
24. Bookshelves
25. Credenza
26. Copy | Scanner Machine
27. 5-Shelf Wire Shelving Units
28. Sink

29. Work Counter - Standing
30. Base Cabinet
31. Wall Cabinet
32. Mail Boxes
33. Refrigerator
34. Tall Storage Cabinet

F. Owner provided equipment not in project budget; see Section 3.3

## Hoteling / Collaboration Description

### SPACE REQUIRED

Name: Hoteling

Occupancy: 6-8 Occupants

Net Square Footage: 120 SF

Unit Square Footage: N/A

### 2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

#### Relationships:

- a. Contiguous: *see concept floor plan*
- b. Adjacent: *see concept floor plan*
- c. Convenient: *see concept floor plan*

#### Services and Features:

- a. Atmospheric Criteria: Summer 75°F db / 50% RH  
 Winter 70°F db  
 People Outdoor Air Rate  $R_p = 5$  CFM per person  
 Area Outdoor Air Rate  $R_a = 0.06$  CFM per square foot  
 Pressurization: Neutral  
 No exhaust requirements
- b. Illumination: Maintained Average Illumination: 30-50 footcandles  
 Lighting Power Density: 1.0 watts per square foot max  
 Dimmed lighting control system with automatic shutoff
- c. Electrical: 120 V receptacle outlets  
 120 V general receptacle outlets, minimum 10' O.C. wall
- d. Communications: Communication floor outlets, minimum one location  
 For table  
 Communication wall mount outlet for flat screen display  
 Wireless Internet connectivity
- e. Plumbing: No plumbing requirements

f. Music/Video: N/A

#### Finishes:

- a. Floor & Base: Carpet Tile with Rubber Base
- b. Walls: Painted Gypsum Board
- c. Ceiling: Acoustical Ceiling Tile or painted exposed structure
- d. Doors and Frames: Painted Steel Doors with Lockable Hardware and Hollow Metal Frames
- e. Windows: Aluminum framed glazed system
- f. Window Treatments: Blinds or shades

### 3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

Quiet room to serve 6-8 person meetings.

### 4. LIST OF FURNISHINGS AND EQUIPMENT

A = Built-in equipment to be furnished and installed by the General Contractor.

Whiteboard

B = Specified and procured through Interior Designer (not furnished by GC)

Conference Table

Task chairs

C = Specified and procured through A/V Consultant (not furnished by GC)

Large screen display

D = Specified and procured through I.T. Consultant (not by GC)

N/A

E = Supplied by Owner (in project budget)

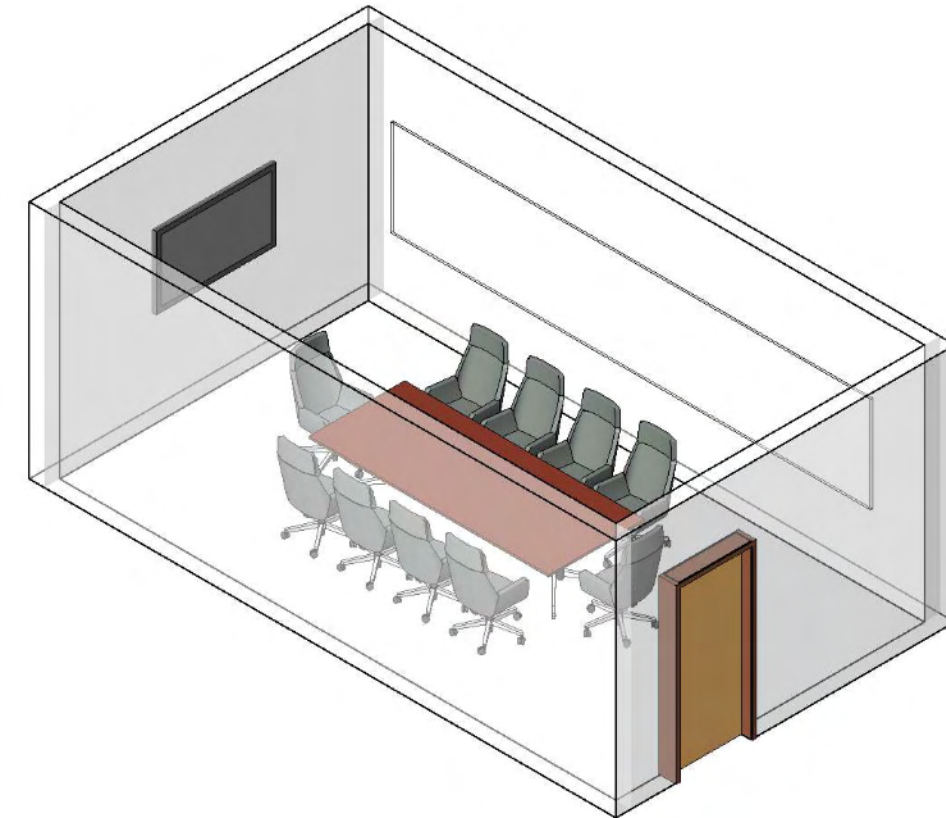
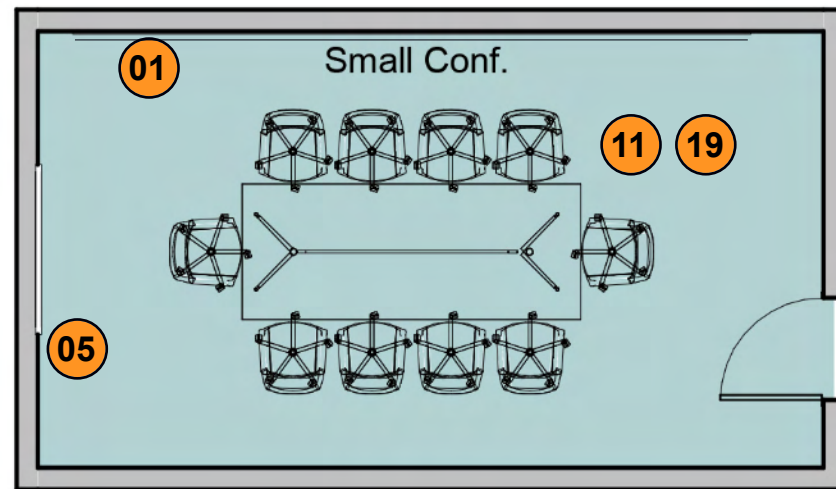
N/A

F = Supplied by Owner (not in project budget)

Computer & phone if required

# 05 SPACE DIAGRAMS

## 5.15. Small Conference



- 1. Whiteboard
- 2. Tackboard
- 3. Projection Screen
- 4. Digital Projector
- 5. Flat Panel Display
- 6. Moveable Partition
- 7. Equipment Space

- 8. Mobile Teaching Lectern - Power | Data | AV
- 9. Training Table - Power | Data
- 10. Seminar Table
- 11. Conference Table
- 12. Side Table
- 13. Cafe Table
- 14. Lounge | Soft Seating

- 15. Tablet Arm Chair - Mobile
- 16. Student Chair
- 17. Task Chair
- 18. Guest Chair
- 19. Conference Chair
- 20. Stack Chair
- 21. Cafe Chair

- 22. Office Desk / Workstation
- 23. File Cabinet
- 24. Bookshelves
- 25. Credenza
- 26. Copy | Scanner Machine
- 27. 5-Shelf Wire Shelving Units
- 28. Sink

- 29. Work Counter - Standing
- 30. Base Cabinet
- 31. Wall Cabinet
- 32. Mail Boxes
- 33. Refrigerator
- 34. Tall Storage Cabinet

F. Owner provided equipment not in project budget; see Section 3.3

## Small Conference Description

### SPACE REQUIRED

Name: Small Conference

Occupancy: 10 Occupants

Net Square Footage: 300 SF

Unit Square Footage: N/A

### 2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

#### Relationships:

- a. Contiguous: *see concept floor plan*
- b. Adjacent: *see concept floor plan*
- c. Convenient: *see concept floor plan*

#### Services and Features:

- a. Atmospheric Criteria: Summer 75°F db / 50% RH

Winter 70°F db

People Outdoor Air Rate  $R_p = 5$  CFM per person

Area Outdoor Air Rate  $R_a = 0.06$  CFM per square foot

Pressurization: Neutral

No exhaust requirements

- b. Illumination: Maintained Average Illumination: 30-50 footcandles

Lighting Power Density: 1.0 watts per square foot max

Dimmed lighting control system with automatic shutoff

- c. Electrical:

120 V floor receptacle outlet

120 V general receptacle outlets

120 V ceiling mount for projector

Projector screen

120 V receptacle for A/V credenza

- d. Communications: Communication floor outlets, minimum one location

For table

Communication wall mount outlet for flat screen display

Wireless Internet connectivity

- e. Plumbing: No plumbing requirements

- f. Music/Video: N/A

#### Finishes:

- a. Floor & Base: Carpet Tile with Rubber Base

- b. Walls: Painted Gypsum Board

- c. Ceiling: Acoustical Ceiling Tile or painted exposed structure

- d. Doors and Frames: Painted Steel Doors with Lockable Hardware and Hollow Metal Frames

- e. Windows: Aluminum framed glazed system

- f. Window Treatments: Blinds or shades

### 3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

Quiet room to serve 10 person meetings.

### 4. LIST OF FURNISHINGS AND EQUIPMENT

A = Built-in equipment to be furnished and installed by the General Contractor.

Whiteboard

B = Specified and procured through Interior Designer (not furnished by GC)

Conference table

Conference/task chairs

C = Specified and procured through A/V Consultant (not furnished by GC)

Large screen display & control system

D = Specified and procured through I.T. Consultant (not by GC)

N/A

E = Supplied by Owner (in project budget)

N/A

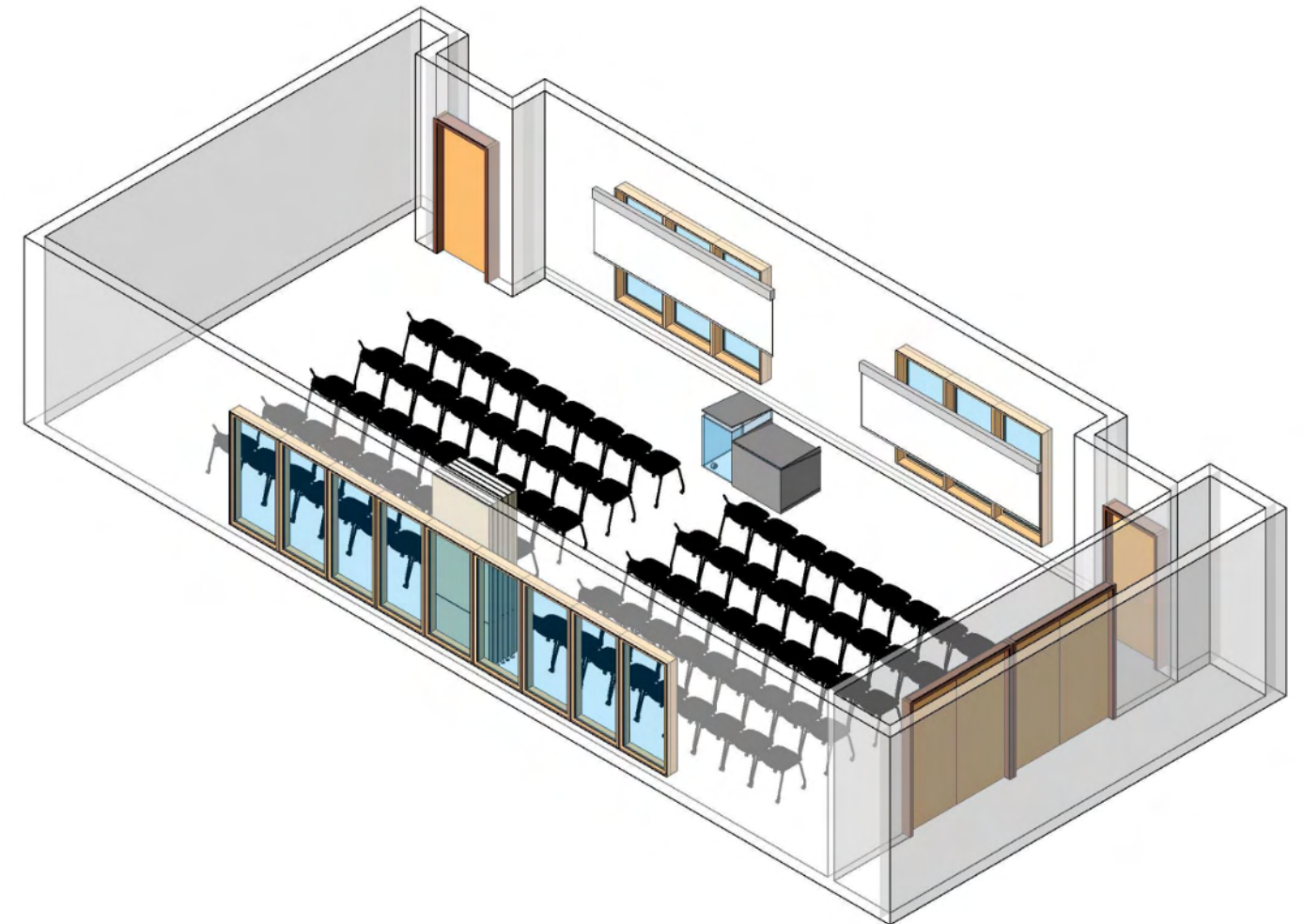
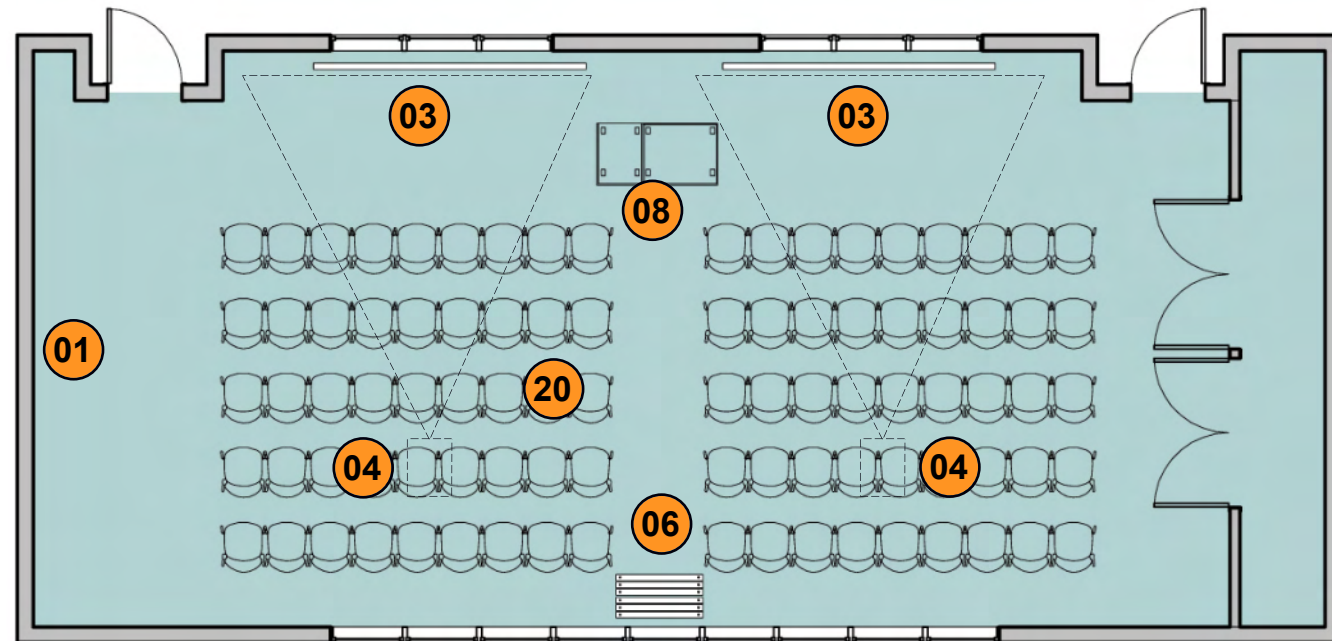
F = Supplied by Owner (not in project budget)

Computer & phone if required



# 05 SPACE DIAGRAMS

## 5.16. Large Conference



- |                       |  |                               |                                 |                             |
|-----------------------|--|-------------------------------|---------------------------------|-----------------------------|
| 1. Whiteboard         | 8. Mobile Teaching Lectern - Power   Data   AV | 15. Tablet Arm Chair - Mobile | 22. Office Desk / Workstation   | 29. Work Counter - Standing |
| 2. Tackboard          | 9. Training Table - Power   Data               | 16. Student Chair             | 23. File Cabinet                | 30. Base Cabinet            |
| 3. Projection Screen  | 10. Seminar Table                              | 17. Task Chair                | 24. Bookshelves                 | 31. Wall Cabinet            |
| 4. Digital Projector  | 11. Conference Table                           | 18. Guest Chair               | 25. Credenza                    | 32. Mail Boxes              |
| 5. Flat Panel Display | 12. Side Table                                 | 19. Conference Chair          | 26. Copy   Scanner Machine      | 33. Refrigerator            |
| 6. Moveable Partition | 13. Cafe Table                                 | 20. Stack Chair               | 27. 5-Shelf Wire Shelving Units | 34. Tall Storage Cabinet    |
| 7. Equipment Space    | 14. Lounge   Soft Seating                      | 21. Cafe Chair                | 28. Sink                        |                             |
- F. Owner provided equipment not in project budget; see Section 3.3

## Large Conference Description

### SPACE REQUIRED

Name: 80 Seat Conference

Occupancy: 80 Occupants

Net Square Footage: 1,200 SF

Unit Square Footage: N/A

### 2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

#### Relationships:

- a. Contiguous: *see concept floor plan*
- b. Adjacent: *see concept floor plan*
- c. Convenient: *see concept floor plan*

#### Services and Features:

- a. Atmospheric Criteria: Summer 75°F db / 50% RH  
 Winter 70°F db  
 People Outdoor Air Rate  $R_p = 7.5$  CFM per person  
 Area Outdoor Air Rate  $R_a = 0.06$  CFM per square foot  
 Pressurization: Neutral  
 No exhaust requirements
- b. Illumination: Maintained Average Illumination: 30-50 footcandles  
 Lighting Power Density: 1.0 watts per square foot max  
 Dimmed preset lighting control system with A/V interface
- c. Electrical: 120 V floor receptacle outlets, minimum nine locations  
 120 V general receptacle outlets, minimum 10' O.C. wall  
 120 V ceiling mount for projector, two locations  
 120 V ceiling mount for projector screen, two locations  
 120 V receptacle for Teaching Lectern (with A/V rack)
- d. Communications: Communication floor outlets, minimum nine locations  
 Communication ceiling mount outlet for projector, two locations

Communication outlet for Teaching Lectern (with A/V rack)

Wireless Internet connectivity

- e. Plumbing: No plumbing requirements
- f. Music/Video: Ceiling mounted Digital Projectors  
 Ceiling recessed, motorized Projection Screens

#### Finishes:

This section is to record specific requirements for all surface areas.

- a. Floor & Base: Carpet Tile with Rubber Base
- b. Walls: Painted Gypsum Board
- c. Ceiling: Acoustical Ceiling Tile throughout with Gypsum Board Soft at Teaching Wall
- d. Doors and Frames: Wood Doors with Lockable Hardware and Hollow Metal Frames
- e. Windows: Aluminum framed glazed system into high bay
- f. Window Treatments: Blinds or shades

### 3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

A flexible meeting space that will accommodate multiple meeting styles (lecture style, small group, and large group, etc.) through furniture layout options. Recessed floor boxes will provide power and data to the interior of the space while writable surfaces and large screen displays will line the perimeter walls. Closet at plan right is storage space for chairs and tables.

### 4. LIST OF FURNISHINGS AND EQUIPMENT

A = Built-in equipment to be furnished and installed by the General Contractor.

- Whiteboard
- 2 Projection Screens (10.7' W x 6' H)
- 2 Projector Mounts

Stack-able Room Partition (>50 STC)

B = Specified and procured through Interior Designer (not furnished by GC)

10 Training Tables (60" W x 21" D)

90 Stack Chairs

C = Specified and procured through A/V Consultant (not furnished by GC)

2 Digital Projectors

1 Teaching Lectern with A/V Rack inside

Video Conference Systems - for all room arrangements; audience & speaker microphones; speakers, video cameras

AV Equipment Items (to be determined by the University)

D = Specified and procured through I.T. Consultant (not by GC)

N/A

E = Supplied by Owner (in project budget)

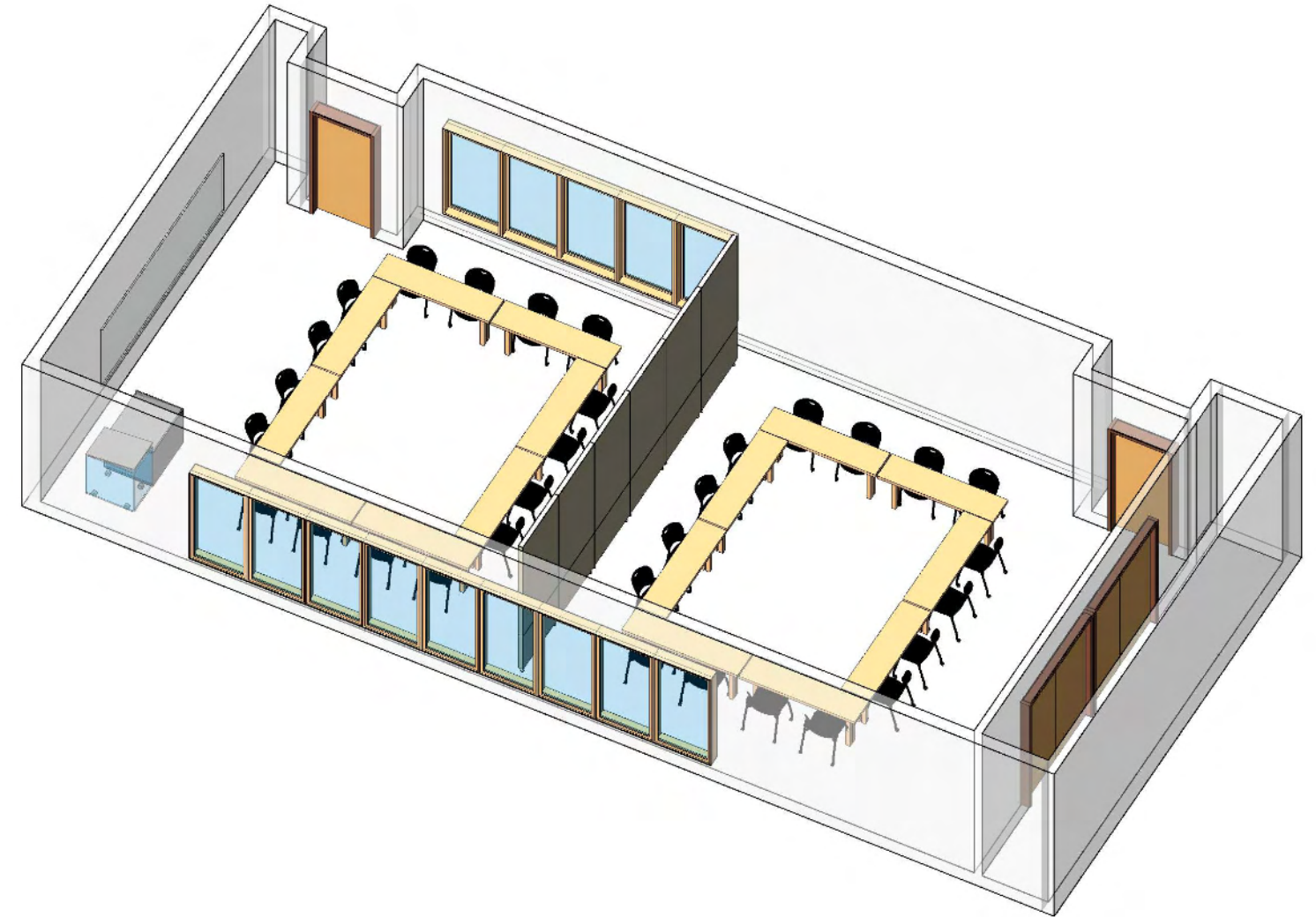
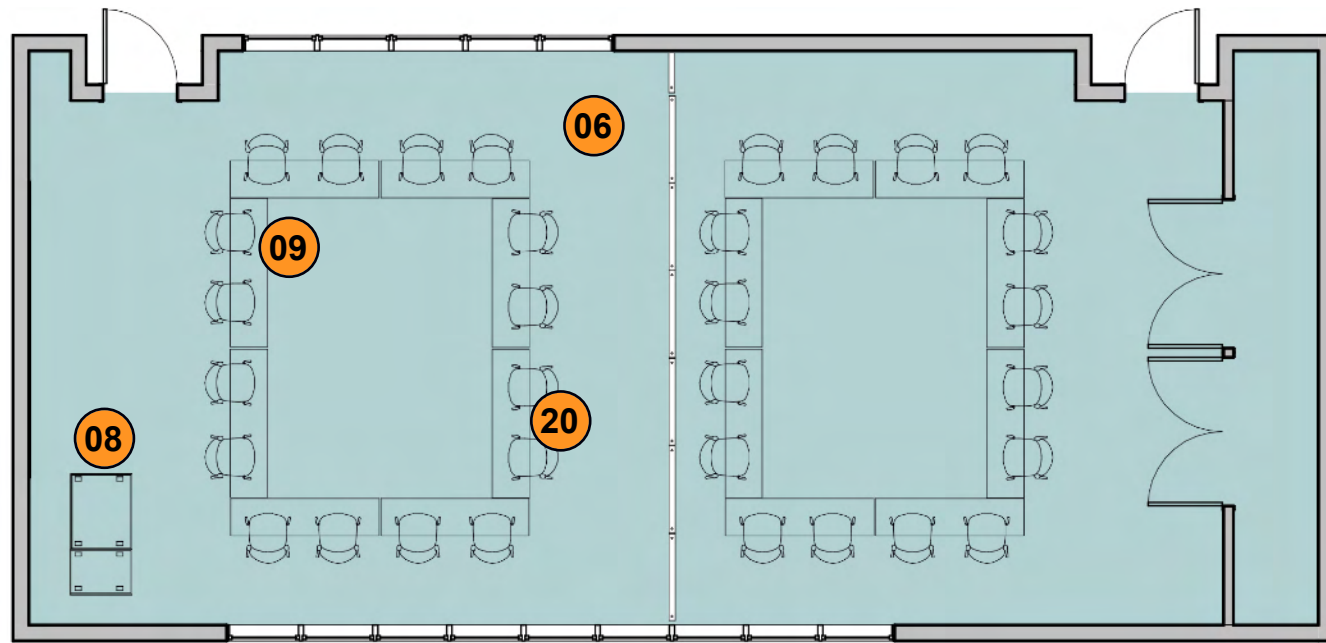
N/A

F = Supplied by Owner (not in project budget)

N/A

# 05 SPACE DIAGRAMS

## 5.16. Large Conference Description



- |                       |  |                               |                                 |  |
|-----------------------|--|-------------------------------|---------------------------------|--|
| 1. Whiteboard         | 8. Mobile Teaching Lectern - Power   Data   AV | 15. Tablet Arm Chair - Mobile | 22. Office Desk / Workstation   | 29. Work Counter - Standing  |
| 2. Tackboard          | 9. Training Table - Power   Data               | 16. Student Chair             | 23. File Cabinet                | 30. Base Cabinet   |
| 3. Projection Screen  | 10. Seminar Table                              | 17. Task Chair                | 24. Bookshelves                 | 31. Wall Cabinet   |
| 4. Digital Projector  | 11. Conference Table                           | 18. Guest Chair               | 25. Credenza                    | 32. Mail Boxes   |
| 5. Flat Panel Display | 12. Side Table                                 | 19. Conference Chair          | 26. Copy   Scanner Machine      | 33. Refrigerator   |
| 6. Moveable Partition | 13. Cafe Table                                 | 20. Stack Chair               | 27. 5-Shelf Wire Shelving Units | 34. Tall Storage Cabinet   |
| 7. Equipment Space    | 14. Lounge   Soft Seating                      | 21. Cafe Chair                | 28. Sink                        | F. Owner provided equipment not in project budget; see Section 3.3 |

## High Bay Research

SPACE REQUIRED

Name: High Bay Research

Occupancy: 50-100 Occupants

Net Square Footage: 14,500 SF

Unit Square Footage: N/A

### 2. DESCRIPTION OF ARCHITECTURAL FEATURES AND SERVICES

Relationships:

- a. Contiguous: *see concept floor plan*
- b. Adjacent: *see concept floor plan*
- c. Convenient: *see concept floor plan*

Services and Features:

- a. Atmospheric Criteria: Summer 75°F db / 50% RH

Winter 72°F db; maintain temperature at +/- 2 deg

People Outdoor Air Rate Rp = 10 CFM per person

Area Outdoor Air Rate Ra = 0.18 CFM per square foot

Pressurization: Negative

100% exhausted

Particulate and fume exhaust as required for specific equipment

- b. Illumination: Maintained Average Illumination: 50-75 footcandles

Lighting Power Density: 1.2 watts per square foot max

Dimmed lighting control system with automatic shutoff

- c. Electrical: Outlets as required for equipment (confirm if emergency power is required)

Refer to MEP narrative for additional requirements

- d. Communications: Communication outlets, as required for equipment; refer to MEP narrative for additional requirements

Wireless Internet connectivity

- e. Plumbing: Safety shower

Eyewash stations

Drinking fountains

- f. Music/Video: N/A

Finishes:

This section is to record specific requirements for all surface areas.

- a. Floor & Base: Sealed Concrete Flooring with Rubber Base
- b. Walls: Painted Gypsum Board or CMU
- c. Ceiling: Exposed structure
- d. Doors and Frames: Painted Steel Doors with Lockable Hardware and Hollow Metal Frames,  
Minimum 68" clear entry  
10' wide roll-up doors at loading dock and other exterior access
- e. Windows: N/A
- f. Window Treatments: N/A

### 3. DESCRIPTION OF FUNCTIONAL REQUIREMENTS

A flexible lab for initial use with equipment & processes shown

### 4. LIST OF FURNISHINGS AND EQUIPMENT

A = Built-in equipment to be furnished and installed by the General Contractor.

Safety showers & eyewash

Fire Extinguishers and Cabinets

10 ton capacity bridge crane

B = Specified and procured through Interior Designer (not furnished by GC)

N/A

C = Specified and procured through A/V Consultant (not furnished by GC)

N/A

D = Specified and procured through I.T. Consultant (not by GC)

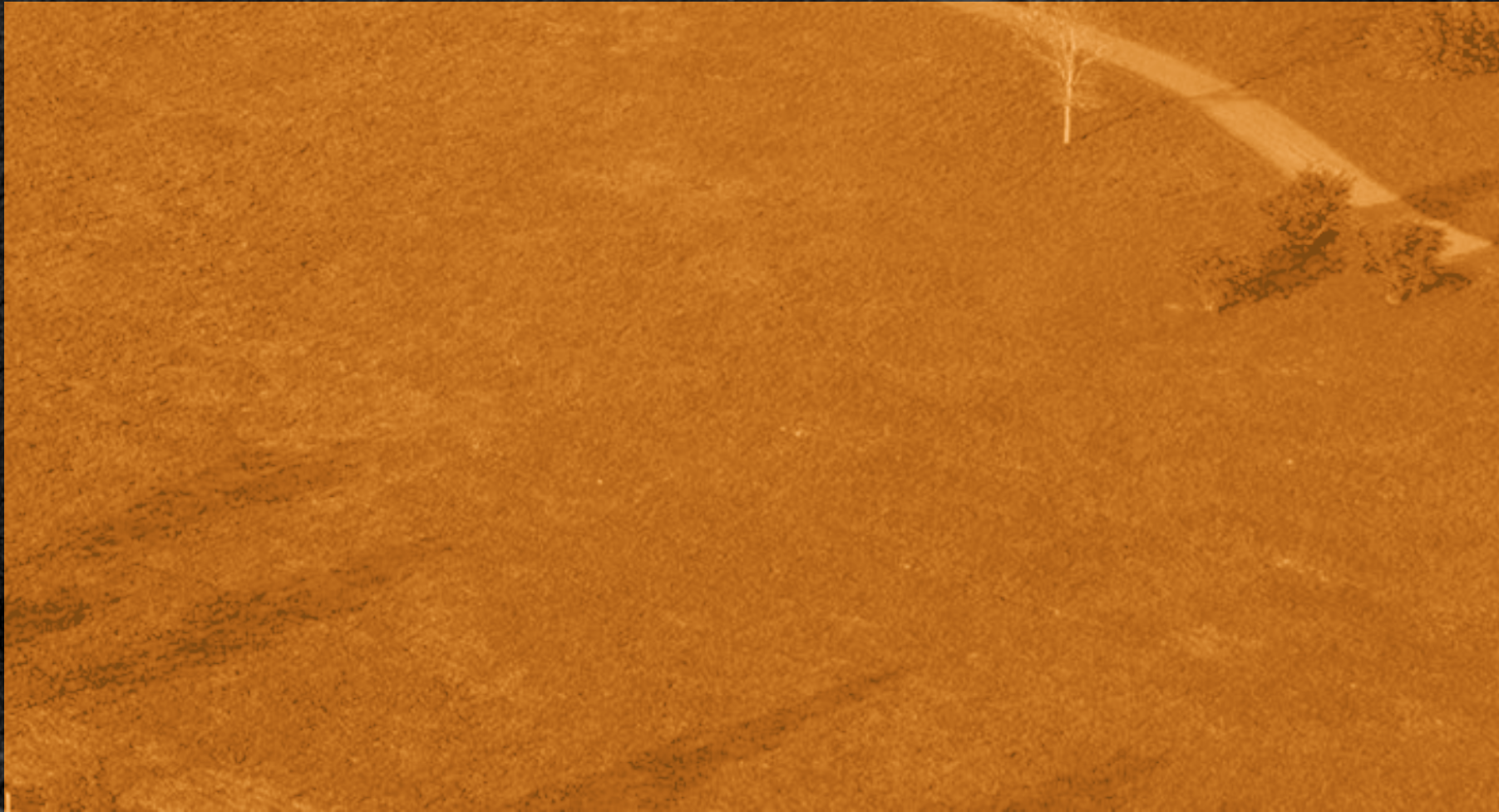
N/A

E = Supplied by Owner (in project budget)

N/A

F = Supplied by Owner (not in project budget)

See room diagram and Owner Supplied Equipment List in Section 3.0



6.0

**COST ESTIMATE &  
SCHEDULE**

# 06 Cost Estimate & Schedule

## Conceptual Project Budget

The following budget is based on Lord Aeck Sargent's experience with the cost of high bay research labs and the cost of the recent 20,000 gsf Surge Lab at UTIA. The building construction unit cost of \$327/gsf is based on a composite of costs for the three primary uses of the building: ~3,800 sf of wet lab (Spark Labs) at \$457/gsf, ~20,500 sf of high bay lab and high bay lab support at \$341/gsf, and ~11,400 sf of non-lab space at \$259/gsf.

Site work costs were recommended by civil engineering consultant CEC as a range of line item costs with a total from approximately \$1.4m to \$2.4m. The budget includes the average of the recommended sitework costs totaling approximately \$1.9m.

The FF&E budget is based on the list of furniture below with a contingency.

### UTK Innovation South High Bay Research Center CONCEPTUAL PROJECT BUDGET 4/14/2021 DRAFT

	quantity	unit cost	Cost
New Construction GSF	35,700	\$ 327.00	11,673,900
<b>BUILDING BID TARGET</b>	<b>\$327 /gsf</b>		<b>\$11,673,900</b>
<b>Bid Target Items</b>			
Hazardous Materials Abatement Allowance (not anticipated)			\$0
Distributed Antenna System (Public Safety Only; allowance)			\$50,000
Stormwater (parking)			\$87,500
Parking (paving, 45 spaces)	45	\$ 3,667	\$165,000
Earthwork (parking)	45	\$ 1,000	\$45,000
Stormwater (building)			\$137,500
Earthwork (building)			\$455,000
Planting (parking & building)			\$222,500
Hardscape (parking & building)			\$275,000
Retaining wall (building)			\$410,000
Utility relocation allowance			\$120,000
High Performance Building Requirements (add 3% if considered a state project)			\$0
<b>Sub-Total:</b>			<b>\$13,641,400</b>
Deep Foundations (not anticipated)			\$0
Demolition Allowance (not required)			\$0
Knoxville Market Contingency		8%	\$1,091,312
<b>BID TARGET INCLUDING SITE/INFRASTRUCTURE</b>	<b>\$413 /gsf</b>		<b>\$14,732,712</b>
Escalation through estimated Bid Date 3/31/2022 at 4.5% per year	4.5%		\$663,000
<b>TOTAL BID TARGET</b>	<b>\$431 /gsf</b>		<b>\$15,395,712</b>
Owner's Construction Contingency	5.00%		\$770,000
<b>MACC</b>	<b>\$453 /gsf</b>		<b>\$16,170,000</b>
<b>Below-the-Line Items</b>			
A/E Basic Services Fee: without renovation 1.25 multiple	5.777%		\$934,000
FF&E (\$/gsf)	\$ 8.00		\$285,600
OIT, AV, Security Equipment (2% of MACC, per Student Union)	2.000%		\$323,400
Admin and Miscellaneous (3% of MACC)	3.000%		\$485,100
<b>Total B: Below-the-Line Items</b>			<b>\$2,028,000</b>
<b>Project Subtotal</b>			<b>\$18,198,000</b>
Project Financing (not required)	0.000%		\$0
<b>TOTAL PROJECT COSTS</b>			<b>\$18,200,000</b>
<b>Total Project Cost/GSF</b>			<b>\$510</b>

**Conceptual Project Schedule**

The anticipated project schedule below is based on Lord Aeck Sargent's experience with similar projects and assumes that the project moves forward promptly after the submission of this program document. The developer/architect team Partners Development + MBI are evaluating the project schedule.

<b>PHASE</b>	<b>START</b>	<b>END</b>
Design (SD, DD, CD)	5/1/2021	12/31/2021
Bidding/Negotiation/NTP	1/1/2022	2/28/2022
Construction	3/1/2022	3/31/2023
Close Out & Move In	4/1/2023	5/31/2023





 **LORD AECK SARGENT**

**Atlanta**

John Starr

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Atlanta, GA 30361

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[info@lordaecksargent.com](mailto:info@lordaecksargent.com)

**RESOLUTION TO APPROVE THE BORROWING OF  
MONEY BY ANOTHER METHOD BY THE UNIVERSITY  
OF TENNESSEE**

**Recitals**

Whereas, The University of Tennessee (“UT”), on behalf of its Knoxville campus, proposes to amend (the “Amendment”) a lease agreement (the “Lease”) whereby UT leases space on a transmission tower and within a building for transmitting equipment associated with WUOT 91.9 FM (“WUOT”); and

Whereas, WUOT is licensed to UT and has been a public service of UT since 1949, is a charter member of National Public Radio and was one of the first non-commercial FM radio stations in the Southeast; and

Whereas, WUOT is a Class C FM (full power) non-commercial radio station which broadcasts 24 hours a day to approximately 79,000 listeners each week throughout East Tennessee and surrounding states (approximately 100-mile radius of Knoxville) and has an active community outreach program and partners with numerous non-profits from throughout its service area; and

Whereas, in 1987, UT leased space on a transmitter tower and within a building both located on Memorial Park Drive, Knoxville, Tennessee and the Lease was extended in 2012 and expires on June 30, 2022; and

Whereas, the annual payments under the Lease are twenty thousand and forty-three dollars and no cents (\$20,043.00); and

Whereas, the term of the Amendment will end on June 30, 2032 with options for up to four (4) additional five (5) year periods thereafter with annual rent of twenty seven thousand dollars and no cents (\$27,000.00) (“Rent”) for the first year of the Amendment with the Rent being increased by four percent (4%) beginning with the second year of the Amendment and each and every year of the term of the Amendment and any extension thereafter; and

Whereas, funding for payments of the Rent will be made by UT with funds from Plant Funds (Non-Auxiliary) (A) and Gifts.

**BE IT RESOLVED BY THE TENNESSEE STATE SCHOOL BOND AUTHORITY:**

1. In accordance with the authority provided by Tennessee Code Annotated Section 49-3-1205(11), the Tennessee State School Bond Authority (the “Authority”) gives its approval to UT to enter into the Amendment.

BE IF FURTHER RESOLVED that all resolutions or parts of resolutions in conflict are repealed, and the resolution shall be effective as of March 28, 2022.

Adopted by the Authority at its meeting on March 28, 2022.

---

JASON E. MUMPOWER, SECRETARY  
TENNESSEE STATE SCHOOL BOND AUTHORITY

UNIVERSITY OF TENNESSEE

**Acquisition – Lease Amendment**

**Requested Action:**                    **Approval of a lease amendment with waiver of advertisement and appraisals**

**Transaction Description:**        Transaction No. TBD

• **Proposed Amendment**

- **Term:**                                45 years (July 1, 1987 – June 30, 2032) with four (4) five (5) year extension options
- **Area / Costs:**                    Space on radio tower and within building  
Year 36 Contract Rent: (plus utilities)                    \$27,000.00  
Average Annual Contract Rent (plus utilities)                    \$18,478.00

• **Current Lease**

- **Location:**                            University of Tennessee - Knoxville (UTK)  
Memorial Park Drive, Knoxville, TN
- **Landlord:**                            WBIR-TV, LLC (as successor in interest to Gannett Pacific Corporation)
- **Term:**                                 35 years (July 1, 1987 – June 30, 2022)
- **Area / Costs:**                    Space on radio tower and within building  
Average Annual Rent (plus utilities)                    \$14,525.11

• **Source of Funding:**                Plant Funds (Non-Auxiliary) (A) and Gifts

• **Procurement Method:**            Negotiated

• **FRF Rate:**                            NA

**Comment:**                            In 1987, UTK leased space on the transmitter tower and within the building for WUOT 91.9 FM which is licensed to the University of Tennessee and has been a public service of UT since 1949. The station is a charter member of National Public Radio (NPR) and was one of the first non-commercial FM radio stations in the Southeast. The lease rate increases 4% each year.

Waiver of advertisement is requested due to the unique nature of the lease, this location is best suited for WUOT's transmission needs and the significant cost to remove and relocate the antenna.

**Previous Action:**                    TBD                    Looking for SBC ESC Minutes from 1987.

**SSC Report:**                         03/14/2021

UNIVERSITY OF TENNESSEE

**Acquisition – Lease Amendment**

**Requested Action:**                    **Approval of a lease with waiver of advertisement and appraisals**

**Transaction Description:**        Transaction No. TBD

● **Proposed Amendment**

○ **Term:**                                55 years (July 1, 1987 – June 30, 2032) with four (4) five (5) year extension options

○ **Area / Costs:**                    Space on radio tower and within building  
First Year Contract Rent: (plus utilities)                    \$27,000.00  
Average Annual Contract Rent (plus utilities)                \$32,416.49

● **Current Lease**

○ **Location:**                         University of Tennessee - Knoxville (UTK)  
Memorial Park Drive, Knoxville, TN

○ **Landlord:**                         WBIR-TV, LLC (as successor in interest to Gannett Pacific Corporation)

○ **Term:**                                45 years (July 1, 1987 – June 30, 2022)

○ **Area / Costs:**                    Space on radio tower and within building  
Annual Rent (plus utilities)    \$20,043.00

● **Source of Funding:**             Plant Funds (Non-Auxiliary) (A) and Gifts

● **Procurement Method:**        Negotiated

● **FRF Rate:**                         NA

**Comment:**                            In 1987, UTK leased space on the transmitter tower and within the building for WUOT 91.9 FM which is licensed to the University of Tennessee and has been a public service of UT since 1949. The station is a charter member of National Public Radio (NPR) and was one of the first non-commercial FM radio stations in the Southeast.

Waiver of advertisement is requested due to the unique nature of the lease, this location is best suited for WUOT's transmission needs and the significant cost to remove and relocate the antenna.

**Previous Action:**                    **TBD**                    **Looking for SBC ESC Minutes from 1987.**

**SSC Report:**                         03/14/2021

## EXECUTIVE SUMMARY

### **Background -**

The University of Tennessee, on behalf of its Knoxville campus, proposes to amend a lease agreement whereby the University leases space on a transmission tower and within a building for transmitting equipment associated with WUOT 91.9 FM.

WUOT 91.9 FM is licensed to the University of Tennessee and has been a public service of UT since 1949. The station is a charter member of National Public Radio (NPR) and was one of the first non-commercial FM radio stations in the Southeast.

WUOT is a Class C FM (full power) non-commercial radio station which broadcasts 24 hours a day to approximately 79,000 listeners each week throughout East Tennessee and surrounding states (approximately 100-mile radius of Knoxville). In addition to NPR programming, WUOT broadcasts concerts by local performing arts organizations, including the Knoxville Symphony Orchestra and the Knoxville Chamber Orchestra. Concerts and recitals from UT's School of Music are also featured, as are local classical and jazz musicians. WUOT has an active community outreach program and partners with numerous non-profits from throughout its service area.

In 1987, the University leased space on the transmitter tower and within the building located on Memorial Park Drive, Knoxville, Tennessee. WUOT's antenna is somewhat unique in that it is three sided which provides improved transmission capabilities in multiple directions. The lease was extended in 2012 and expires June 30, 2022.

### **Request –**

The University requests to extend the lease for an additional ten (10) year with four (4) five (5) year options to extend. The rent will increase to \$27,000 per year or \$2,250 per month with four (4) per cent annual increases.

Prepared By:

## SECOND AMENDMENT TO TOWER LEASE AGREEMENT

This Second Amendment to Tower Lease Agreement (“**Second Amendment**”) is made this \_\_\_ day of February, 2022 (“**Execution Date**”), to be effective as of July 1, 2022 (the “**Second Amendment Effective Date**”) by and between WBIR-TV, LLC, a Delaware limited liability company (as successor in interest to Gannett Pacific Corporation) (“**Lessor**”) and The University of Tennessee (“**Lessee**”). Lessor and Lessee may each be referred to herein individually as a “**Party**” and collectively as the “**Parties.**”

**WHEREAS**, Lessor and Lessee (or its predecessor(s) in interest) entered into that certain Tower Lease Agreement dated as of May 15, 1987 (the “**Lease**”), as amended by that Amendment I to Lease dated as of July 1, 2012 (“**First Amendment**” and, together with the Lease, the “**Agreement**”); and

**WHEREAS**, Lessor and Lessee desire to amend the Agreement in accordance with the terms and conditions of this Second Amendment;

**NOW, THEREFORE**, in consideration of the mutual promises herein set forth and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. As of the Second Amendment Effective Date, Section 3(B) of the Agreement (PAYMENTS), as previously amended pursuant to the First Amendment, is hereby deleted in its entirety and replaced with the following:

“(B) **PAYMENTS:** In addition, Lessee shall pay annual rent of Twenty Seven Thousand Dollars (\$27,000.00) (“**Rent**”), payable in equal and successive monthly installments in advance of Two Thousand Two Hundred Fifty Dollars (\$2,250.00) on the first day of each month during the Term. Such Rent payments shall be made without any setoff or deduction whatsoever. The annual Rent stated herein shall be increased beginning with the second (2nd) year of the First Renewal Term and each and every year of the Term thereafter in order to reflect a four percent (4%) annual increase. Annual Rent for Additional Renewal Term(s), if any, shall be the then-current annual Rent increased to reflect a four percent (4%) annual increase.”

2. Section 4 (TERM) of the Agreement, as previously amended pursuant to the First Amendment, is hereby deleted in its entirety and replaced with the following:

“4. **TERM; RENEWAL:** The initial term of this shall commence on July 1, 1987 and remain in effect through June 30, 2022 (the “**Initial Term**”). Following the Initial Term, this Agreement shall automatically renew for an additional ten (10) year period, i.e., through June 30, 2032 (the “**First Renewal Term**”), and thereafter, shall automatically renew again for up to four (4) additional five (5) year periods (each, an “**Additional**

**Renewal Term**”), unless (a) Lessee provides written notice to Lessor at least one hundred eighty (180) days prior to the end of the then-current Additional Renewal Term of its intent to terminate or (b) this Agreement is terminated prior to the expiration of the First Renewal Term or then-current Additional Renewal Term. The Initial Term, First Renewal Term and any Additional Renewal Terms are collectively referred to herein as the “**Term.**” Upon the termination of this Agreement for any reason, all antennas and equipment belonging to Lessee shall be removed from the premises at Lessee’s expense.”

3. Except as expressly modified by this Second Amendment, all terms, conditions, and provisions of the Agreement shall continue in full force and effect as set forth in the Agreement. Except as otherwise modified or defined herein, all capitalized terms in this Second Amendment have the same meanings as set forth in the Agreement. In the event of a conflict between the terms and conditions of the Agreement and the terms and conditions of this Second Amendment, the terms and conditions of this Second Amendment shall prevail. Each party represents and warrants to the other party that this Second Amendment has been duly authorized, executed, and delivered by it and constitutes a valid and legally binding agreement of the specific subject matter contained herein. Each party agrees that this Agreement, as amended by this Second Amendment, constitutes a complete and exclusive statement of the Agreement between the parties, and supersedes all prior proposals, understandings, oral and written, relating to the subject matter contained herein.

**IN WITNESS WHEREOF**, the parties have duly executed this Second Amendment as of the Amendment Effective Date.

**LESSOR:  
WBIR-TV, LLC**

By: \_\_\_\_\_  
Name: David Hunt  
Title: President and General Manager

**LESSEE:  
The University of Tennessee**

By: \_\_\_\_\_  
Name:  
Title:

Approved as to form and legality:

**Tennessee Attorney General**

\_\_\_\_\_  
Herbert H. Slatery III, Attorney General and Reporter



**LESSOR NOTARY**

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

Before me, the undersigned notary of the State and County aforesaid, personally appeared \_\_\_\_\_, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who, upon oath, swore to and acknowledged himself/herself to be \_\_\_\_\_ of \_\_\_\_\_, the within-named bargainer, a limited liability company, and that he/she as such officer, executed the foregoing instrument for the purpose therein contained, by signing the name of the company by himself/herself as such officer.

WITNESS my hand and seal at office in \_\_\_\_\_, this \_\_ day of \_\_\_\_\_, 2022.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

**LESSEE NOTARY**

STATE OF TENNESSEE

COUNTY OF KNOX

Personally appeared before me, the undersigned Notary Public for Knox County, \_\_\_\_\_, with whom I am personally acquainted or proved to me on the basis of satisfactory evidence, and who, upon oath, acknowledged that he/she is the \_\_\_\_\_ of the University of Tennessee and that he/she as officer, being authorized so to do, executed the foregoing instrument for the purpose therein contained by signing the name of the University of Tennessee by himself as officer.

Witness my hand and seal, at office in, this \_ day of \_\_\_\_\_, 2022.

\_\_\_\_\_  
Notary Public.

My Commission Expires:

\_\_\_\_\_

## AMENDMENT I TO LEASE

This Amendment I to the Lease Agreement ("Amendment") is made and entered into as of this 15 day of MAY, 2012 by and between **GANNET PACIFIC CORPORATION**, (hereinafter called "Lessor") and **THE UNIVERSITY OF TENNESSEE** (hereinafter called "Lessee").

### WITNESSETH:

WHEREAS, the Lessor and Lessee entered into that certain Tower Lease Agreement dated MAY 15, 1987 AND IS HEREBY MODIFIED, EFFECTIVE July 1, 2012, AS FOLLOWS:

1. Section 3 PAYMENTS (B) is deleted in its entirety and replaced with the following:

**3. PAYMENTS (B):** In addition, WUOT shall pay rent of Eighteen Thousand Dollars (\$18,000) per year indexed as hereafter provided which will be due and payable on or before JUNE 30<sup>th</sup> of each year. Beginning with the payment at the end of the second year, the annual rent will change in direct proportion to any change in the "Consumer Price Index" as herein defined except that the rent shall never be less than Eighteen Thousand Dollars (\$18,000) per year. The term "Consumer Price Index" shall mean the "Consumer Price Index - Seasonally Unadjusted U. S. City Average For All Items For All Urban Consumers (1967 = 100)", published monthly in the "Monthly Labor Review" of the Bureau of Labor Statistics of the United States Department of Labor ("CPI-U"). If the CPI-U is discontinued, the "Consumer Price Index - Seasonally Unadjusted U. S. City Average For All Items For Urban Wages Earners and Clerical Worker (1967=100)", published monthly in the "Monthly Labor Review", as well as other publications, of the Bureau of Labor Statistics of the United States Department of Labor (CPI-W), shall be used instead of the CPI-U for making the computations hereunder. If the CPI-W is discontinued, comparable statistics on the purchasing power of the consumer dollar published by the Bureau of Labor Statistics of the United States Department of Labor shall be used instead of the CPI-U for making the computations hereunder. If the Bureau of Labor Statistics shall no longer maintain statistics on the purchasing power of the consumer dollar, comparable statistics published by a reputable financial periodical of national distribution or generally recognized national authority selected by GANNETT PACIFIC CORPORATION, and approved in writing by THE UNIVERSITY OF TENNESSEE, (which approval shall not be unreasonably withheld) shall be used instead of the SPI-U for making the computations hereunder. If the base year (1967 = 100) or other base year in computing the CPI-U is changed, the figures used in making the computations hereunder shall be changed accordingly. In making the computation, the index which will be published for the month shown first above, will be used as the base index and the index last published before the rent is paid will be used as the rent year index.

2. Section 4 TERM is deleted in its entirety and replaced with the following:

**4. TERM:** This Agreement shall become effective and be dated the date when all appropriate state officials' signatures have been obtained and the fully executed document returned to and signed by GANNETT PACIFIC CORPORATION, and shall continue thereafter, subject to all of the terms and conditions of this Agreement, for a ten (10) year term. Upon the termination of this Agreement for any reason, all antennas and equipment belonging to THE UNIVERSITY OF TENNESSEE shall be removed from the premises at THE UNIVERSITY OF TENNESSEE'S expense.

3. Except as specifically modified hereby, the terms and conditions of the Lease shall remain in full force and effect, and the Lease, as herein amended, is hereby ratified, confirmed and approved.

IN WITNESS WHEREOF, the provisions of this Amendment I to Lease shall be binding and insure to the benefit of the parties hereto and their respective heirs, legal representatives, successors and assigns.

LESSOR:

LESSEE:

BY: Jerry Lee

BY: David W. Smith

IT'S: Treas / SM

IT'S: Treasurer

DATE: 8/6/12

DATE: 8/14/12

TOWER LEASE AGREEMENT

THIS LEASE AGREEMENT is entered into this 15<sup>TH</sup> day of MAY, 1987 by and between MULTIMEDIA WBIR Inc., a South Carolina corporation with principal offices at Greenville, South Carolina, licensee of Television Station WBIR-TV, Knoxville, Tennessee, (herein "Multimedia") and The University of Tennessee with principal offices at Knoxville, Tennessee, which proposes to relocate, install and operate transmitting equipment for a Non-Commercial Educational FM Radio Station currently operating on Channel 220, 91.9 MHZ at Knoxville, Tennessee (herein "WUOT").

WITNESSETH

WHEREAS, Multimedia is the owner of a parcel of land located on Memorial Park Drive, Sharp's Ridge, Knoxville, Tennessee (the "Site"), on which Site it has erected two transmitter towers for the support of television broadcasting and other antennas; and

WHEREAS, Multimedia is the owner of a building situated at the Site suitable for and presently used as a broadcast transmitter building, and

WHEREAS, WUOT has made an application to the Federal Communications Commission for authority to relocate its transmission facility to said Site,

NOW, THEREFORE, the parties hereto, enter into the following Lease Agreement ("Agreement"):

1. TOWER LEASE

In consideration of the covenants and obligations contained herein, Multimedia does hereby lease to WUOT the space on Multimedia's 1504 foot Kline tower shown on the Engineering Diagram (Exhibit A) attached hereto and incorporated herein by this reference. All associated equipment including a studio to transmitter microwave ("STL") system will be placed on the leased space on the 704 foot Ideco tower. A contractor selected by Multimedia with the approval of WUOT will install in the leased space on the Kline tower the main FM radio transmission antenna and line and the associated equipment on

the Ideco tower at WUOT's expense, which shall not exceed Fifty Thousand Dollars (\$50,000). Both towers are located on property described in Tract No. 1 in the deed recorded in deed book 1866 page 634 in the Register's office of Knox County, Tennessee which description is incorporated into this Agreement by this reference. All equipment will be owned by WUOT and used for the proper operation and maintenance of FM transmit antenna and related equipment and for no other purpose.

## 2. TRANSMITTER BUILDING SERVICES

In consideration of the covenants and obligations contained herein, Multimedia does hereby lease to WUOT the non-exclusive access to and use by WUOT of space in the transmitter building, at the location described in the attached diagram (Exhibit B), solely for the broadcasting of non-commercial educational radio programs to the extent that such use and occupancy may be necessary for the proper operation and maintenance of a radio transmitter and related equipment only and for no other purpose.

## 3. PAYMENTS

(A) In consideration of the services to be performed by Multimedia hereunder, and in addition to other sums to be paid which are provided in this agreement, WUOT shall make payment to Multimedia of an access fee of Seventy-five Thousand Dollars (\$75,000) which shall be made no later than ninety (90) days after the signing of this contract and which must be paid before beginning installation of the antenna and other equipment. Upon receipt of the access fee Multimedia will make available to WUOT the towers and transmitter space described herein, provided WUOT has received a construction permit for WUOT's Station from FCC and Multimedia has approved all plans and specifications for the installation of the equipment.

(B) In addition, WUOT shall pay rent of Seven Thousand Dollars (\$7,000) per year indexed as hereafter provided which will be due and payable on or before the last day of each year. Beginning with the payment at the end of the second year, the annual rent will change in direct proportion to any change in the "Consumer Price Index" as herein defined except that the rent shall never be less than Seven Thousand Dollars (\$7,000) per year. The term "Consumer Price

Index" shall mean the "Consumer Price Index - Seasonally Unadjusted U. S. City Average For All Items For All Urban Consumers (1967=100)", published monthly in the "Monthly Labor Review" of the Bureau of Labor Statistics of the United States Department of Labor ('CPI-U'). If the CPI-U is discontinued, the "Consumer Price Index - Seasonally Unadjusted U. S. City Average For All Items For Urban Wages Earners and Clerical Workes (1967=100)", published monthly in the "Monthly Labor Review", as well as other publications, of the Bureau of Labor Statistics of the United States Department of Labor ("CPI-W"), shall be used instead of the CPI-U for making the computations hereunder. If the CPI-W is discontinued, comparable statistics on the purchasing power of the consumer dollar published by the Bureau of Labor Statistics of the United States Department of Labor shall be used instead of the CPI-U for making the computations hereunder. If the Bureau of Labor Statistics shall no longer maintain statistics on the purchasing power of the consumer dollar, comparable statistics published by a reputable financial periodical of national distribution or generally recognized national authority selected by Multimedia, and approved in writing by WUOT (which approval shall not be unreasonably withheld) shall be used instead of the CPI-U for making the computations hereunder. If the base year (1967=100) or other base year in computing the CPI-U is changed, the figures used in making the computations hereunder shall be changed accordingly. In making the computation, the index which will be published for the month shown first above, will be used as the base index and the index last published before the rent is paid will be used as the rent year index.

(C) WUOT shall reimburse Multimedia for all expenses of Multimedia which are incurred due to the installation and operation of the WUOT FM antenna and transmission line, including but not limited to, insurance, taxes and maintenance and legal expenses for preparation of this contract, with the legal expenses not to exceed Six Thousand Dollars (\$6,000). Multimedia, with WUOT's approval, will engage the erection contractor for the tower installation, and will invoice WUOT for the cost incurred at the time it is invoiced. Total cost of all reimbursement by WUOT covered under section 3C shall not exceed Fifty Thousand Dollars (\$50,000.)

(D) WUOT shall compensate an engineering firm for engineering expenses arising from its evaluation of the antenna and transmission line installation proposed by WUOT, the terms of which payment shall be fixed by a separate agreement between WUOT and the engineering firm.

#### 4. TERM

This Agreement shall become effective and be dated the date when all appropriate state officials' signatures have been obtained and the fully executed document returned to and signed by Multimedia, and shall continue thereafter, subject to all of the terms and conditions of this Agreement, for a twenty-five (25) year term. At the expiration of such twenty-five (25) year term, the parties shall enter negotiations looking toward an extension of the Agreement for an additional ten (10) years on terms and conditions agreeable to both parties. Upon the termination of this Agreement for any reason, all antennas and equipment belonging to WUOT shall be removed from the premises at WUOT's expense.

#### 5. RIGHTS AND OBLIGATIONS OF MULTIMEDIA AND WUOT

(A) Subject to the terms and conditions set forth herein, WUOT shall during the term of this Agreement operate and maintain its antenna and transmitter equipment in the space allocated therefor in connection with the operation of its mission. WUOT shall at all times, and at its sole expense, be responsible for the operation, maintenance and repair of its equipment and facilities located on the Site. WUOT shall maintain all such equipment and facilities in good condition, and in compliance with good engineering practices and all FCC licenses and applicable governmental regulations. Once WUOT has begun broadcasting, its subsequent failure to broadcast for one (1) year is a default under this agreement.

(B) WUOT shall bear the expense of any modifications or additions to the building (wiring, lighting, partitions, exhaust ports, etc.) necessary to the installation or operation of the WUOT equipment, such modifications or additions being subject to approval by Multimedia which approval shall not be unreasonably withheld. Multimedia shall bear the expense of maintaining the exterior of the transmitter building, including the roof and exterior walls. WUOT

shall bear the expense of interior maintenance in the area to which WUOT has access including painting or covering of walls or floors. Multimedia shall provide restroom facilities, including hot and cold water. The water will be used only for restroom purposes, and not for cooling of equipment.

(C) At any time WUOT's antenna and other equipment is installed or removed from the towers and building, all plans and specifications shall be submitted to and approved by Multimedia before any work is performed. Multimedia's approval shall not be unreasonably withheld. Multimedia shall contract for the installation, removal and reinstallation of the University's FM antenna and transmission line on Multimedia's Kline tower at WUOT's expense. Multimedia shall also have the right to inspect all work in progress and all equipment after installation during the full term of this Agreement.

(D) WUOT shall obtain Multimedia's consent, which consent shall not be unreasonably withheld, before gaining access to the tower elevator for the purpose of operating and maintaining WUOT's Station, provided, however, that such access, broadcast operations and related activities shall not interfere with the use of the tower, elevator or transmitter building by Multimedia or any user of the tower, and not interrupt or otherwise adversely affect the continued broadcast operation of Multimedia or any other user. The operation of the elevator on the Kline tower shall be in the presence of a Multimedia employee in order to meet insurance requirements. WUOT shall have the right to use all access roads and driveways to and from the Site to the public road.

(E) Multimedia and WUOT operate transmission facilities which emit radio frequency radiation which may be injurious to the health of people who come in close contact with radiation. Without assuming any contractual or tort responsibility and liability beyond what is now implied by law, Multimedia reserves the right when people are working on or around the tower to require WUOT to reduce its operating power level (main transmitter and all auxiliary systems) to safe radiation levels and levels required by law and the FCC. If WUOT desires to have employees or contractors working on or in the vicinity

of the towers it shall notify Multimedia and Multimedia agrees to reduce its power to the appropriate level at a time of day or night agreeable to both parties.

#### 6. TERMINATION

(A) If at any time: (i) WUOT defaults in the payments due under the terms of this Agreement when such become due and payable, and such default continues for ninety (90) days after the giving by Multimedia to WUOT of written notice specifying the default; or (ii) WUOT defaults in performing any other covenant or agreement whatsoever to be performed by WUOT under this Agreement, and such default continues for ninety (90) days after the giving by Multimedia to WUOT of written notice specifying the existence of such default; then, in any such event, Multimedia, at any time at its election, with written notice to WUOT but without demand, may declare this Agreement ended and may remove WUOT's property without prejudice to any other remedies which might otherwise be available to Multimedia under Tennessee law. Should Multimedia terminate this Agreement as described in this paragraph and WUOT fails to remove its equipment within ninety (90) days of notice to remove the equipment, Multimedia may dismantle WUOT's equipment, return it to WUOT, and invoice WUOT for all reasonable expenses associated with removal of the equipment. In the event of such termination, WUOT shall be liable for all damages, deficiencies or losses Multimedia may reasonably incur as the result of the default by WUOT. If WUOT has not commenced construction by the second (2nd) anniversary date hereof, this Agreement shall terminate.

(B) If at any time Multimedia defaults in performing any covenant or agreement whatsoever to be performed by Multimedia under this Agreement, and any such default continues for ninety (90) days after the giving by WUOT to Multimedia of written notice specifying the existence of such default; then, in any such event, WUOT, at any time at its election, with written notice to Multimedia but without demand, may declare this Agreement ended, may remove its property without prejudice to any other remedies which might be available to WUOT under Tennessee Law, and shall be relieved of any further obligations to render lease payments. In the event of such



termination, Multimedia shall be liable for all damages, deficiencies or losses WUOT may reasonably incur as a result of the default by Multimedia.

(C) If the performance by WUOT or Multimedia of any of this Agreement is prevented, hindered, delayed or otherwise made impractical by reason of any causes or events beyond the control of either party such as damage or destruction of the towers or building, riot, fire, strike, explosion, war, changes in governmental regulations, loss of operating license, or elimination of appropriations for continued operation of WUOT, WUOT or Multimedia shall be excused from such performance to the extent that it is prevented, hindered or delayed by such causes. Upon the occurrence of such events, WUOT or Multimedia shall use reasonable efforts to notify the other party of the nature and extent of such conditions.

#### 7. ASSIGNMENT

(A) WUOT may not assign or transfer any of its rights or obligations under this Agreement except: 1) to an assignee or transferee acquiring the license for WUOT's Station; or 2) with the written approval of Multimedia. Such an assignment or transfer shall result in a concomitant assignment of all the rights and obligations of WUOT under this Agreement, provided, that, any assignee or transferee shall be liable for and shall indemnify, defend and save harmless Multimedia from all damages, deficiencies or losses Multimedia may incur as the result of the default by such assignee or transferee, and from any and all losses, damages, claims, costs and expenses of any kind arising from any act, omission, fault or negligence arising from such assignee's use or occupancy of the towers and transmitter building. Such assignee shall at its own expense maintain comprehensive liability and full property insurance covering its equipment and activities on the Site. Assignee shall be solely responsible for damages or claims for damages arising from injury (including death) or damage to persons or property occasioned or caused by an act, omission, fault or negligence of assignee or arising from assignee's use or occupancy of the towers or buildings.

(B) Multimedia may sell, assign, encumber or otherwise dispose of its interest in the towers and/or Site as it shall

determine, provided, however, that any purchaser, assignee, mortgagee, creditor or other recipient shall be subject to the rights of WUOT hereunder.

#### 8. INSURANCE

(A) Multimedia will continue to maintain public liability and property damage insurance upon the towers, building and Site of substantially the same type and coverage as in effect on the date of this Agreement, but shall name The University of Tennessee and WUOT as an additional insured with cross liability endorsement. To the extent a claim or occurrence is not covered under this insurance policy, Multimedia shall have no responsibility or liability for damages or claims for damages arising from injury (including death) or damage to persons or property occasioned or caused by an act, omission, fault or negligence of WUOT.

(B) In the event that the towers and/or building are destroyed or damaged by any casualty, Multimedia in its sole discretion shall determine whether to repair or rebuild the destroyed or damaged towers or building provided notice of the damage or destruction is given by written notice to WUOT and WUOT shall be consulted and advised concerning Multimedia's decision to repair or reconstruct the towers or buildings. If Multimedia determines to repair or reconstruct the towers or buildings then this Agreement shall continue in full force and effect. If the towers or buildings are so damaged or destroyed by casualty that reconstruction or repairs cannot be reasonably undertaken without dismantling WUOT's antenna or related equipment then Multimedia may remove WUOT's antenna or related equipment and interrupt WUOT's broadcasting activity but shall replace such antenna and/or related equipment as soon as reasonably possible.

(C) The installation contractor selected by Multimedia, with the approval of WUOT, shall procure and maintain business loss insurance in the amount of Five Million Dollars (\$5,000,000.00), with Multimedia named as the primary insured and WUOT as the secondary insured.

#### 9. WUOT'S OBLIGATION REGARDING DISPUTES

WUOT recognizes that the transmitter building and tower are or may be used by other parties, and that WUOT is and will be

obligated to cooperate with Multimedia and whichever other parties may be involved in the resolution of disputes regarding electronic interference, unsafe conditions, and other technical conditions which require immediate correction. All such disputes whether arising from use of WUOT's antenna or otherwise which remain unresolved for longer than two (2) weeks after first being reported to the other party or parties shall be submitted to Jules Cohen & Associates, Consulting Electronics Engineers, or to such other consulting electronic engineer as may be agreed upon by Multimedia, WUOT and other involved parties, whose decision shall be final and binding on all parties. The decision of the consulting electronics engineers sent to the party required to take action shall eliminate the 90 day notice required in paragraph 6(A) and this Agreement may be terminated immediately or within a period of time determined to be reasonable by the Consulting Electronics Engineer.

#### 10. NON-LIABILITY OF MULTIMEDIA

Multimedia will maintain the towers and transmitter building in substantially as good condition as they are on the date of this Agreement and consistent with FCC requirements and good engineering practices, ordinary wear and tear and damage or destruction of the Site excepted. Multimedia will not be liable to WUOT by reason of inconvenience or injury to the Site, towers, antenna or activities conducted by WUOT therefrom arising from the necessary repair of any portion of the Site or towers, or from the making of any alteration or improvements in or to the structures or appurtenances or equipment, provided, Multimedia has exercised due care to avoid or minimize such inconvenience or injury.

#### 11. NO AGENT

The relationship between the parties are independent entities contracting for their own benefit and neither party is the agent nor partner of the other and no third party shall have the right to enforce rights or obligations created by this Agreement.

#### 12. GOVERNING LAW

(A) This Agreement shall be construed and enforced in accordance with the laws of The State of Tennessee.

(B) Notwithstanding anything in this Agreement to the contrary, any provision or provisions will not apply to the extent they are (it is) finally determined by a court of competent jurisdiction, including appellate review if pursued, to violate the laws or constitution of The State of Tennessee.

**13. COVENANT OF QUIET ENJOYMENT**

Multimedia warrants that it has the right to enter into this Agreement and that WUOT upon faithfully performing and fulfilling all of the terms, conditions and obligations of WUOT contained herein, shall be entitled to the benefits herein upon the terms, covenants and conditions set forth in this Agreement.

**14. NOTICES**

All notices, consents or requests required or permitted hereunder shall be in writing and shall be mailed by registered or certified mail, postage prepaid, addressed as follows (or to such other address as either party shall designate in a subsequent notice):

If to Multimedia: James M. Hart, Vice President  
Multimedia WBIR, Inc.  
1513 Hutchison Avenue  
(P.O. Box 3487)  
Knoxville, Tennessee 37917  
cc: Robert E. Horton, Technical Director  
(Same address)

If to WUOT: Thomas B. Ballard  
Executive Director  
Institute for Public Service and  
Continuing Education  
The University of Tennessee  
109 Student Services Building  
Knoxville, Tennessee 37996-0212

**15. ENTIRE AGREEMENT**

This Agreement contains the entire understanding between the parties with respect to the subject matter hereof and may not be modified except by an instrument in writing executed by the parties to be bound.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first above written.

MULTIMEDIA WBIR, INC.

By James M. Hart

(SEAL)

Title: Vice President & General Manager

Attest:

Catherine V. Norton

My Commission Expires 6/22/88

THE UNIVERSITY OF TENNESSEE

By James J. Pulland  
Executive Director IPS/CE

By [Signature]  
Vice President

(SEAL)

Attest:

Henry W. Bushell

My commission expires Dec. 20, 1988



Approved as to Form and Legality

[Signature]  
Attorney General

David L. Manning  
Commissioner, Finance and Administration

Ned McWhorter  
Governor

Int/SFFFORM1/#1  
Revised 3/5/87

APPLICATION TO RELOCATE WBIR TV TOWER  
 MULTIMEDIA, INC.  
 EXHIBIT E), VERTICAL SKETCH (SCALE: 1" = 200')  
 JULY 26, 1978

TOWER SERVICES AGREEMENT  
 MULTIMEDIA WBIR, INC. &  
 E. TENN. PUBLIC COMMUNICA-  
 TIONS CORP. EXHIBIT "A" 1/86

PROPOSED TRIANGULAR -  
 GUYED TOWER BY KLINE

RCA TD-12A10-R

ETPCC ANTENNA  
 CH 15 (SIDE MOUNT)

WUOT ANTENNA

EXISTING IDECO  
 SELF SUPPORTING  
 TOWER, OVERALL  
 HEIGHT: 704'

2163' AG  
 2808' AMSL  
 1786' AAT

1341 AG  
 2686 AMSL

1118' AG  
 2763' AMSL

1255' AG  
 2600' AMSL

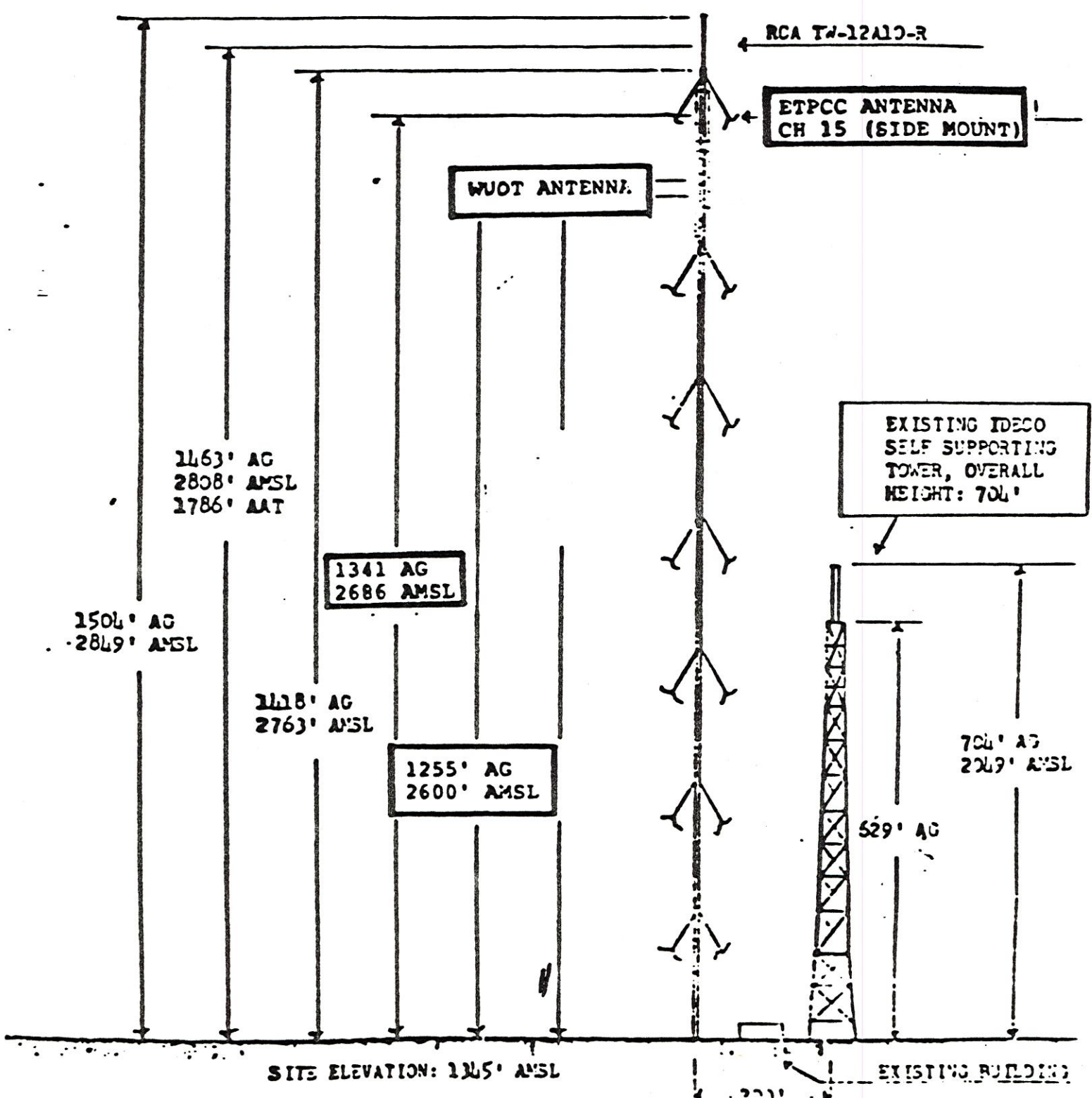
704' AG  
 2229' AMSL

529' AG

1504' AG  
 2849' AMSL

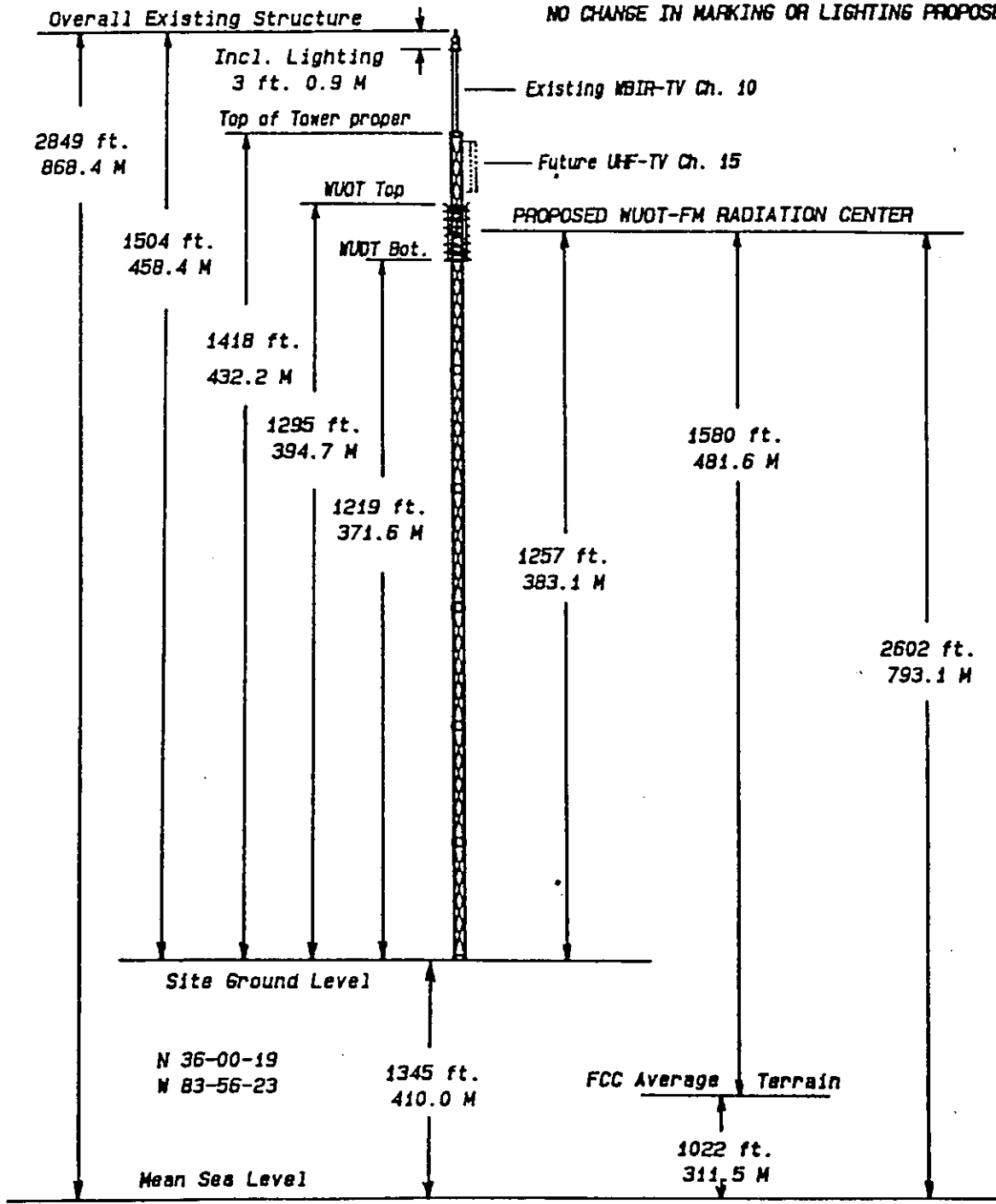
SITE ELEVATION: 1115' AMSL

EXISTING BUILDING



# WUOT EXHIBIT E-1. ANTENNA VERTICAL SKETCH

EXISTING STRUCTURE MARKED AND LIGHTED  
PER FAR PART 77 AND FAA DETERMINATION  
OF NO HAZARD, 78-ASO-19-0E  
NO CHANGE IN MARKING OR LIGHTING PROPOSED



N 36-00-19  
W 83-56-23

NOT TO SCALE - Dimensions as labelled

**B. SCOTT BAXTER**  
AND ASSOCIATES  
P. O. BOX 412  
BRIGHTWOOD, TENN. 37627

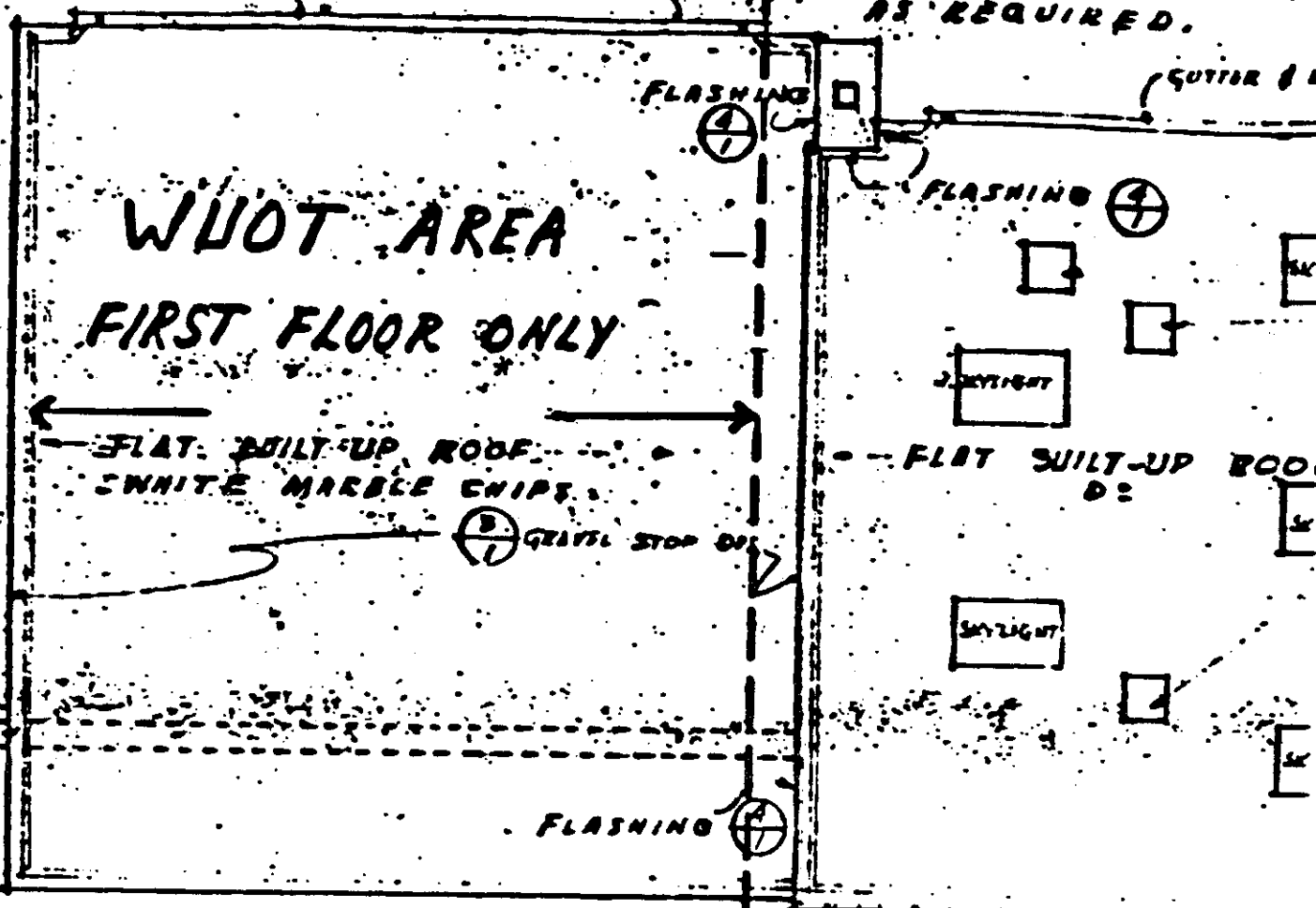
J M H & S

# PLOT PLAN

SCALE - 1" = 20'

NOTE: CONTRACTOR TO REMOVE ALL EXCESS DIRT & ROCK FROM SITE.

SOLID LINES ARE PROPOSED  
DOTTED LINES ARE EXISTING WHICH HAVE BEEN CONTRACTED TO BE REMOVED AS REQUIRED.



# ROOF PLAN

SCALE 1/8" = 1'-0"

ROOF PLAN; ROOF PLAN; & DETAILS  
 IV BIR - TV  
 TRANSMITTER BLDG.  
 KNOXVILLE, TENN.

# EXHIBIT B

MULTIMEDIA - WHOT  
 1-10-86 REH

PAINTER, WEEKS & McCARTY  
 ARCHITECTS  
 KNOXVILLE, TENNESSEE



**RESOLUTION TO APPROVE THE BORROWING OF  
MONEY BY ANOTHER METHOD BY THE UNIVERSITY  
OF TENNESSEE SOUTHERN**

**Recitals**

Whereas, the University of Tennessee Southern (“UTS”) proposes to enter into a contract (the “Contract”) with Caldwell & Gregory LLC (“C&G”) for the repair, maintenance and replacement of laundry equipment (the “Equipment”) to be placed in UTS’ residence halls; and

Whereas, the Equipment includes 8 Speed Queen Quantum Top Load Washers, 4 Speed Queen Quantum Front Load Washers (counts as 1.5 machines each), 8 Speed Queen Quantum Electric Single Dryers and 2 Speed Queen Quantum Electric Stack Dryers (counts as 2 machines each) and C&G will install a laundry room monitoring and service reporting system and service and repair and replace the Equipment at C&G's expense during the term of the Contract; and

Whereas, the Contract is for a five (5) year term at a rate of forty-one dollars and seventy cents (\$41.70) per machine per month for a twelve (12) month period (the “Rate”) with a total of twenty-six (26) machines and payments of two equal installments of six thousand five hundred and five dollars and twenty cents (\$6,505.20), one in the fall semester and one in the spring semester with a 3% increase to the Rate occurring in year three (3) of the five (5) year term; and

Whereas, summer usage is included in the Rate and the machines can be converted to require coins during summer camps/conferences with revenues being split equally between UTS and C&G; and

Whereas, UTS may terminate the Contract if UTS determines, in its sole discretion, that State of Tennessee appropriations are insufficient to fund UTS’s obligations under the Contract; and

Whereas, funding for payments of the Contract will be made by UTS from its Residence Hall Administration account.

**BE IT RESOLVED BY THE TENNESSEE STATE SCHOOL BOND AUTHORITY:**

1. In accordance with the authority provided by Tennessee Code Annotated Section 49-3-1205(11), the Tennessee State School Bond Authority (the “Authority”) gives its approval to UTS to enter into the Contract.

BE IF FURTHER RESOLVED that all resolutions or parts of resolutions in conflict are repealed, and the resolution shall be effective as of March 28, 2022.

Adopted by the Authority at its meeting on March 28, 2022.

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JASON E. MUMPOWER, SECRETARY  
TENNESSEE STATE SCHOOL BOND AUTHORITY

## **EXECUTIVE SUMMARY**

### **BACKGROUND**

The University of Tennessee Southern (UTS) proposes to enter into a five-year contract with Caldwell & Gregory (C&G) for the repair, maintenance and replacement of laundry equipment provided by C&G for UTS's student residence halls.

The agreement includes 8 Speed Queen Quantum Top Load Washers, 4 Speed Queen Quantum Front Load Washers (counts as 1.5 machines each), 8 Speed Queen Quantum Electric Single Dryers and 2 Speed Queen Quantum Electric Stack Dryers (counts as 2 machines each). C&G will install a laundry room monitoring and service reporting system and service, repair and replace the laundry machines at C&G's expense during the term of the agreement.

### **TERMS**

The term is five (5) years at a rate of \$41.70 per machine per month for a 12 month period. There will be a total of twenty-six (26) machines and payment will be made in two equal installments of \$6,505.20, one in the Fall semester and one in the Spring semester. Fees are subject to a 3% increase in year three of the five-year term. Summer usage is included in the monthly rate and the machines can be turned to require coins during summer camps/conferences with revenues being split 50/50 between UTS and C&G.

The laundry equipment will be installed in Criswell and Upperman Halls.

UTS may terminate the agreement if UTS determines, in its sole discretion, that State of Tennessee appropriations are insufficient to fund UTS's obligations under this agreement.

### **SOURCE OF FUNDS**

The lease will be paid with funds from UTS's Residence Hall Administration account.

### **REQUEST**

UTS is seeking TSSBA review and approval of the five-year equipment lease.

## **EXECUTIVE SUMMARY**

### **BACKGROUND**

The University of Tennessee Southern (UTS) proposes to enter into a five-year contract with Caldwell & Gregory (C&G) for the repair, maintenance and replacement of laundry equipment provided by C&G for UTS's student residence halls.

The agreement includes 8 Speed Queen Quantum Top Load Washers, 4 Speed Queen Quantum Front Load Washers (counts as 1.5 machines each), 8 Speed Queen Quantum Electric Single Dryers and 2 Speed Queen Quantum Electric Stack Dryers (counts as 2 machines each). C&G will install a laundry room monitoring and service reporting system and service, repair and replace the laundry machines at C&G's expense during the term of the agreement.

### **TERMS**

The term is five (5) years at a rate of \$41.70 per machine per month for a 12 month period. There will be a total of eighty (26) machines and payment will be made in two equal installments of \$6,505.20, one in the Fall semester and one in the Spring semester. Fees are subject to a 3% increase in year three of the five-year term. Summer usage is included in the monthly rate and the machines can be turned to require coins during summer camps/conferences with revenues being split 50/50 between UTS and C&G.

The laundry equipment will be installed in Criswell and Upperman Halls.

UTS may terminate the agreement if UTS determines, in its sole discretion, that State of Tennessee appropriations are insufficient to fund UTS's obligations under this agreement.

### **SOURCE OF FUNDS**

The lease will be paid with funds from UTS's Residence Hall Administration account.

### **REQUEST**

UTS is seeking TSSBA review and approval of the five-year equipment lease.

**CALDWELL & GREGORY LLC**  
**129 Broad Street Road**  
**Suite A**  
**Manakin-Sabot, Virginia 23103**

**(800) 927-9274**  
**(804) 784-6100**  
**(804) 784-7418 (Fax)**  
**service@caldwellandgregory.com**

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**LAUNDRY ROOM LEASE**  
**SPECIAL LAUNDRY SERVICE AND MAINTENANCE**

This agreement is between Caldwell & Gregory ("C&G"), whose offices are at the address listed above, and **THE UNIVERSITY OF TENNESSEE, ON BEHALF OF ITS SOUTHERN CAMPUS ("UTS")**, whose offices are located at **433 WEST MADISON STREET, PULASKI, TN 38478-2799** ("office address"). UTS, wishing to provide the students of the campus located at ("premises") **THE UNIVERSITY OF TENNESSEE SOUTHERN, 433 WEST MADISON STREET, PULASKI, TN 38478-2799** with laundry facilities, agrees to lease to C&G all current and future laundry areas within the premises for the purpose of installing, maintaining and servicing commercial washing, drying and laundry equipment within the premises.

**1. EQUIPMENT:**

C&G agrees to install in the premises the following commercial laundry equipment & technology:

- 8- Speed Queen Quantum Top Load Washers**
- 4- Speed Queen Quantum Front Load Washers (counts as 1.5 machines each)**
- 8- Speed Queen Quantum Electric Single Dryers**
- 2- Speed Queen Quantum Electric Stack Dryers (counts as 2 machines each)**

**The Speed Queen App/Online Monitoring System in the 2 Laundry Rooms (Criswell & Upperman)**  
**This includes all hardware (Gateways), install, wiring, and responsibility/upkeep of the system.**

C&G agrees to service the Equipment and keep it in repair at C&G's expense during the term of this agreement. C&G has the option to replace or remove the Equipment during the term of the agreement as necessary in order to maintain the Equipment properly. The parties agree that the Equipment, together with all fixtures installed in conjunction with the Equipment furnished by C&G under this agreement, shall at all times remain the property of C&G. C&G shall be entitled to remove the Equipment and any fixtures installed in conjunction with the Equipment upon the termination of this agreement. UTS shall not move, alter or tamper with the Equipment except upon the written authorization of C&G.

**2. TERM:**

This agreement shall commence on **JUNE 1, 2022**, and continue for a period of five years. UTS may terminate this agreement by giving C&G at least 30 days prior written notice if UTS determines, in its sole discretion, that State of Tennessee appropriations are insufficient to fund UTS' s obligations under this agreement.

**3. RENT:**

The University of Tennessee Southern will pay C&G \$41.70 per machines per month (12 months) for the governed Included Laundry Program. Payable in 2 equal payments (Fall and Spring semesters). Fees are subject to a 3% increase in year 3. Rent is based upon the amount of equipment initially installed and not on occupancy of the residence halls. If machines are added the rate will increase accordingly, but it will not be reduced if machines are removed or unused or if buildings are taken offline. If additional machines are added during the agreement, they will be billed at the prevailing rate or a new agreement will negotiated, depending on the required investment. For billing purposes: Top Load Washers = 1 machine, Front Load Washers = 1.5 machines, Single Dryers = 1 machine, Stack Dryers = 2 machines.

Summer Use: UTS summer student usage is included in the monthly fees. For Camps/Conferences, the machines can be switched to coin, and any revenues generated (minus transaction fees, if applicable) will be split 50/50 by C&G and UTS.

**4. ADDITIONAL OBLIGATIONS:**

UTS is responsible for providing:

- An internet drop in Criswell and one of the Upperman laundry rooms to connect the Gateway (Speed Queen App).
- A 110 outlet near each internet drop to power the Gateway (Speed Queen App).

C&G is responsible for providing:

- A full-service laundry program as described in the proposal submitted to UTS on February 2, 2022.

**5. SECURITY:**

UTS shall provide adequate security for the laundry area and the Equipment.

**6. INSURANCE:**

C&G agrees to obtain insurance for the Equipment in case of fire, destruction or theft. The proceeds of such insurance shall be payable to C&G. In the event of fire, destruction or theft, C&G shall have the option either to repair the stolen, destroyed or damaged Equipment, or to replace the Equipment with comparable equipment.

C&G must have insurance coverage that meets or exceeds the following limits:

Workers' Compensation (WC): Statutory Limits – required in all contracts

Employers' Liability Each Accident	\$ 100,000
Employers' Liability Disease – each employee	\$ 100,000
Employers' Liability Disease – policy limit	\$ 500,000

Commercial General Liability (CGL):

Each Occurrence Limit	\$ 1,000,000
Damage to Rented Premises – Ea. Occ.	\$ 300,000
Medical Expense – any one person	\$ 10,000
Personal & Advertising Injury Limit	\$ 1,000,000
General Aggregate Limit	\$ 2,000,000
Products/Completed Ops. Aggregate Limit	\$ 2,000,000

Automobile Liability

Combined Single Limit – each accident	\$ 1,000,000
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The following language must be included in the Description of Operations section of the COI:

*The University of Tennessee, its Board of Trustees, officers, employees, agents, and volunteers are named as Additional Insureds with respect to the General and Automobile Liability policies. A Waiver of Subrogation applies to Workers' Compensation, General Liability and Automobile Liability policies as evidenced on this certificate of insurance. All insurance policies above are primary and non-contributory to any other insurance available to the Certificate Holder. A thirty-day notice of cancellation is required.*

**7. EXCLUSIVITY:**

UTS agrees that it will not install or permit to be installed similar laundry facilities within UTS student residence halls, apartments, and athletic facilities for public use by UTS student residents during the term of this Agreement. UTS further agrees that it shall not install, nor permit others to install, any laundry equipment within the UTS student residence halls, apartments, and athletic facilities during the term of this Agreement. UTS student residence halls & apartments are located at the following addresses:

- Criswell Hall, 460 West Madison Street, Pulaski, TN 38478-2799
- Upperman Hall, 328 West Madison Street, Pulaski, TN 38478-2799
- East Campus Sports Center, 1238 East College Street, Pulaski, TN 38478-2799
- Curry Athletic Facility, Kermit Smith Drive, Pulaski, TN 38478-2799

**8. PERFORMANCE CLAUSE:**

C&G agrees to perform service in a responsive and professional manner. If an unsatisfactory condition exists with any of the laundry machines, UTS will have the right to notify C&G in writing via certified mail of such condition and C&G will have three (3) working days to respond with due diligence and make every effort to fix the situation. If such unsatisfactory condition is not corrected, UTS has the right to terminate this agreement.

**9. DEFAULT:**

In the event that UTS fails to perform any of its obligations under this agreement, subject to Section 13, C&G shall be entitled to as many of the following remedies as may be appropriate: (1) to terminate this agreement and remove all Equipment from the premises; (2) to recover from UTS as liquidated damages for lost profits and not as a penalty a sum equal to \$1.50 per day for each unit in the premises multiplied by the number of days remaining in the existing term; and (3) to recover any damages, including liquidated damages for lost profits, incurred by C&G due to UTS' s failure to perform according to this agreement. Failure by C&G to enforce its rights under this agreement following a breach or default by UTS shall not constitute a waiver by C&G of its rights to elect pursue the remedies provided under this agreement at a later time.

**10. UTILITIES:**

C&G may connect its Equipment to the electric and water lines and ventilation in the premises and use such utilities at no charge. UTS shall maintain all such utilities in good working order.

**11. NOTICE:**

Any written notice required under this agreement shall be delivered either by hand or by "Certified" United States Mail accompanied by a "Return Receipt" to the office addresses listed above for C&G and UTS.

**12. AUTHORITY:**

UTS represents that it possesses the lawful authority to execute this agreement.

**13. GOVERNING LAW:**

The internal laws of the State of Tennessee (without regard to its conflict of law principles) govern all matters arising under or relating to this agreement. Any liability of the UTS to C&G and third parties for any claims, damages, losses, or costs arising out of or related to acts performed by UTS under this agreement will be governed by the Tennessee Claims Commission Act, Tenn. Code Ann. §§ 9-8-301, et. seq.

**14. SEVERABILITY:**

The provisions of this agreement shall be severable, and the invalidity or unenforceability of any provision shall not affect the remaining provisions. This agreement shall be binding upon and shall inure to the benefit of the parties and their successors and assigns.

**15. ENTIRE AGREEMENT:**

This agreement constitutes the entire agreement between the parties. The terms of this agreement may not be modified except by written instrument signed by the parties or their authorized representatives.

**16. ASSIGNMENT:**

Neither party may assign this agreement, or any right or duty hereunder, or enter into a subcontract for any of the services performed under this agreement, without the prior written approval of an authorized official of both parties.

**17. DEBARMENT:**

Debarment: C&G hereby attests that the following are true statements:

- i. C&G is not currently debarred by the U.S. federal government.
- ii. C&G is not currently suspended by the U.S. federal government.
- iii. C&G is not currently named as an "excluded" supplier by the U.S. federal government.

**18. ILLEGAL IMMIGRANTS:**

Illegal Immigrants: In compliance with the requirements of Tenn. Code Ann. § 12-3-309, C&G hereby attests that it shall not knowingly utilize the services of an illegal immigrant in the United States in the performance of this agreement and shall not knowingly utilize the services of any subcontractor who will utilize the services of an illegal immigrant in the United States in the performance of this agreement.

**19. IRAN DIVESTMENT:**

The requirements of Tenn. Code Ann. § 12-12-101 et. seq., addressing contracting with persons as defined at T.C.A. §12-12-103(5) that engage in investment activities in Iran, are a material provision of this agreement. C&G hereby certifies, under penalty of perjury, that to the best of its knowledge and belief that it is not on the list created pursuant to Tenn. Code Ann. § 12-12-106.

**20. ORDER OF INTERPRETATION:**

The following documents make up this agreement: Special Laundry Rental, Service, and Maintenance Agreement and the Proposal. Notwithstanding anything herein to the contrary, in the event of any inconsistency or conflict among those documents, the following order of precedence will govern: 1) Special Laundry Rental, Service, and Maintenance Agreement; and 2) Proposal.

**21. PREMISES RULES:**

When C&G is physically present on UTS' s property, C&G shall make reasonable efforts to cause its employees and permitted sub-contractors to:

- Avoid alcohol use
- Avoid any illegal drug use
- Avoid smoking
- Comply with all access restriction protocols
- Comply with applicable firearms laws
- Comply with applicable parking regulations

**CALDWELL & GREGORY LLC**  
129 Broad Street Road  
Suite A  
Manakin-Sabot, Virginia 23103

(800) 927-9274  
(804) 784-6100  
(804) 784-7418 (Fax)  
service@caldwellandgregory.com

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**22. RECORDS; AUDIT**

i. Records: C&G shall maintain records for all expenses for which C&G invoices UTS under this agreement. C&G shall maintain its records for at least 3 years and shall maintain its records in accordance with generally accepted accounting principles.

ii. Audit: During the term of this agreement and for 3 years after the last payment from UTS to C&G under this agreement, the State of Tennessee Comptroller or UTS' s internal audit, or both, may audit C&G' s records that relate to this agreement.

iii. Assistance: C&G shall provide UTS with any documentation, access to information, or other assistance necessary for UTS to ensure that C&G complies with its obligations under this agreement.

**23. TAX REGISTRATION:**

In compliance with the requirements of Tenn. Code Ann. § 12-3-306, C&G hereby attests that it has registered with the State of Tennessee' s Department of Revenue for the collection of Tennessee sales and use tax. This registration requirement is a material requirement of this agreement.

**CALDWELL & GREGORY LLC**

**THE UNIVERSITY OF TENNESSEE,  
ON BEHALF OF ITS SOUTHERN CAMPUS**

\_\_\_\_\_  
Signature Date

By: \_\_\_\_\_

Title: \_\_\_\_\_

\_\_\_\_\_  
Signature Date

By: \_\_\_\_\_

Title: \_\_\_\_\_

FED. I.D. #: \_\_\_\_\_



**RESOLUTION TO APPROVE THE BORROWING OF  
MONEY BY ANOTHER METHOD BY AUSTIN PEAY  
STATE UNIVERSITY**

**Recitals**

Whereas, Austin Peay State University (“APSU”) proposes to enter into a contract (the “Contract”) with Ricoh USA, Inc. for a RICOH MPC4504-RM multi-functional device (the “Device”); and

Whereas, the Device was competitively sourced through the US Communities (Sourcewell); and

Whereas, the Device will be installed in the Printing Services department of APSU which provides products and services to the APSU community; and

Whereas, the term of the Contract is for five (5) years at a rate of one hundred and five dollars and sixty-one cents (\$105.61) per month with additional charges of seven one thousandth of a cent (\$0.007) per black and white copy and four one hundredth of a cent (\$0.04) per color copy; and

Whereas, the monthly charge of the Contract includes use of the Device and service therefore for the term of the Contract and includes all supplies and staples as well and, in addition, the Contract can be terminated for convenience upon sixty (60) days’ written notice; and

Whereas, funding for payments of the Contract will be made by APSU with funds from the Printing Services account.

**BE IT RESOLVED BY THE TENNESSEE STATE SCHOOL BOND AUTHORITY:**

1. In accordance with the authority provided by Tennessee Code Annotated Section 49-3-1205(11), the Tennessee State School Bond Authority (the “Authority”) gives its approval to APSU to enter into the Contract.

BE IF FURTHER RESOLVED that all resolutions or parts of resolutions in conflict are repealed, and the resolution shall be effective as of March 28, 2022.

Adopted by the Authority at its meeting on March 28, 2022.

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JASON E. MUMPOWER, SECRETARY  
TENNESSEE STATE SCHOOL BOND AUTHORITY

# Executive Summary

## BACKGROUND

Austin Peay State University proposes to enter into a five-year contract with Ricoh USA, Inc. for a RICOH MPC4504-RM multi-functional device. The agreement includes the device and service for the term on the lease to include all supplies and staples.

The equipment was competitively sourced through the US Communities (Sourcewell) contract 4400003732.

## TERMS

The term is a five (5) years at a rate of \$105.61 per month and 0.007 per black and white copy and 0.04 per color copy. The agreement includes the device and service for the term on the lease to include all supplies and staples.

The multi-function device will be installed in printing services that provides products and services to the university community.

## SOURCE OF FUNDS

The lease will be paid with funds from Printing Services account.

## REQUEST

Austin Peay State University is seeking TSSBA review and approval of the five-year equipment lease.



## ADDENDUM

### **Austin Peay State University's Standard Terms and Conditions.**

1. The Institution is not bound by this Contract until it is approved by the President or her/his designee per APSU Policy 4:002.
2. This Contract may be modified only by a written amendment that has been executed and approved by the appropriate parties as indicated on the signature page of this Contract.
3. The Vendor shall not assign this Contract or enter into a subcontract for any of the services performed under this Contract without obtaining the prior written approval of the University.
4. The Vendor warrants that it has the right to enter into the agreement and to grant the rights set forth herein to the University. The Vendor will defend, subject to the statutory duty of the Tennessee Attorney General, indemnify, and hold Institution harmless against any claim that University's use of the Product in accordance with this Agreement infringes upon any patent, copyright, or other intellectual property right of any third party. Institution agrees to provide prompt written notice of any claim for indemnification.
5. If this contract provides for reimbursement for travel, meals or lodging, such payment shall be in the amount of actual cost/per diem, and shall be expressly subject to the limits and rules set forth in APSU's General Travel Policies and Procedures, Policy No. 4:015.
6. Contractor certifies its compliance with applicable federal and state laws, rules and regulations and APSU policies with respect to Conflict of Interest, including, but not limited to the following:
  - a. Pursuant to T.C.A. § 12-4-103, Contractor acknowledges that it is unlawful for any state official or employee to bid on, sell, or offer for sale, any merchandise, equipment or material, or similar commodity, to the state of Tennessee during the tenure of such official's or employee's office or employment, or for six (6) months thereafter, or to have any interest in the selling of the same to the state;
  - b. Pursuant to APSU's Conflict of Interest Policy 1:001, APSU prohibits purchases of merchandise, equipment, materials or similar commodities from a APSU employee's business or from a family member's business. Family member, as defined by the policy, means a spouse or child dependent or non-dependent of APSU employee, unless otherwise defined by statute;
  - c. Pursuant to APSU's Conflict of Interest Policy 1:001, APSU prohibits service contracts with an individual who is, or within the past six months has been a state employee. Contracts with the employee's spouse, a company or corporation in which a controlling interest is held by any state employee or the employee's spouse shall be considered, for the purpose of applying this rule, to be a contract with said individual;
  - d. The Contractor warrants that no part of the total Contract Amount shall be paid directly or indirectly to an employee or official of the State of Tennessee as wages, compensation, or gifts in exchange for acting as an officer, agent, employee, subcontractor, or consultant to the Contractor in connection with any work contemplated or performed relative to this Contract; and

- e. The Contractor acknowledges, understands, and agrees that this Contract shall be null and void if the Contractor is, or within the past six months has been, an employee of the State of Tennessee or if the Contractor is an entity in which a controlling interest is held by an individual who is, or within the past six months has been, an employee of the State of Tennessee.
7. Non-discrimination. No person on the grounds of disability, age, race, color, religion, sex, national origin, veteran status or any other classification protected by Federal and/or Tennessee State constitutional and/or statutory law shall be excluded from participation in, or be denied benefits of, or be otherwise subjected to discrimination in the performance of this Contract. The Contractor shall, upon request, show proof of such nondiscrimination, and shall post in conspicuous places, available to all employees and applicants, notice of non-discrimination.
8. The parties agree to comply with Titles VI and VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, Executive Order 11246, the Americans with Disabilities Act of 1990 and the related regulations to each. Each party assures that it will not discriminate against any individual including, but not limited to, employees or applicants for employment and/or students because of race, religion, creed, color, sex, age, disability, veteran status or national origin. The parties also agree to take affirmative action to ensure that applicants are employed and that employees are treated during their employment without regard to their race, religion, creed, color, sex, age, disability, veteran status or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection available to employees and applicants for employment.
9. The Vendor, being an independent contractor, agrees to carry adequate public liability and other appropriate forms of insurance, and to pay all taxes incident to this Contract. The Institution shall have no liability except as specifically provided in this Contract.
10. The university is self-insured under the Tennessee Claims Commission Act, Tenn. Code Ann. §§ 9-8-301 et seq., which covers certain tort liability for actual damages of up to \$300,000 per claimant and \$1,000,000 per occurrence.
11. State and Federal Compliance: The Vendor shall comply with all applicable Federal and State laws and regulations in the performance of this Contract.
12. Governing Law: This Contract shall be governed by and construed in accordance with the laws of the State of Tennessee.
13. PCI-DSS Compliance: If Vendor will accept credit or debit cards in its performance under this Agreement, Licensor agrees that it will at all times during the performance of this Agreement comply with current Payment Card Industry Data Security Standards (PCI-DSS standards).
14. Sales and Use Tax: The Vendor shall be registered with or have received an exemption from the Department of Revenue for the collection of Tennessee sales and use tax. This registration requirement is a material requirement of this Contract. The Vendor shall comply, and shall require any subcontractor to comply, with all laws and regulations governing the remittance of sales and use taxes on the sale of goods and services made by the Contractor, or the Contractor's subcontractor.
15. Contract Monitoring. Vendor's Commitment to Diversity: The Vendor shall assist the Institution in monitoring the Contractor's performance, per T.C.A. § 12-3-602 & T.C.A. § 12-3-305, of this commitment by providing, as requested, a quarterly report of participation in the performance of this Contract by small business enterprises and businesses owned by minorities, women, and Tennessee service-disabled veterans. Such reports shall be provided to the Institution in form and substance as required by Institution.

16. The Vendor shall maintain documentation for all charges against the Institution under this Contract. The books, records, and documents of the Contractor, insofar as they relate to work performed or money received under this Contract, shall be maintained for a period of three (3) full years from the date of the final payment and shall be subject to audit at any reasonable time and upon reasonable notice by the Institution, the Comptroller of the Treasury, or their duly appointed representatives. Any financial statements required by this Contract shall be prepared in accordance with generally accepted accounting principles." (Reference T.C.A Code 12-3-602(c))
17. Red Flags and Identity Theft. The Service Provider shall have policies and procedures in place to detect relevant Red Flags that may arise in the performance of the Service Provider's activities under the Agreement, or review the Institution's Red Flags identity theft program and report any Red Flags to Institution.
18. Prohibition of Illegal Immigrants. T.C.A. § 12-3-309 prohibits State entities from contracting to acquire goods or services from any person who knowingly utilizes the service of illegal immigrants in the performance of the contract and by signing this Contract, the Contactor attests, certifies, warrants, and assures that the Contractor shall not knowingly utilize the services of illegal immigrants in the performance of the Contract and will not knowingly utilize the services of any subcontractor, if permitted under the Contract, who will utilize the services of illegal immigrants in the performance of the Contract.
19. Debarment and Suspension. The Vendor certifies, to the best of its knowledge and belief, that it and its principals:
- a. are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal or State department or agency;
  - b. have not within a three (3) year period preceding this Contract been convicted of, or had a civil judgment rendered against them from commission of fraud, or a criminal offense in connection with, obtaining attempting to obtain, or performing a public (Federal, State, or Local) transaction or grant under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification, or destruction of records, making false statements, or receiving stolen property;
  - c. are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or Local) with commission of any of the offenses listed in section b. of this certification; and
  - d. have not within a three (3) year period preceding this Contract had one or more public transactions (Federal, State, or Local) terminated for cause or default.
20. Non-Appropriation/Non-Substitution. (i) If APSU's governing body fails to appropriate sufficient monies in any fiscal period for rentals and other payments coming due under a Schedule to this Lease Agreement in the next succeeding fiscal period for any equipment which will perform services and functions which in whole or in part are essentially the same services and functions performed by the Product covered by any such Schedule, then a "Non-Appropriation" shall be deemed to have occurred. If a Non-Appropriation occurs, then: (A) you must give us immediate notice of such Non-Appropriation and provide written notice of such failure by your governing body at least sixty (60) days prior to the end of the then current fiscal year or if Non-Appropriation has not occurred by such date, immediately upon Non-Appropriation, (B) no later than the last day of the fiscal year for which appropriations were made for the rental due under any Schedule to this Lease Agreement (the "Return Date"), you shall make available to us (or our designee) all, but not less than all, of the Product covered by such Schedule to this Lease Agreement, at your sole expense, in accordance with the terms hereof; and (C) any Schedule to this Lease Agreement shall terminate on the Return Date without penalty or expense to you and you shall not be obligated to pay the

rentals beyond such fiscal year. provided that (x) you shall pay any and all rentals and other payments due up through the end of the last day of the fiscal year for which appropriations were made and (y) you shall pay month-to-month rent at the rate set forth in any such Schedule for each month or part thereof that you fail to make available to us (or our designee) the Product as required herein. (iii) Upon any such Non-Appropriation, upon our request, you will provide an opinion of independent counsel or other legally designated authority (who shall be reasonably acceptable to us), in from reasonably acceptable to us, confirming the Non-Appropriation and providing reasonably sufficient proof of such Non-Appropriation.

21. Iran Divestment Act: The requirements of Tenn. Code Ann. § 12-12-101 et. seq., addressing contracting with persons with investment activities in Iran, shall be material provision of this Contract. The Contractor agrees, under penalty of perjury, that to the best of its knowledge and belief that it is not on the list created pursuant to Tenn. Code Ann § 12-12-106.
22. The vendor shall be paid, upon the submission of invoices or vouchers, the prices stipulated herein for supplies delivered and accepted or services rendered in completion, less deductions, if any, in accordance with the provisions of the Tennessee Prompt Pay Act of 1985.
23. Termination for Convenience. The Institution may terminate this Contract without cause and for any reason. The Institution shall give the Contractor at least, sixty (60) days written notice before the effective termination date. The Contractor shall be entitled to compensation for all conforming goods delivered and accepted by the Institution or for satisfactory, authorized services completed as of the termination date. In no event shall the Institution be liable to the Contractor for compensation for any goods neither requested nor accepted by the Institution or for any services neither requested by the Institution nor satisfactorily performed by the Contractor. In no event shall the Institution's exercise of its right to terminate this Contract for convenience relieve the Contractor of any liability to the Institution for any damages or claims arising under this Contract.
24. Termination for Cause. If the Contractor fails to perform its obligations under this Contract in a timely or proper manner, or if the Contractor materially violates any terms of this Contract ("Breach Condition"), the Institution shall have the right to immediately terminate the Contract and withhold payments in excess of fair compensation for completed goods and/or services, Notwithstanding the above, the Contractor shall not be relieved of liability to the Institution for damages sustained by virtue of any breach condition and the Institution may seek other remedies allowed at law or in equity for breach of this contract.

## U.S. Communities Product Schedule

**Product Schedule Number:**  
**Master Lease Agreement Number: 1027676**

This U.S. Communities Product Schedule (this "Schedule") is between Ricoh USA, Inc. ("we" or "us") and AUSTIN PEAY STATE UNIVERSITY, as customer or lessee ("Customer" or "you"). This Schedule constitutes a "Schedule," "Product Schedule," or "Order Agreement," as applicable, under the U.S. Communities Master Lease Agreement (together with any amendments, attachments and addenda thereto, the "Lease Agreement") identified above, between you and \_\_\_\_\_ . All terms and conditions of the Lease Agreement are incorporated into this Schedule and made a part hereof. If we are not the lessor under the Lease Agreement, then, solely for purposes of this Schedule, we shall be deemed to be the lessor under the Lease Agreement. It is the intent of the parties that this Schedule be separately enforceable as a complete and independent agreement, independent of all other Schedules to the Lease Agreement.

### CUSTOMER INFORMATION

AUSTIN PEAY STATE UNIVERSITY				Jana Gilbert			
Customer (Bill To)				Billing Contact Name			
601 COLLEGE ST				PO BOX 4635			
Product Location Address				Billing Address (if different from location address)			
CLARKSVILLE	MONTGOMER	TN	37044-0001	CLARKSVILLE	MONTGOME	TN	37044-0001
City	County	State	Zip	City	County	State	Zip
Billing Contact Telephone Number (931)221-7210			Billing Contact Facsimile Number		Billing Contact E-Mail Address gilbertj@apsu.edu		

### PRODUCT/EQUIPMENT DESCRIPTION ("Product")

Qty	Product Description: Make& Model	Street Address/City/State/Zip
1	RICOH MPC4504-RM CONFIGURABLE PTO MODEL	601 COLLEGE ST, CLARKSVILLE, TN, 37044-0001, US

### PAYMENT SCHEDULE

<b>Minimum Term</b> (months)	<b>Minimum Payment</b> (Without Tax)	<b>Minimum Payment Billing Frequency</b>	<b>Advance Payment</b>
60	\$105.61	<input checked="" type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Other: _____	<input type="checkbox"/> 1 <sup>st</sup> Payment <input type="checkbox"/> 1 <sup>st</sup> & Last Payment <input type="checkbox"/> Other: _____

Sales Tax Exempt:  YES (Attach Exemption Certificate)

Customer Billing Reference Number (P.O. #, etc.)

Addendum(s) attached:  YES (check if yes and indicate total number of pages: )

### TERMS AND CONDITIONS

- The first Payment will be due on the Effective Date. If the Lease Agreement uses the terms "Lease Payment" and "Commencement Date" rather than "Payment" and "Effective Date," then, for purposes of this Schedule, the term "Payment" shall have the same meaning as "Lease Payment," and the term "Effective Date" shall have the same meaning as "Commencement Date."
- You, the undersigned Customer, have applied to us to rent the above-described Product for lawful commercial (non-consumer) purposes. **THIS IS AN UNCONDITIONAL, NON-CANCELABLE AGREEMENT FOR THE MINIMUM TERM INDICATED ABOVE**, except as otherwise expressly provided in any provision of the Lease Agreement. If we accept this Schedule, you agree to rent the above Product from us, and we agree to rent such Product to you, on all the terms hereof, including the terms and conditions of the Lease Agreement. **THIS WILL ACKNOWLEDGE THAT YOU HAVE READ AND UNDERSTAND THIS SCHEDULE AND THE LEASE AGREEMENT AND HAVE RECEIVED A COPY OF THIS SCHEDULE AND THE LEASE AGREEMENT.**



3. Additional Provisions (if any) are: Per US Communities Contract 4400003732

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\_\_\_\_\_  
*Initials*

**THE PERSON SIGNING THIS SCHEDULE ON BEHALF OF THE CUSTOMER REPRESENTS THAT HE/SHE HAS THE AUTHORITY TO DO SO.**

<b>CUSTOMER</b> By: <b>X</b> _____ Authorized Signer Signature Printed Name: _____ Title: _____ Date: _____	<b>Accepted by: RICOH USA, INC.</b> By: <b>X</b> _____ Authorized Signer Signature Printed Name: _____ Title: _____ Date: _____
---	---







ORDER AGREEMENT

Sales Type: LEASE

EQUIPMENT BILL TO INFORMATION			
<b>Customer Legal Name:</b> AUSTIN PEAY STATE UNIVERSITY			
<b>Address Line 1:</b> PO BOX 4635		<b>Contact:</b> Jana Gilbert	
<b>Address Line 2:</b>		<b>Phone:</b> (931)221-7210	
<b>City:</b> CLARKSVILLE		<b>E-mail:</b> gilbertj@apsu.edu	
<b>ST/Zip:</b> TN/37044-0001	<b>County:</b> MONTGOMERY	<b>Fax:</b>	

Check all that apply:

- PO Included PO#
- PS Service (Subject to and governed by additional Terms and Conditions)
- TS PO# (if applicable)
- IT Service (Subject to and governed by additional Terms and Conditions)
- Sales Tax Exempt (Attach Valid Exemption Certificate)
- Fixed Rate Service Term 60 Months
- Syndication
- Add to Existing Service Contract #

SERVICE INFORMATION			
SERVICE BILL TO INFORMATION			
<b>Customer Legal Name:</b> AUSTIN PEAY STATE UNIVERSITY			
<b>Address Line 1:</b> PO BOX 4635		<b>Contact:</b> Jana Gilbert	
<b>Address Line 2:</b>		<b>Phone:</b> (931)221-7210	
<b>City:</b> CLARKSVILLE		<b>E-mail:</b> gilbertj@apsu.edu	
<b>ST/Zip:</b> TN/37044-0001	<b>County:</b> MONTGOMERY	<b>Fax:</b>	
<b>Service Term (Months)</b>	<b>Base Billing Frequency</b>	<b>Overage Billing Frequency</b>	<b>Service Type</b>
60	QUARTERLY	QUARTERLY	GOLD

SHIP TO INFORMATION				
Customer Name	Address Line 1 Address Line 2	City ST/Zip County	Contact	Phone E-mail Fax
AUSTIN PEAY STATE UNIVERSITY	601 COLLEGE ST Print Shop	CLARKSVILLE TN/37044-0001 MONTGOMERY	Jana Gilbert	(931)221-7210 gilbertj@apsu.edu

PRODUCT INFORMATION							
Product Description	QTY	Service Level	Total B/W Allowance	B/W Ovg	Total Color Allowance	Color Ovg	Service Base
			QUARTERLY		QUARTERLY		QUARTERLY
RICOH MPC4504-RM CONFIGURABLE PTO MODEL	1	GOLD	0	0.007	0	0.04	\$0.00

30349009



**BASIC CONNECTIVITY / PS / IT SERVICES INFORMATION**

<b>BASIC CONNECTIVITY / PS / IT Services Description</b>	<b>Quantity</b>
RETURN CHARGE - SEGMENT 2 OR GREATER DEVICES	1
TS NETWORK & SCAN - SEG BC4	1
TS-TRAINING ADVANCED HARDWARE ONLY	4

**ORDER TOTALS**

<b>Service Type Offerings:</b>	<b>Product Total:</b>	
<b>Gold:</b> Includes all supplies and staples. Excludes paper.	<b>BASIC CONNECTIVITY / PS / IT Services :</b>	
<b>Silver:</b> Includes all supplies. Excludes paper and staples.	<b>BuyOut After Promotions:</b>	
<b>Bronze:</b> Parts and labor only. Excludes paper, staples and supplies.	<b>Grand Total:</b>	
<b>Additional Provisions: <i>Insert ANY additional provisions here</i></b>	<b>(Excludes Tax)</b>	
Per US Communities Contract 4400003732		

<b>Accepted by Customer</b>	<b>Accepted: Ricoh USA, Inc.</b>
Authorized Signature:	Authorized Signature:
Printed Name:	Printed Name:
Title:	Title:
Date	Date



## EQUIPMENT REMOVAL/BUYOUT AUTHORIZATION

Customer Name:	AUSTIN PEAY STATE UNIVERSITY			Phone:	(931)221-7210
Contact Name:	Jana Gilbert			City:	CLARKSVILLE
Address:	601 COLLEGE ST			Fax/Email:	gilbertj@apsu.edu
State:	TN	Zip:	37044-0001		

Make	Model	Serial Number
	MPC4504	G716M760785/C83149525

**This Authorization applies to the equipment identified above and to the following Removal/Buy Out Option**

This Authorization will confirm that Customer desires to engage Ricoh USA, Inc. ("Ricoh") to pick-up and remove certain items of equipment that are currently (i) owned by Customer or (ii) leased from Ricoh or other third party (as specified below), and that you intend to issue written or electronic removal requests (whether such equipment is identified in this Authorization, in a purchase order, in a letter or other written form) to Ricoh from time to time for such purpose. Such removal request will set forth the location, make, model and serial number of the equipment to be removed by Ricoh. By signing below, you confirm that, with respect to every removal request issued by Customer (1) Ricoh may rely on the request, (2) the request shall be governed by this Authorization, and (3) Ricoh may accept this Authorization by either its signature or by commencing performance (e.g. equipment removal, initiating Services, etc.). Each party agrees that electronic signatures of the parties on this Authorization will have the same force and effect as manual signature. Notwithstanding the foregoing, the parties acknowledge and agree that Ricoh shall have no obligation to remove, delete, preserve, maintain or otherwise safeguard any information, images or content retained by, in or on any item of equipment serviced by Ricoh, whether through a digital storage device, hard drive or similar electronic medium ("Data Management Services"). If desired, Customer may engage Ricoh to perform such Data Management Services at its then-current rates. Notwithstanding anything in this Authorization to the contrary, (i) Customer is responsible for ensuring its own compliance with legal requirements pertaining to data retention and protection, (ii) it is the Customer's sole responsibility to obtain advice of competent legal counsel as to the identification and interpretation of any relevant laws and regulatory requirements that may affect the customer's business or data retention, and any actions required to comply with such laws, (iii) Ricoh does not provide legal advice or represent or warrant that its services or products will guarantee or ensure compliance with any law, regulation or requirement, and (iv) the selection, use and design of any Data Management Services, and any and all decisions arising with respect to the deletion or storage of any data, as well as any loss of data resulting therefrom, shall be the sole responsibility of Customer. ~~Customer shall indemnify and hold harmless Ricoh and its subsidiaries, directors, officers, employees and agents from and against any and all costs, expenses, liabilities, claims, damages, losses, judgments or fees (including reasonable attorneys' fees) (collectively, "Losses") arising therefrom or related thereto.~~

**Equipment Removal (Leased by Customer).** In addition to the terms and conditions set forth above, the following terms and conditions shall apply for equipment removals of equipment leased by Customer: Except for the obligations of Ricoh to pick up and remove the identified equipment, Ricoh does not assume any obligation, payment or otherwise, under any lease agreement, which shall remain Customer's sole responsibility. ~~As a material condition to the performance by Ricoh, Customer hereby releases Ricoh from, and shall indemnify, defend and hold Ricoh harmless from and against, any and all claims, liabilities, costs, expenses and fees arising from or relating to any breach of Customer's representations or obligations in this Authorization or of any obligation owing by Customer under its lease agreement.~~

~~Any liability of the university to Contractor and third parties for any claims, damages, losses, or costs arising out of or related to acts performed by the university under this agreement will be governed by the Tennessee Claims Commission Act, Tenn. Code Ann. §§ 9-8-301, et. seq. In the event that Supplier files a lawsuit against University, Supplier will only file a lawsuit in the Tennessee Claims Commission.~~

**CUSTOMER**

Signature: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

**RICOH USA, INC.**

Signature: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

\_\_\_\_\_  
Initials

