University of Alabama System
Board Rule 415 (2/2005)
Board Submittal Checklist Criteria

*** Board Submittal Checklist No. 1**
Capital Project – Stage I Submittal /1
(General Information Package)

Campus: The University of Alabama
Project Name: Anechoic Chamber
Meeting Date: September 14 – 15, 2017

* ☒ 1. Completed Board Submittal Checklist No.1
☒ 2. Transmittal Letter to Chancellor from Campus President requesting the project be placed on the agendas for the forthcoming Physical Properties Committee and Board of Trustees (or Executive Committee) meetings
☒ 3. Proposed Board Resolution requesting approval of Stage I submittal by UA Board of Trustees
☒ 4. Campus correspondence/photos providing supporting project information
☒ 5. Completed Executive Summary – Proposed Capital Project /2
☒ 6. Completed Supplemental Project Information Worksheet – Attachment "K", Board Rule 415
☒ 7. Campus map(s) showing Project site
☐ 8. Business Plan

Prepared by: Rachel Caver

Approved by: Tim Leopard

/1 Reference Tab 3F – Board Rule 415 Instructional Guide
/2 Reference Tab 3E – Board Rule 415 Instructional Guide

* Basic documents required for this Board Submittal Package. Include other supporting materials, correspondence, etc., as may be required to fully describe or illustrate project being submitted for approval to Physical Properties Committee and Board of Trustees.

THE UNIVERSITY OF
ALABAMA®

Office of the
President

August 17, 2017

Chancellor Ray Hayes
The University of Alabama System
500 University Boulevard East
Tuscaloosa, Alabama 35401

Dear Chancellor Hayes:

I am pleased to send to you for consideration by the Board of Trustees at its September 15, 2017 meeting the following resolution:

- Board Item – Action: Stage I Submittal: Anechoic Chamber

Please contact us if you have questions or need additional information.

Sincerely,

Stuart R. Bell
President

Enclosure

203 Rose Administration Building | Box 870100 | Tuscaloosa, AL 35487-0100 | 205-348-5100 | Fax 205-348-7238
president@ua.edu | http://www.ua.edu

RESOLUTION

ANECHOIC CHAMBER

WHEREAS, on February 3, 2017 the Board of Trustees of the University of Alabama ("Board") approved the establishment of the Remote Sensing Center to support research in remote sensing in order to address the pressing challenge of ensuring access to adequate clean water in the 21st Century; and

WHEREAS, in accordance with Board Rule 415, The University of Alabama ("University") is requesting approval of a Stage I submittal for the Anechoic Chamber project ("Project") to be located at 720 - 2nd Street, within the existing Alabama Institute for Manufacturing Excellence building (AIME) to support the Remote Sensing Center and other research efforts; and

WHEREAS, the Project location and program have been reviewed and are consistent with the University Campus Master Plan, University Design Standards and the principles contained therein; and

WHEREAS, the Project will be funded from University Funds in the amount of $5,451,626; and

WHEREAS, the preliminary budget for the Project is as stipulated below:

BUDGET:		PRELIMINARY
Construction	$	3,354,000
Furniture, Fixtures and Equipment	$	1,000,000
Contingency* (10%)	$	335,400
UA Project Management Fee** (3%)	$	110,682
Architect/Engineer Fee - Programming	$	71,640
Architect/Engineer Fee*** (7.6%)	$	418,630
Other Fees and Services (testing, advertising, printing)	$	161,274
TOTAL PROJECT COST	**$**	**5,451,626**

*Contingency is based on 10% of construction.
**UA Project Management Fee is based on 3% of construction and contingency.
***Architect/Engineer Fee is based on 7.6% of construction, plus a 1.25 renovation factor, plus $100,000 for reimbursable expenses and specialty consultants.

NOW, THEREFORE, BE IT RESOLVED by The Board of Trustees of The University of Alabama that:

1. The Stage I submittal package for the Project is hereby approved.

2. The preliminary budget for the Project as stipulated above is hereby approved.

Division of
Financial Affairs

MEMO

August 16, 2017

To: Stuart R. Bell

From: Lynda Gilbert

Subject: Board Item – Action: Stage I Submittal: Anechoic Chamber

Pursuant to Board Rule 415, The University of Alabama ("University") is requesting approval from The Board of Trustees of The University of Alabama ("Board") of a Stage I submittal for the Anechoic Chamber project ("Project") to be located at 720 - 2nd Street, within The Alabama Institute for Manufacturing Excellence (AIME) building high bay area.

The proposed Project will support the research efforts of the Remote Sensing Center and other research initiatives. The proposed Project will consist of renovations within the High Bay area of the AIME Building to install a new Anechoic Chamber of approximately 32.5 feet wide, 61.25 feet long and 30.25 feet in height, consisting of approximately 1,991 square feet. Additionally, a control room and office of approximately 192 square feet each will be included, resulting in a total of 2,375 square feet of renovated space for the Project.

The Project will be funded from University funds in the amount of $5,451,626. As appropriate, and in an effort to offset costs, The University is pursuing several grant opportunities, which are currently under consideration by funding agencies.

This Project location and program have been reviewed and are consistent with the Campus Master Plan, University Design Standards, and the principles contained therein. I have attached a Resolution, Executive Summary, Attachment K, Project Summary and Location Map for your review. Subject to your approval, I recommend this item be forwarded to the Chancellor for inclusion as an Action Item on the agenda of the Physical Properties Committee at the Board of Trustees meeting scheduled for September 14 – 15, 2017.

LG/ccj

pc w/atchmts: Michael Rodgers
Michael Lanier
Tim Leopard
Dan Wolfe
Tom Love
Ed Whatley

271 Rose Administration | Box 870142 | Tuscaloosa, AL 35487 | 205-348-4530 | Fax 205-348-9633

EXECUTIVE SUMMARY
PROPOSED CAPITAL PROJECT

BOARD OF TRUSTEES SUBMITTAL

Meeting Date: September 14 – 15, 2017

CAMPUS: The University of Alabama, Tuscaloosa, Alabama

PROJECT NAME: **Anechoic Chamber**

PROJECT LOCATION: 720-2nd Street
The Alabama Institute for Manufacturing Excellence (AIME)

ARCHITECT: To Be Determined

THIS SUBMITTAL:	**PREVIOUS APPROVALS:**
☒ Stage I	
☐ Stage II	
☐ Stage III	
☐ Stage IV	

PROJECT TYPE	**SPACE CATEGORIES**	**PERCENTAGE**	**GSF**
☐ Building Construction			
☐ Building Demolition			
☒ Building Renovation		100%	2,375
☐ Building Addition			
☐ Campus Infrastructure			
☐ Equipment			
☐ Other			
	TOTAL	**100%**	**2,375**

BUDGET	**Preliminary**
Construction	$ 3,354,000
Furniture, Fixtures, and Equipment	$ 1,000,000
Contingency* (10%)	$ 335,400
UA Project Management Fee** (3%)	$ 110,682
Architect/Engineer Fee – Programming	$ 71,640
Architect/Engineer Fee*** (7.6%)	$ 418,630
Other Fees and Services (testing, advertising, printing)	$ 161,274
TOTAL PROJECT COST	**$ 5,451,626**

*Contingency is based on 10% of construction.
**UA Project Management Fee is based on 3% of construction and contingency.
***Architect/Engineer Fee is based on 7.6% of construction, plus a 1.25 renovation factor, plus $100,000 for reimbursable expenses and specialty consultants.

ESTIMATED ANNUAL OPERATING AND MAINTENANCE (O&M) COSTS:

(Utilities, Housekeeping, Maintenance, Insurance, Other)

Per GSF:	$	*N/A
TOTAL ESTIMATED ANNUAL O&M COSTS:	**$**	***N/A**

*This is an enclosure within existing space therefore there should be no additional O & M cost as the current facility O & M cost are already budgeted.

FUNDING SOURCE:

Capital Outlay:

University funds	$	5,451,626
O&M Costs: University annual operating funds	$	*N/A

*The AIME facility, in which the Anechoic Chamber will be located, is an existing Educational and General facility; as such, ongoing O&M costs are already included in the annual operating budget.

NEW EQUIPMENT REQUIRED:

N/A

RELATIONSHIP & ENHANCEMENT OF CAMPUS PROGRAMS:

The Anechoic Chamber project ("Project") will support courses and projects in radar engineering, an important component of the Electrical and Computer Engineering and Aerospace Engineering and Mechanics programs at The University of Alabama ("University"). This Project will enable a major new research and education capability for the University inclusive of the use of radio frequency devices for remote sensing.

This Project will directly support the Remote Sensing Center (RSC) - an interdisciplinary research center in basic and applied research in sensing soil moisture, snow, and ice. The Project will allow testing of radar and electronics components of unmanned aerial vehicles and potentially automobiles.

This Project is directly in line with the University's mission to advance the intellectual and social condition of the people of the state of Alabama, the nation, and the world through these programs that contain key elements of service, research, and teaching. The Project is also in direct alignment with the research focus of the strategic plan.

ATTACHMENT NO. 1
Project: Anechoic Chamber
BOT Submittal: Stage I
Meeting Date: September 14 – 15 2017

Project Summary

ANECHOIC CHAMBER

The Anechoic Chamber[1] project ("Project") will entail the construction of an anechoic testing facility within the existing Alabama Institute for Manufacturing Excellence (AIME) high bay area located at 720 – 2nd Street. This Project will facilitate courses and projects in radar engineering, an important component of The University of Alabama's ("University") Electrical and Computer Engineering and Aerospace Engineering and Mechanics programs, allowing testing of radar and electronics components of unmanned aerial vehicles and automobiles.

The Project will specifically support the research efforts of the Remote Sensing Center by allowing the testing of radar and electronics components of unmanned aerial vehicles for radio frequency (RF) and electromagnetic waves (EM). Small automobiles will also be able to be tested.

Exterior dimensions of the Anechoic Chamber will be approximately 32.5 feet wide, 61.25 feet long and 30.25 feet in height consisting of approximately 1,991 square feet and will be installed in the High Bay area. Additionally, both a control room and an office of approximately 192 square feet each will be included in the Project.

The existing AIME high bay area will be modified including providing a floor recess so that items being tested can be rolled into the chamber. There will be no changes to the exterior appearance of the AIME facility.

[1] An anechoic chamber is a room designed to both externally and internally isolate and absorb either sound, radio frequency, or electromagnetic waves so they do not interfere with what is being tested.

Attachment K to Board Rule 415

Supplemental Project Information Worksheet
Annual Capital Development Plan

FY: 2016-2017

Project Name/Category: Anechoic Chamber
720-2nd Street
The Alabama Institute for Manufacturing Excellence (AIME)
High Bay Area
Tuscaloosa, Alabama
Campus: The University of Alabama

1. Will this Project increase the current space inventory on campus or replace existing space?

☐ increase space inventory	_____	% increase	_____	GSF
☐ replace space inventory	_____	% replacement	_____	GSF
☒ renovation of existing space only			2,375	GSF

The Anechoic Chamber project ("Project") will consist of the installation of an approximately 2,375 square foot anechoic chamber, an office, and observation/control room within the footprint of the existing AIME high bay area.

2. If this Project will replace existing space inventory, how will vacated space be utilized or assigned after this Project is completed?

Comments:

Not applicable.

3. Is the proposed Project location consistent with the Campus Master Plan and University Design Standards and the principles contained therein?

☒ Yes ☐ No, A Campus Master Plan Amendment Is Required

If Campus Master Plan amendment required, explain:

4. Provide information on classification of new space provided by this Project and latest utilization data on similar type space on campus.

Proposed New Space/Facilities					
Classification		**Number** (Spaces/Rooms)	**Capacity** (Persons)	**Area** (NASF)	**Existing Space Utilization Data** (See Notations)
100	**Classroom Facilities**				
200	**Laboratory Facilities**				
	250 Research/Non-class Laboratory	1		1,991	
	255 Research/Non-class Laboratory Service	1		192	
300	**Office Facilities**				
	310 Office	1		192	
400	**Study Facilities**				
500	**Special Use Facilities**				
600	**General Use Facilities**				
700	**Support Facilities**				
800	**Health Care Facilities**				
900	**Residential Facilities**				
000	**Unclassified Facilities**				

Comments/Notations:

This Project will consist of the installation of an anechoic chamber within the footprint of the existing AIME high bay. The existing high bay is underutilized for its intended purpose; therefore, this Project will enhance the utilization of the space.

Data reported on latest fiscal year data available.
Utilization factor based on Scheduled Operating Hours at each Campus – outlined below in notations.

5. How will this Project enhance existing/new programs and undergraduate/graduate enrollments?

Estimated new Funds from Tuition/Programs/Grants **$** 3,000,000* Yr.
*The University of Alabama ("University") has submitted several grant proposals, which are currently under consideration by funding agencies and there are active conversations ongoing with them.

Comments:

This Project will directly support the Remote Sensing Center (RSC) – an interdisciplinary research center in basic and applied research in the area of sensing soil moisture, snow, and ice. The Project will allow testing of radar and electronics components of unmanned aerial vehicles and potentially automobiles.

This Project will support courses and projects in radar engineering, an important component of University's Electrical and Computer Engineering and Aerospace Engineering and Mechanics programs.

This Project is directly in line with the University's strategic plan and mission to advance the intellectual and social condition of the people of the state of Alabama, the nation, and the world through these programs that contain key elements of service, research, and teaching. The project is also in direct alignment with the research focus of the strategic plan.

6. Has a facility user group been established to provide input for planning, programming, and design purposes? ☒ Yes ☐ In-Progress

If yes, list key members of user group:

Dr. Prasad Gogineni, Professor, Electrical and Computer Engineering
Dr. John Wiest, Associate Dean for Research, College of Engineering
Dr. Stephen Yan
Dr. Charles O'Neill, Assistant Professor, Aerospace Engineering and Mechanics
Dr. Dan Daly, Director of AIME
Dr. Carl Pinkert, Vice President of Research
Garrett Goodman, Staff Architect
Ed Whatley, Project Manager
Tom Love, Assistant Vice President for Construction Administration

7. Source(s) of funding for Total Project Development Costs.

Source(s)	New Funds (FY2016-2017)	Reserves	Status/7
Tuition			
Student Fees			
Investment Income			
Auxiliary Income • External • Internal			
Education Sales/Services • External • Internal			
Direct Grants			
Gifts			
Bonds			
Existing Net Assets			
Other – University funds	$5,451,626		Pending
Totals	**$5,451,626**		**Pending**

/7 Approved, allocated, pending

Comments:

This Project will be funded from University funds in the amount of $5,451,626. The University is pursuing several grant opportunities, which are currently under consideration by funding agencies.

8. Estimate of operations and maintenance (O&M) costs for the initial occupancy year and projections for succeeding five (5) year period.

Operations and Maintenance (O&M) Annual Costs Projections			
Expense	**FY 2017- 2018 Base Data** /8	**First Full /YR Occupancy FY 2018**	**Successive Five (5) Year Projections** /9
Maintenance			
Elevator Service			
Building Repairs			
Building Services			
Electric, Natural Gas, Steam			
Chilled Water			
Water and Sewer			
Insurance			
Safety Support			
Operations Staff Support Funding			
Other –			
Totals			

/8 Latest Fiscal Year Data used as Base Year for Projections
/9 Combined Costs for next Five (5) Years of Occupancy

Comments:

The AIME facility, in which the Anechoic Chamber will be located, is an existing Educational and General facility; as such, ongoing O&M costs are already included in the annual operating budget.

9. Source of funds for projected ongoing operations and maintenance (O&M) costs for this project.

Source(s)	Occupancy Yr. /9 (FY 2017-2018)	Future Years /10	Status /7
Tuition			
Student Fees			
Investment Income			
Auxiliary Income • External • Internal			
Educational Sales & Services • External • Internal			
Direct Grant(s)			
Reallocated Funds /11			
Gifts			
Other			
Total/YR			

/9 Initial Full Yr of Occupancy
/10 Next Five (5) Yrs Occupancy
/11 Funds Reallocated from other sources
/7 Approved, allocated, pending

Comments:

The AIME facility, in which the Anechoic Chamber will be located, is an existing Educational and General facility and accordingly O&M costs are already budgeted.

Ongoing O&M costs will be funded from the University's annual operating fund.

10. Are development expenditures for this Project being used to reduce the current deferred maintenance/facilities renewal liabilities for the Campus?

$ N/A **N/A** % of Total Development Costs

Comments:

N/A

11. What other development alternatives were considered in the planning process for this Project? /13

Comments:

The option of constructing a new space was considered; however, doing so would be cost prohibitive and the existing AIME high bay space was underutilized.

The space in AIME was identified as the only possible existing space on campus with suitable dimensions to contain the anechoic chamber and already provides the necessary support infrastructure

/13 Renovation vs. new construction, adaptive reuse of underutilized buildings, etc.

12. Explain how the project will promote adequacy of campus facilities in relation to the University's Mission and scope of programs and/or services:

Comments:

The Project will enable a major new research and education capability for The University of Alabama inclusive of the use of radio frequency devices for remote sensing. Specifically, the anechoic chamber will enable development and testing of aircraft and satellite based radar sensors for detection of snow and ice and provide critical data for the National Water Center, thereby supporting the research activities of the Remote Sensing Center and the Alabama Water Institute. In addition, the Project will enable development and testing of vehicle-based sensors for connected and autonomous vehicle research, thereby supporting the work of the Alabama Transportation Institute.

13. How does the project correlate to the University's strategic goals?

Comments:

This Project directly supports the University's goal of increasing productivity and innovation in research and scholarship that impacts economic and societal development.

14. What would be the immediate impact on campus programs and enrollment if this project is not approved?

Comments:

The Project is essential to the work of the new Remote Sensing Center, a major element of the University's plan for working with and supporting the National Water Center.

Opportunities for basic and applied research will not be able to be provided.

LOCATION MAP