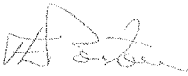


MICHIGAN STATE
U N I V E R S I T Y

August 29, 2012

MEMORANDUM

To: Trustee Finance Committee

From: Fred L. Poston 

Subject: **Project Approval - Authorization to Proceed**
Facility for Rare Isotope Beams - Building Structure

RECOMMENDATION

BE IT RESOLVED that the Trustee Finance Committee recommends that the Board of Trustees authorize the Administration to proceed with the project entitled Facility for Rare Isotope Beams - Building Structure, and to approve a budget of \$55,000,000.

BACKGROUND

Program Need:

The Facility for Rare Isotope Beams (FRIB) will be a new national user facility for nuclear science, funded by the Department of Energy Office of Science (DOE-SC), Michigan State University, and the State of Michigan. FRIB will be owned and operated by Michigan State University (MSU). FRIB will provide intense beams of rare isotopes (that is, short-lived nuclei not normally found on earth). FRIB will enable scientists to make discoveries about the properties of these rare isotopes in order to better understand the physics of nuclei, nuclear astrophysics, fundamental interactions, and application for society. To accommodate the planned construction schedule and eventually house the program, the building enclosure is now required.

Description of the Project:

The FRIB project is located at the corner of Wilson Road and Bogue Street in the central academic district. This project involves building the exterior structures (exterior walls, roof) of the target high bay, linear accelerator support building, cryoplant building, and ECR (Electron Cyclotron Resonance) area in the location directly south of the existing Cyclotron Building. A variance to the MSU zoning ordinance was detailed in the FRIB Phase I Site Preparation and Excavation resolution approved by the Board on January 27, 2012.

The FRIB building structure will encroach into the current Bogue Street location; as a result, a section of Bogue Street will need to be relocated or moved. It is anticipated that this action will take place at the October Board meeting.



OFFICE OF THE
VICE PRESIDENT FOR
FINANCE AND
OPERATIONS

Fred L. Poston
Vice President and
Treasurer

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The Architect/Engineer is SmithGroup, and the Construction Manager is Barton Malow.

Based on an assessment of the factors stated in the Project Planning and Approval process concerning Project Labor Agreements (PLA), the Vice President for Finance and Operations and Treasurer has determined that a PLA would not be required for this project.

Communication Feedback:

The campus community was given opportunities to provide feedback during the planning phase and any concerns have been addressed in the project design.

The Office of Campus Planning and Administration has reviewed this project and found it to be consistent with the Campus Master Plan and Planning Principles. The Campus Infrastructure Planning Work Group also supports the recommendation to proceed with the project.

As construction proceeds, the schedule will be reviewed with the campus community.

Project Cost and Timetable:

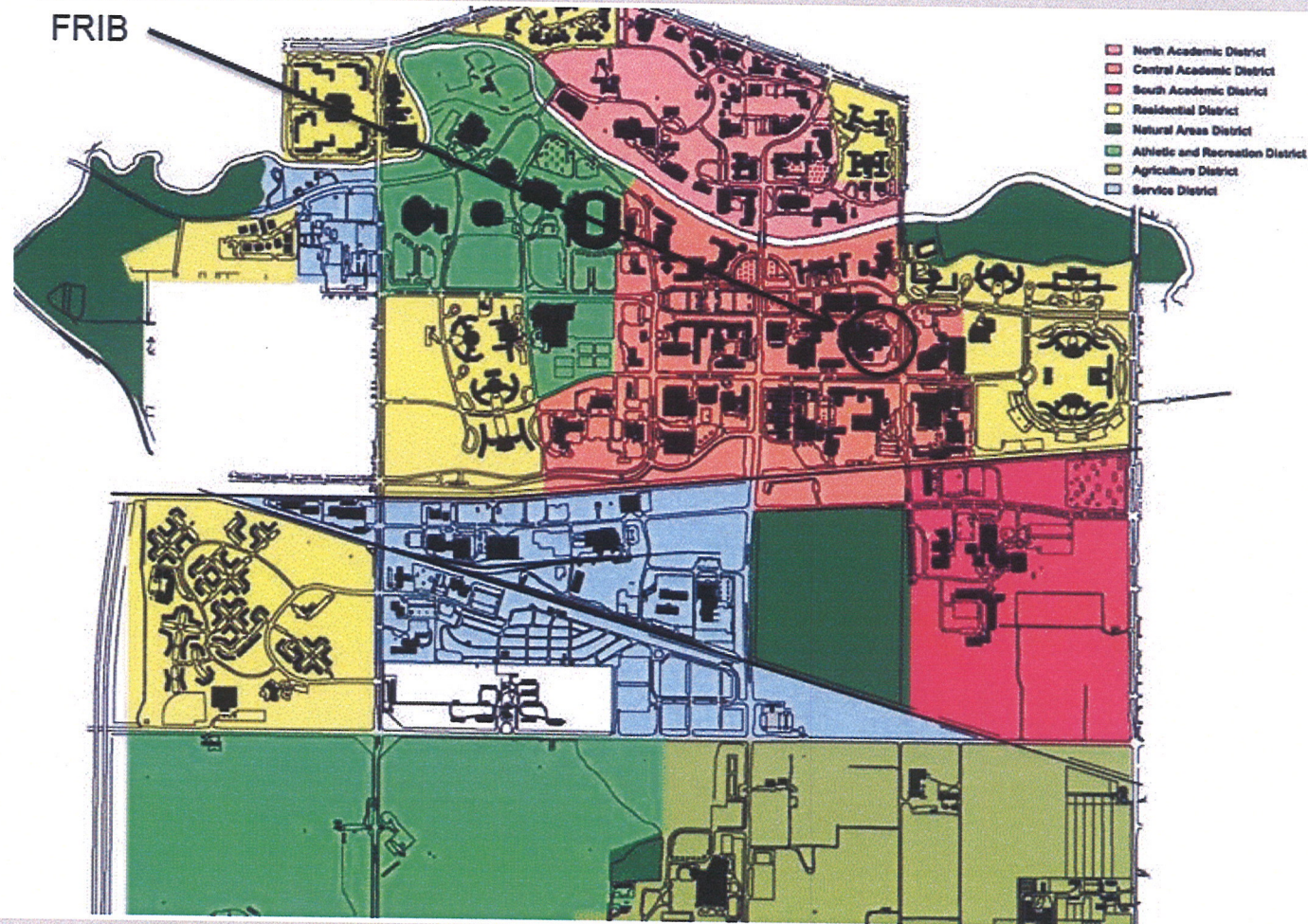
The budget for this Construction Manager project is \$55,000,000 which is being funded by a combination of DOE-SC funding, appropriations from the State of Michigan, and MSU financing, including tax-exempt and/or taxable debt.

Construction is planned to begin in October 2012 and will be substantially complete by June 2016, with final completion by December 2021.

In the unlikely event that future appropriations are not made for this project, the cost to cancel this contract for building structure would be paid for by funding already approved by Department of Energy (DOE) and the State of Michigan.

cc: R. Flinn, M. Haas, J. Kacos, G. Klein, B. Kranz, B. Latta, K. Lindahl,
M. McCabe, J. Mumma, R. Nestle, D. Quinney, T. Glasmacher, B. Bull,
C. Grubbe, K. Caron, L. Adams

FRIB Building Structure

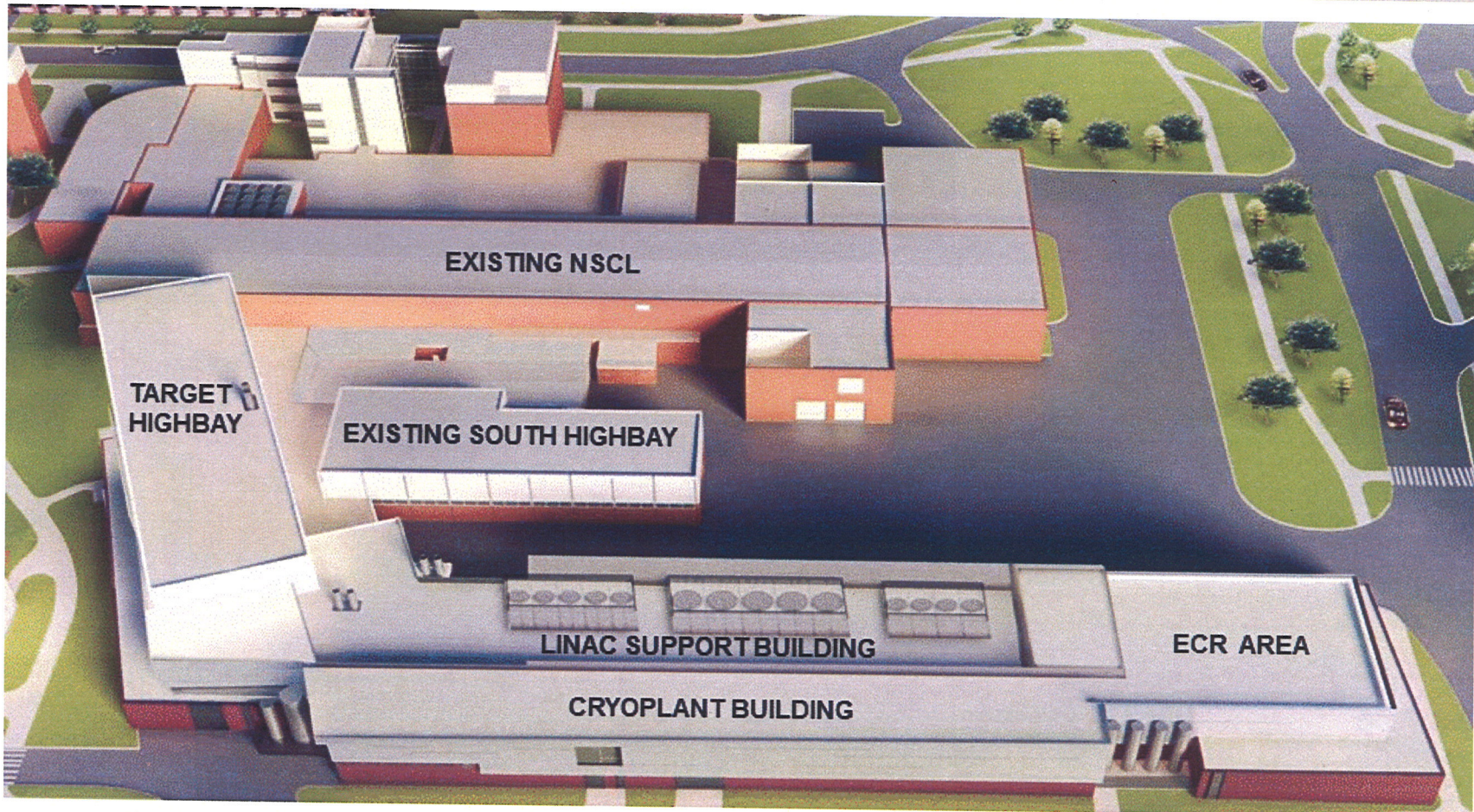


FRIB

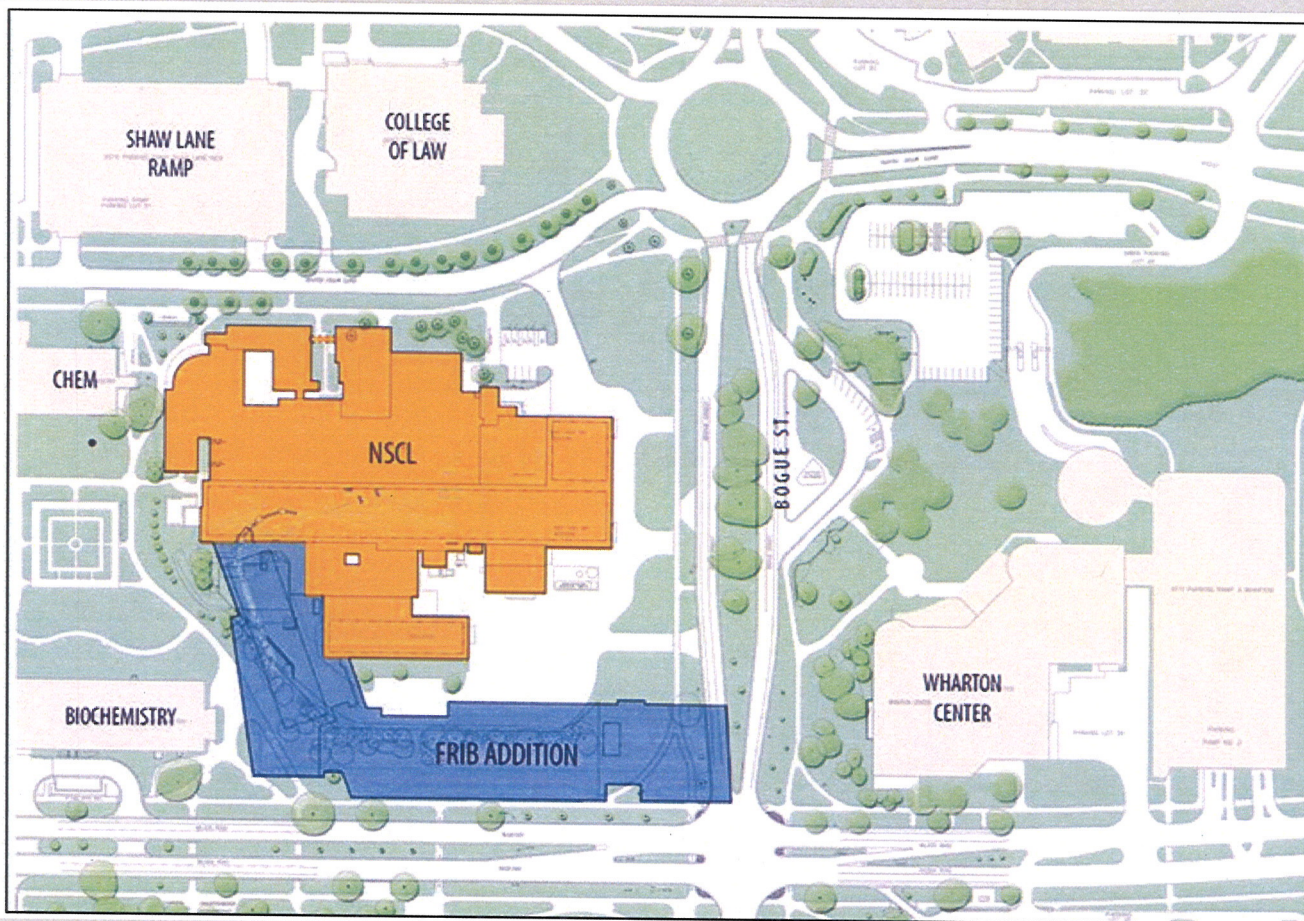


Facility for Rare Isotope Beams
U.S. Department of Energy Office of Science
Michigan State University

FRIB Site Layout



FRIB Site Layout Bogue Street Encroachment

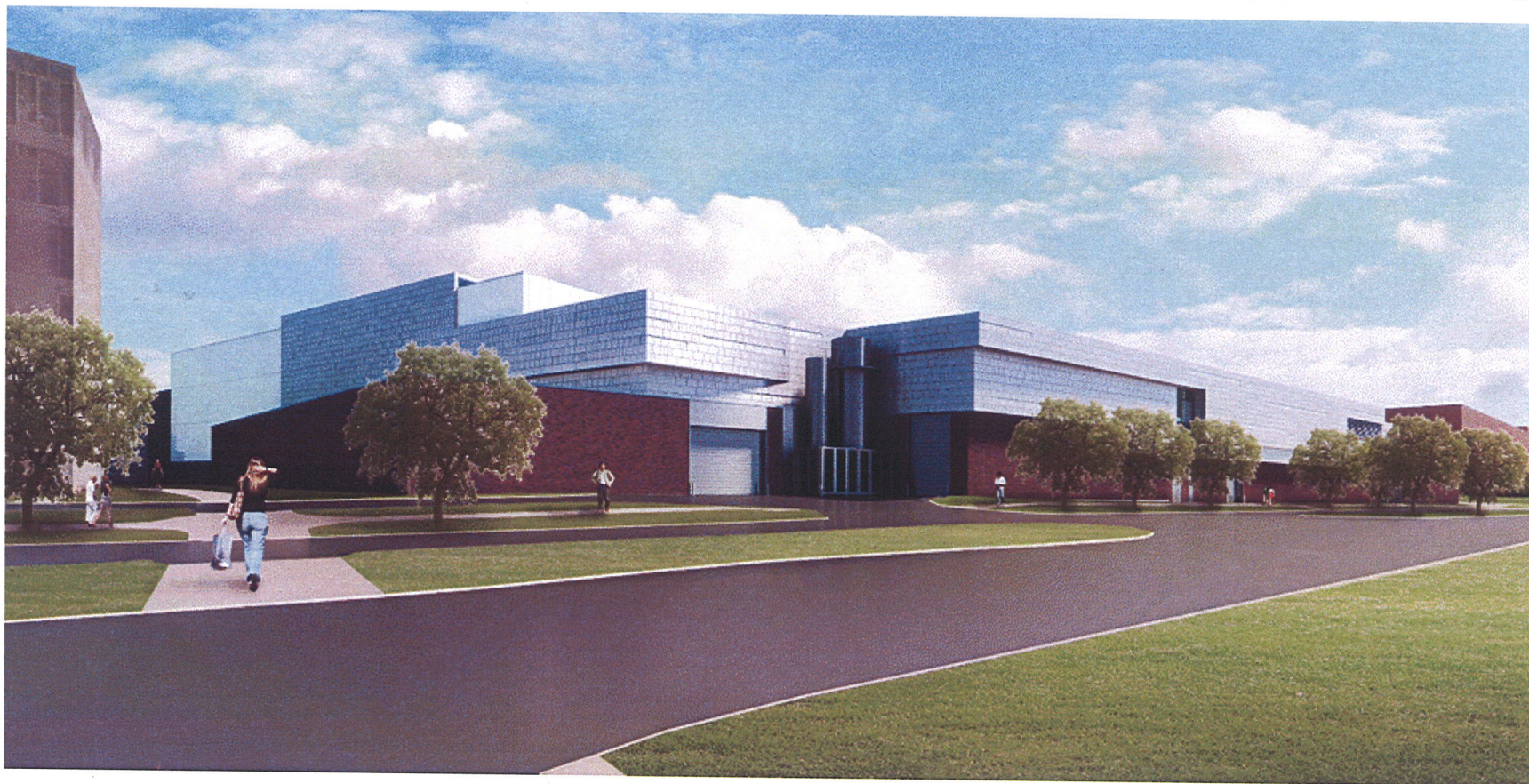


FRIB



Facility for Rare Isotope Beams
U.S. Department of Energy Office of Science
Michigan State University

Southwest View



FRIB



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Southeast View



FRIB



Facility for Rare Isotope Beams
U.S. Department of Energy Office of Science
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Northeast View

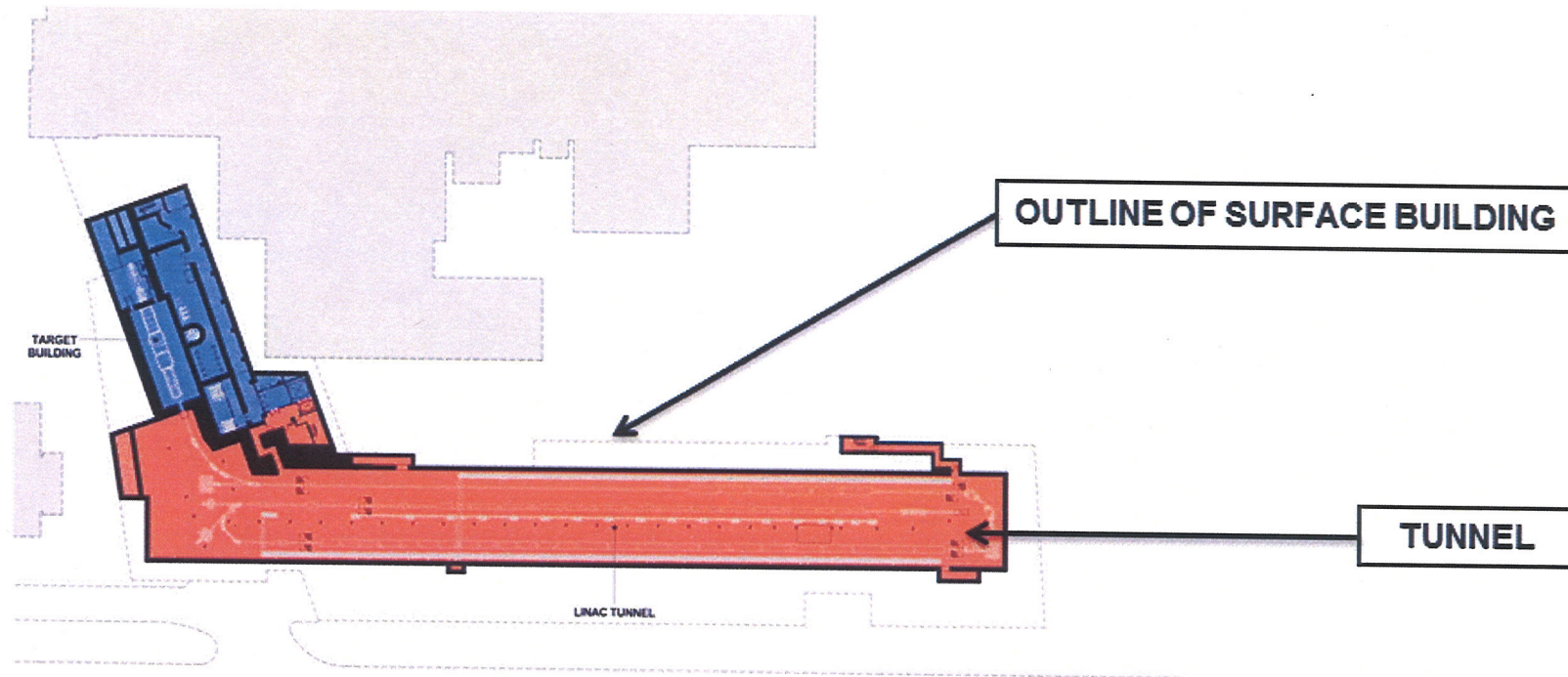


FRIB

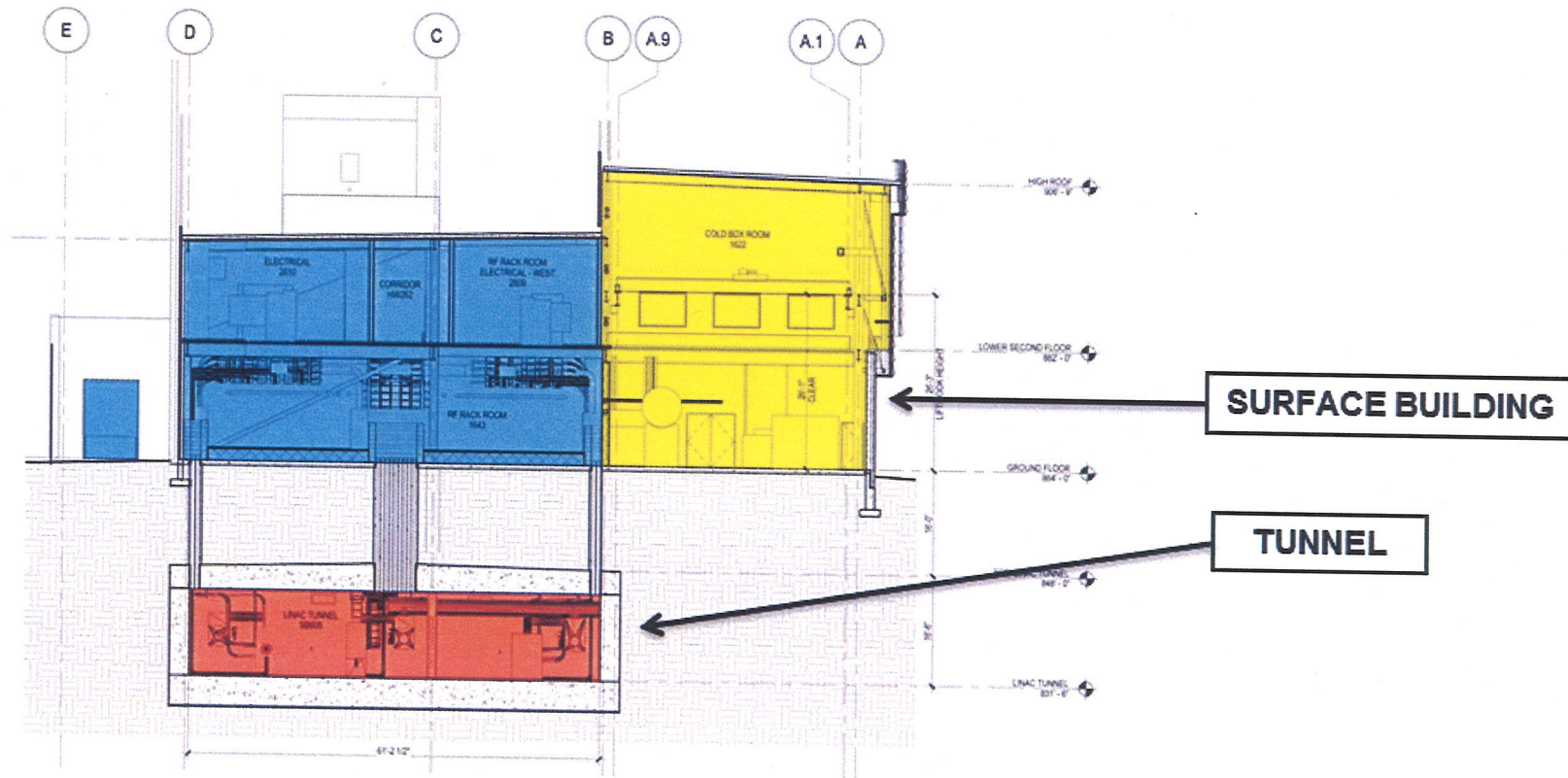


Facility for Rare Isotope Beams
U.S. Department of Energy Office of Science
Michigan State University

Tunnel Footprint Placed Directly Beneath Surface Building



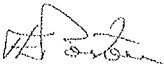
Cross Section of Surface Building and Tunnel



MICHIGAN STATE
UNIVERSITY

May 7, 2008

MEMORANDUM

To: Trustee Finance Committee
From: Fred L. Poston 
Subject: **Authorization to Plan**
Facility for Rare Isotope Beams



RECOMMENDATION

BE IT RESOLVED that the Trustee Finance Committee recommends to the Board of Trustees that it authorize the administration to plan for the project entitled Facility for Rare Isotope Beams.

BACKGROUND

Program Need:

The National Superconducting Cyclotron Laboratory (NSCL) at MSU is the world-leading rare isotope science facility at this time. Scientists at NSCL study the interaction of atomic nuclei and the origin of the elements on earth. Discovery potential in this field of science is related to the power of the driver accelerator, which for the NSCL, is the coupled cyclotron accelerator system. The current NSCL facility is being eclipsed by a Japanese facility, which became operational in 2007, and a facility under construction in Germany. Successful attainment of funding would enable the establishment of a world-class national user facility for the next several decades on the MSU campus. The facility for rare isotope beams represents a logical progression of NSCL's scientific and research capabilities.

S

OFFICE OF THE
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FOR FINANCE
AND OPERATIONS
AND TREASURER**

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517/355-5014
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General Description of the Project:

The planning of this project is anticipated to support a successful application to the U.S. Department of Energy Funding Opportunity Announcement for a facility for rare isotope beams. MSU proposes to replace the coupled cyclotron driver accelerators with a linear driver accelerator (based on superconducting cavities) - the latter is about 100 times more powerful than the existing coupled cyclotrons.

The Department of Energy has issued a draft FOA (Funding Opportunity Announcement), which is based on a linear driver accelerator and the production mechanisms currently used at NSCL, in addition to a rare isotope beam reacceleration capability. MSU has started to add a 3.2 MeV reacceleration capability to NSCL, as approved by the Board of Trustees on April 18, 2008.

The Facility for Rare Isotope Beams (FRIB) will replace the cyclotron driver accelerators at NSCL with a superconducting linac accelerator, thereby making it the world's most powerful rare isotope science facility.

The Cyclotron building is located on the corner of South Shaw Lane and Bogue Street in the Central Academic District. The location of this project is consistent with the Campus Master Plan and Planning Principles.

Communication and Labor Planning:

During the planning phase, the campus community will be given an opportunity to provide feedback on the project as it is being designed. The planning process will include multiple feedback opportunities. Input from the project planning team will also be solicited during the design phase. Because planning authorization is needed early to support the funding application process, it is not yet possible to assess the utility of requiring a project labor agreement for construction.

Preliminary Project Cost Information:

Based on the draft FOA issued by the Department of Energy the project funding may be up to \$550,000,000. This estimate may change as planning progresses.

cc: D. Brower, R. Flinn, J. Kacos, G. Klein, W. Latta, K. Lindahl, M. McCabe, J. Mumma,
R. Nestle, D. Quinney, D. Lawton, K. Gelbke

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