MICHIGAN STATE
UNIVERSITY

January 18, 2012

MEMORANDUM

To: Trustee Finance Committee

From: Fred L. Poston

Subject: **Project Approval - Authorization to Proceed**
Facility for Rare Isotope Beams - Phase I - Site Preparation and Excavation

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 - Phase I - Site Preparation and Excavation, and to approve a budget of $20,000,000.

BE IT FURTHER RESOLVED that the Trustee Finance Committee recommends that the Board of Trustees grant a variance to the University Zoning Ordinance to allow a 14-foot encroachment into the 40-foot Wilson Road setback for the proposed addition.

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.

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 partial demolition of, and an addition to, the existing Cyclotron laboratory, excavation, storm water mitigation off site, and site preparation of the project site for the construction of the new FRIB facilities.

The Architect/Engineer is SmithGroup. The Construction Manager is Barton Malow.

OFFICE OF THE
VICE PRESIDENT FOR
FINANCE AND
OPERATIONS

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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; concerns have been addressed in the project design.

A variance to the MSU zoning ordinance is required because the encroachment, measuring 10 feet by 442 for a total area of 4,420 square feet, is required to support:

(1) the surface and sub-grade building configuration to meet the scientific bending requirements for the ground floor connection between the FRIB addition's Experimental Systems equipment and the existing equipment in the NSCL's Experimental Core, as well as the Beam delivery interface between the Target Systems at the Lower Subfloor and Linear Accelerator (LINAC) in the LINAC Tunnel, and

(2) the requirement that the surface building cover the footprint of the Tunnel for shielding purposes. The required clear interior width for these programmatic functions sets the south exterior face of the Cryogenic building at twenty six feet (26') and the south exterior face of the Primary Switchgear Building at thirty feet (30') respectively from the back of curb line of Wilson Road.

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, but noted that it does not comply with the University Zoning Ordinance setback requirement of 40 feet from the nearest roadway curb line. After evaluating design, both CPA and the Campus Infrastructure Planning Work Group support the project proceeding with the requested setback variance.

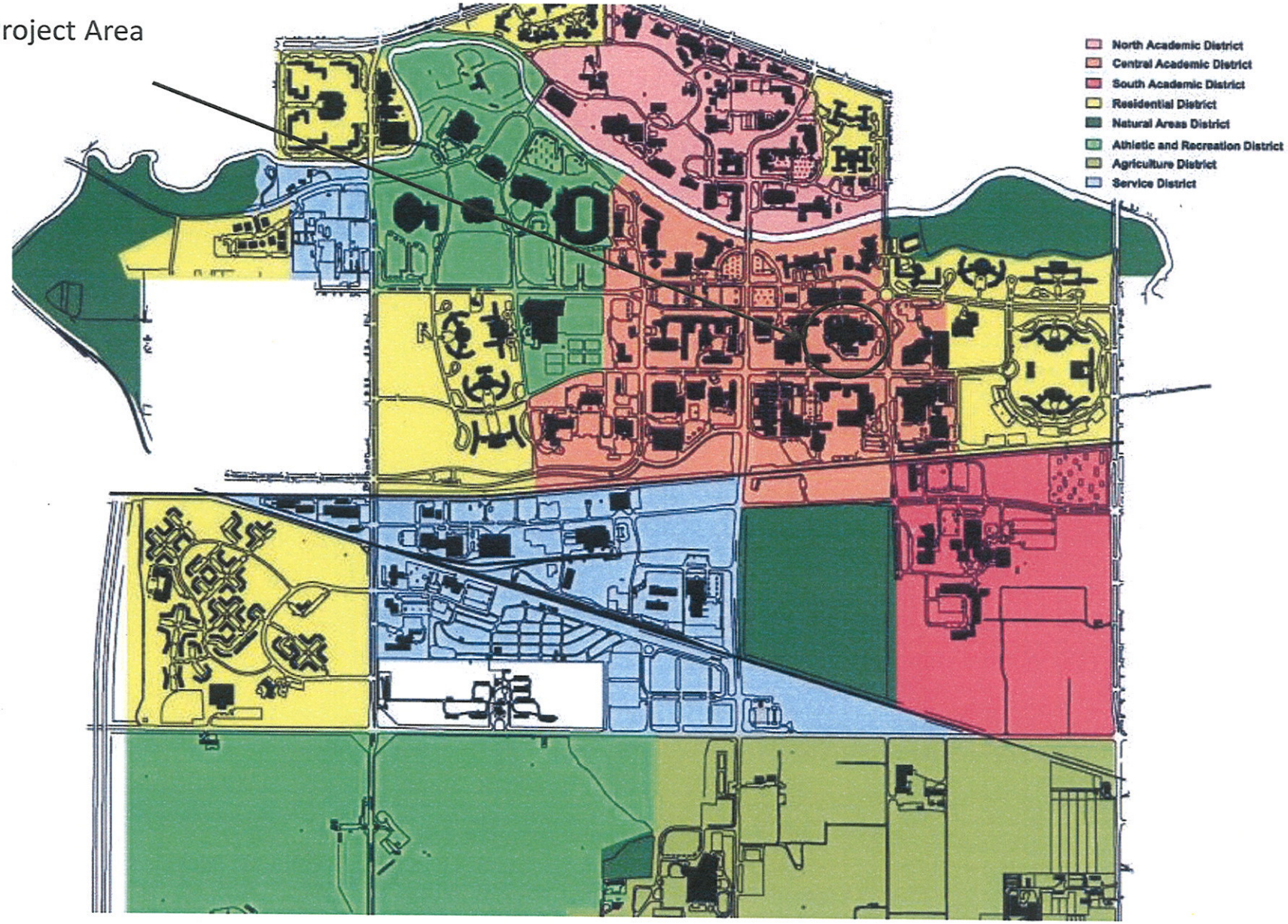
As construction proceeds, the schedule and phasing will be reviewed with the campus community.

Project Cost and Timetable:
The budget for this Construction Manager project is $20,000,000, which is being funded by a combination of DOE-SC funding, appropriations from the State of Michigan, and MSU tax-exempt financing with repayment from the FRIB.

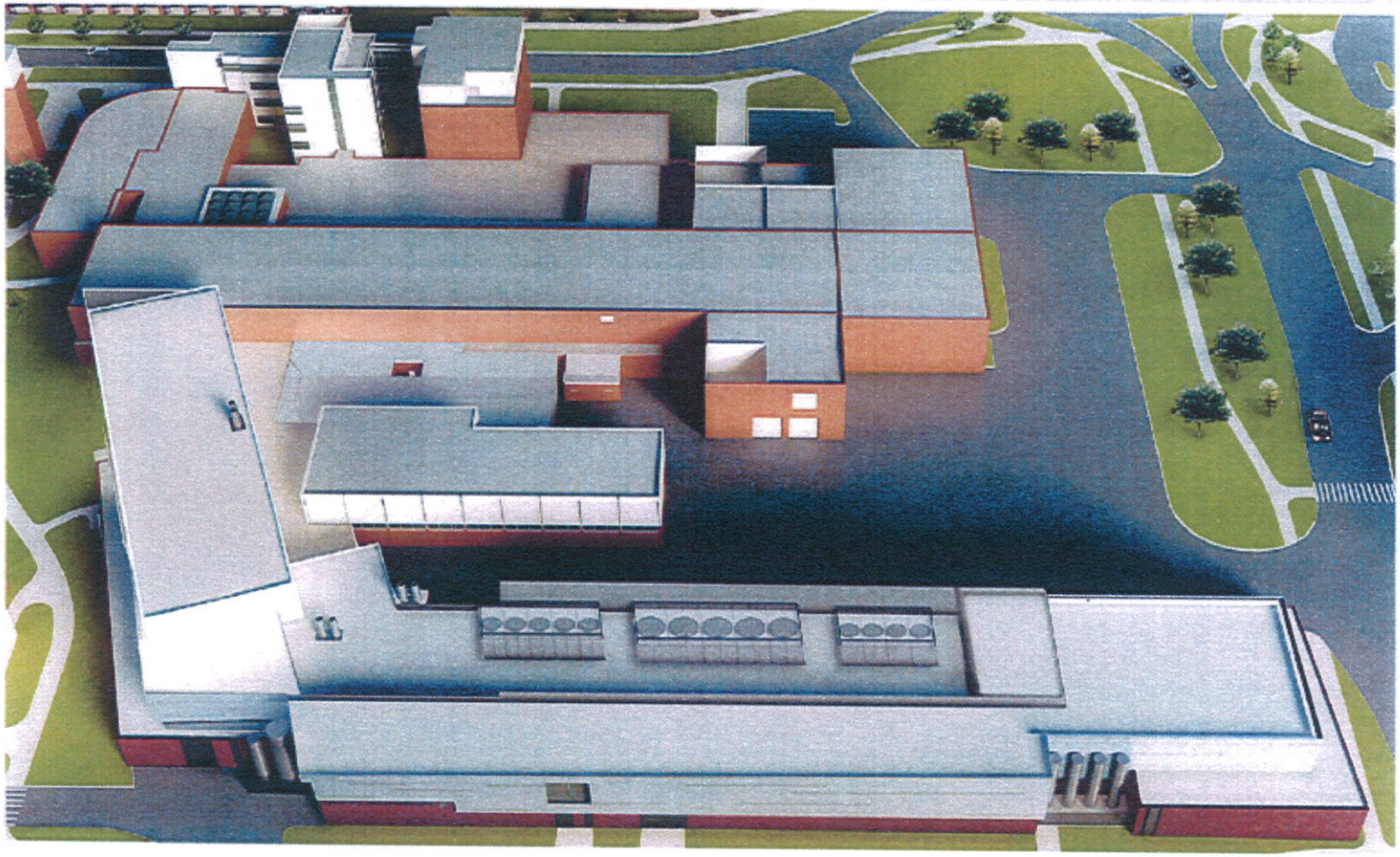
Site preparation for construction is planned to begin in February 2012 and will be substantially complete by June 2015, with final completion by December 2020.

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

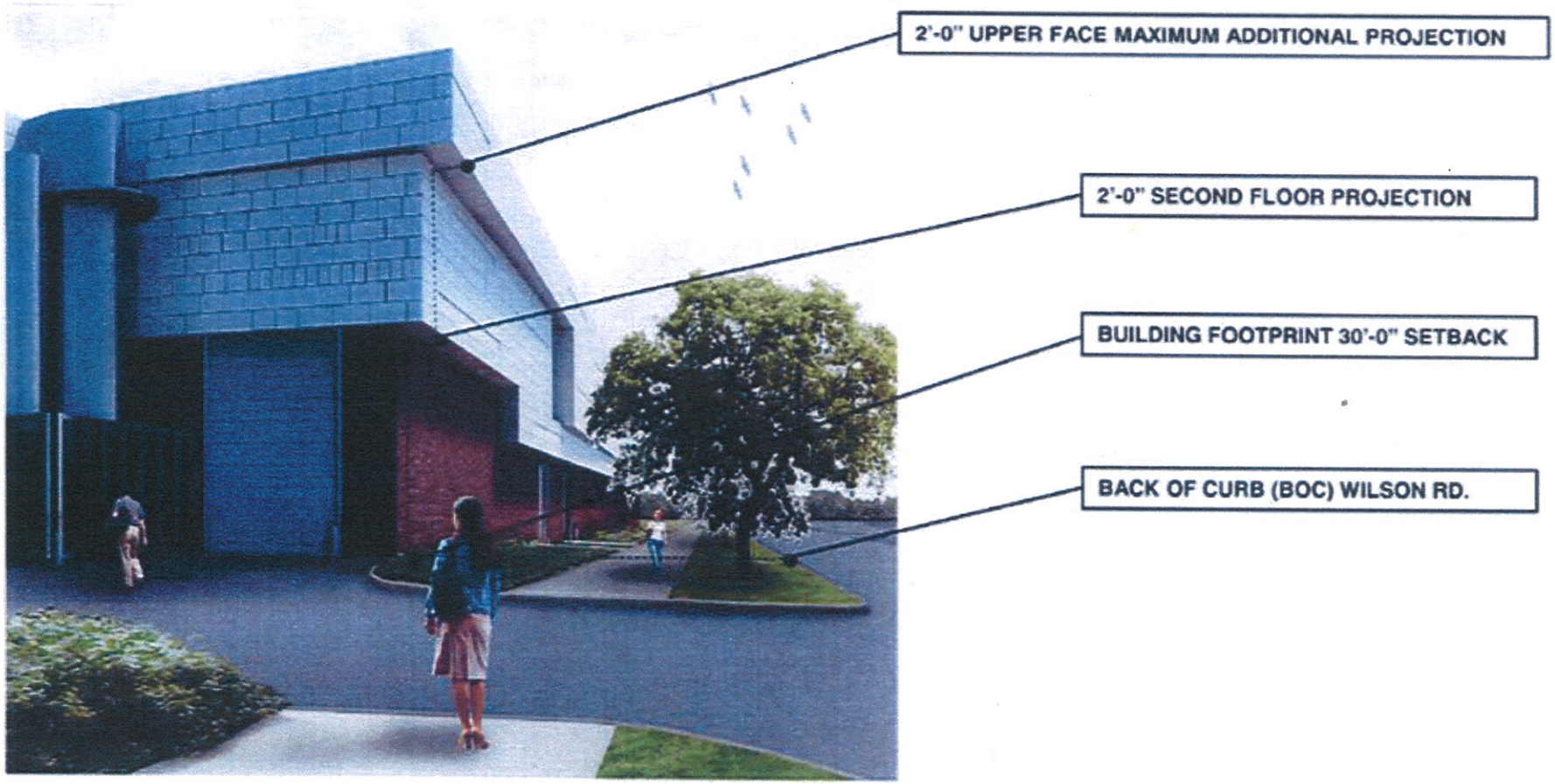
Project Area



Site Plan for FRIB Facility



Visual Impact of Building Setback



Background Information

MICHIGAN STATE
UNIVERSITY

May 7, 2008

MEMORANDUM

APPROVED
MAY 16 2008
Board of Trustees
Michigan State University
V.P. Finance and Operations

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.

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.

OFFICE OF THE
VICE PRESIDENT FOR FINANCE AND OPERATIONS AND TREASURER

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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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