



FESS Design Review Form

The purpose of providing this information is to establish the appropriate level of review required for this project/activity under the Directors Policy Construction, Conventional Design and Land Use Planning. FESS will review this project for compliance with Fermilab policies and aesthetic considerations.

Project Information

Date: 03/31/2014

Project Activity/Title: Mu2e In-Tunnel Shielding Support Structure

Project Number/Identifier: ADMSD14-001

Project Enter Date: 03/24/2014

Project Owner: 15374N - Cory Crowley

Project Description:

The Mu2e In-Tunnel Shielding Support Structure is required for the large amount of shielding steel that will be placed over experimental devices in the AP30 Straight Section. Shielding must be in place before Mu2e begins operation, however due to the impact on other designers for subsystems (cable trays, lighting, cooling water, magnet bus), having the design completed, well understood, and approved early on is absolutely critical.

The support structure consists of modular columns that are anchored to the floor and ceiling, with additional supports anchoring it to the wall. Minimal tension loads will be applied to the ceiling as directed by FESS in earlier meetings with Tom Lackowski (early 2013). Load for the support structure is transmitted to the floor (compression) and to the wall (upward shear).

A Fess design review is being requested due to the loads being placed on the floor and wall, and to ensure it does not overload the existing structures. The main documentation will be uploaded, however due to the complexity of the design, it is suggested a meeting with the FESS reviewers will be needed for further clarification.

The design has been reviewed and approved by the AD Mechanical Support Department.

Project Cost & Schedule

Please estimate the project schedule.

Project Cost: The estimated project cost exceeds \$100,000

Estimated Project Start: 04/30/2014

Estimated Project Duration: 12 Months

Project Interfaces

Utilities

Facility

Structural Elements - Yes Interior Walls or Partitions - Yes

There will be structural connections to the ceiling of the tunnel.

There will be structural connections to the tunnel walls.

Construction Considerations

Disposition by Fermilab Design Reviewer

The review for the project has been completed and all comments have been noted. This concludes the FESS/Engineering Design Review Process.

Comments: THE DESIGN APPROACH LOOKS APPROPRIATE AND BY INSPECTION A ROBUST SET OF CALCULATIONS HAS BEEN PREPARED. I HAVE NOT PERFORMED A NUMERICAL CHECK BUT A DETAIL CHECK SHOULD BE MADE. THE BEARING ON THE CONCRETE SLAB SHALL BE LIMITED TO 1400PSI. NO ATTACHMENT TO THE CEILING SHALL BE MADE DIRECTLY UNDER THE UPTURN BEAMS (CANNOT DRILL THROUGH OR ADJACENT TO BOTTOM REBAR IN BEAMS.) TL

NO COMMENTS

G. VANZANDBERGEN 03/31/14

DP-18 Reviewer: 10974N - Gary Van Zandbergen

[This project contains attachments...go to this record on the web to view.](#)

Attachment: Y:\public\Crowley\Mu2e In-Tunnel Shielding\Final Design & Proposed Installation Plan.pdf
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Attachment: Y:\public\Crowley\Mu2e In-Tunnel Shielding\Mu2e In-Tunnel Shielding Engineering Document.pdf
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