Draft Statement of Work

MAGIS-100 SUSPENDED WORK PLATFORM SYSTEM

June 10, 2026

1. Introduction

Fermi National Accelerator Laboratory (Fermilab) is an Office of Science Laboratory managed and operated on behalf of the Department of Energy (DOE) by Fermi Forward Discovery Group, LLC (FFDG). A suspended work platform system will be designed for personnel to safely access regions of the MAGIS-100 experiment in a vertical shaft. The project is currently in the Preliminary Design phase, with anticipated procurement of necessary equipment near the end of 2026. During this planning stage, it is essential to understand the ability of vendors' capabilities to meet the specific requirements for this project, which are described in detail below.

The MAGIS-100 experiment consists of instrumentation that is suspended vertically along the height of a 100m deep shaft. Platforms will be used to provide access to the instrumentation so that regular maintenance can occur. The platforms located within 26ft of the top of the shaft will primarily be accessed via ladders from the ground floor. Platforms in the middle of the shaft will be accessed via a suspended scaffold supported by davits or an access basket suspended from the overhead crane. The platform at the bottom of the shaft within 32.5ft will primarily be accessed via scissor lift from the bottom floor of the shaft. FFDG has developed a stabilizer assembly that can be used at discrete points to secure the suspended scaffold or basket to each work platform to prevent movement in the horizontal plane so that personnel can safely transfer from one to the other.

Figure 1 shows the area at the top of the shaft. Figure 2 shows a plan view of the shaft with existing utilities, the approximate area where the experiment and platforms will be located, and the area that must remain clear. Figure 3 shows a side view of the shaft with simplified platforms and an example access basket included.

Figure 1: Views of top area of Shaft

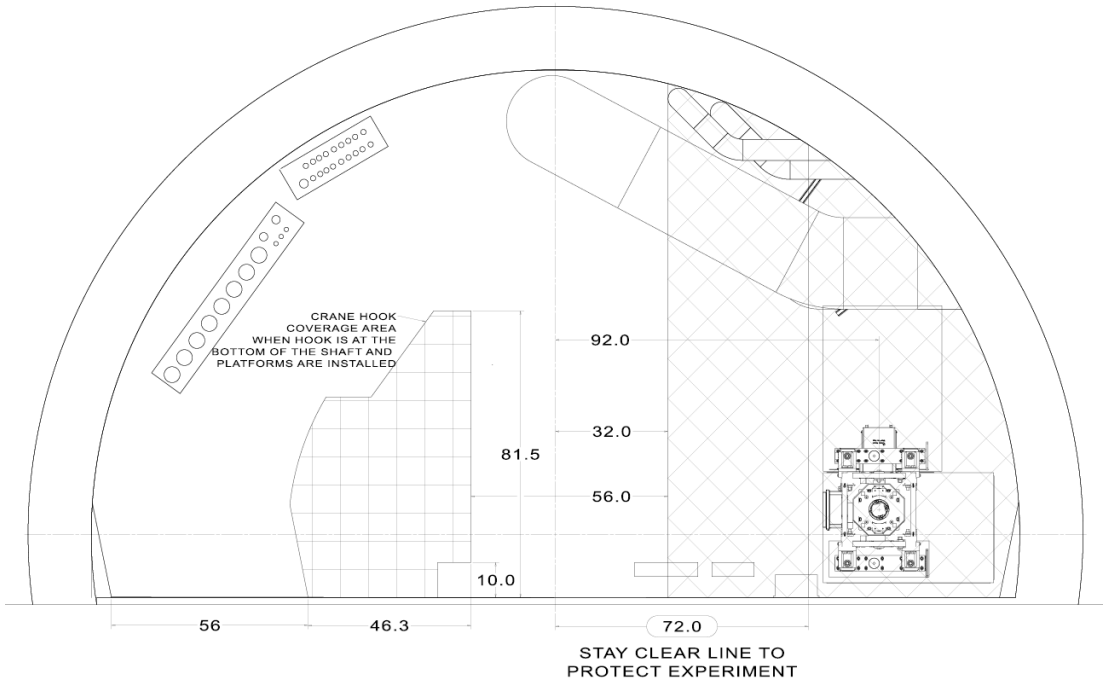

Figure 2: Plan view of shaft showing experiment and existing equipment

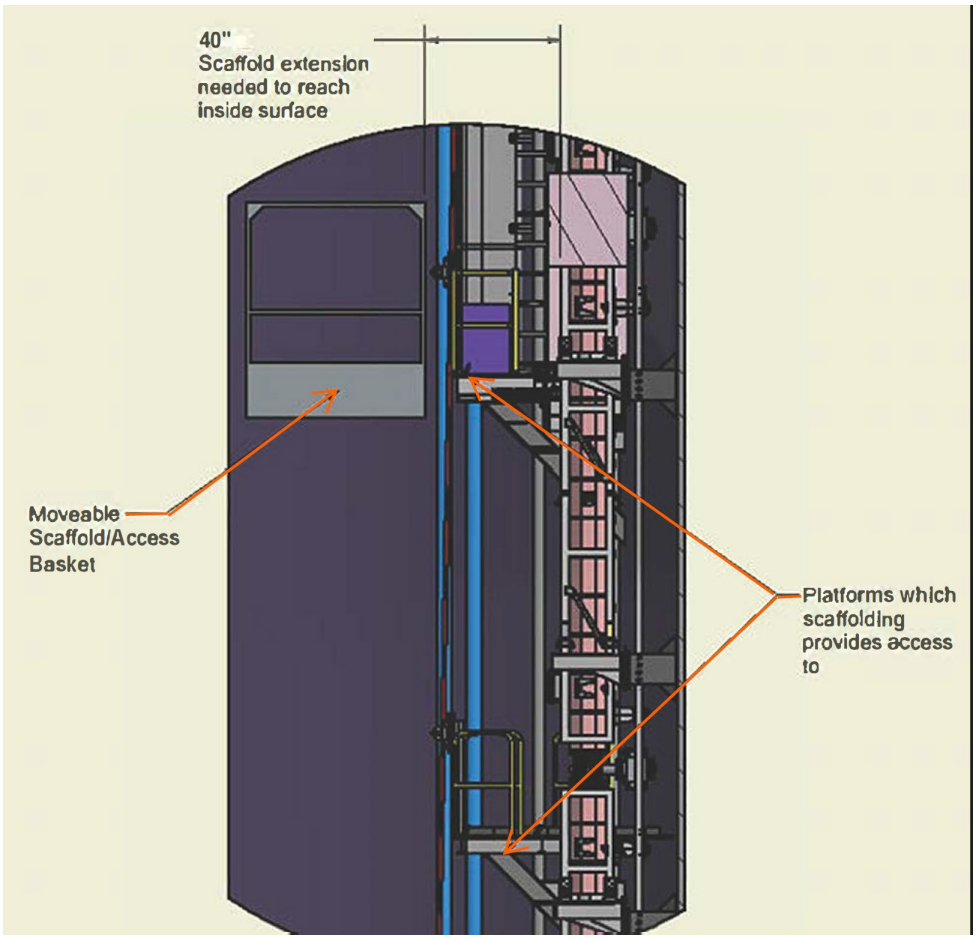

Figure 3: Side view of shaft cross section with example scaffold

2. Moveable Scaffolds

The requirements for a moveable scaffold are the following:

- Minimum scaffold dimensions of ~64”deep x 68” wide as seen in Figure 4.
- Includes extension for reaching areas between platforms 40” from nominal access position post-installation. See Figure 4.
    - This nominal position is 36” north of shaft center.
- Contains sufficient tie-off points.
- Work area must have roof to deflect small falling objects.
- Stows away, outside of the shaft region. Ideally this would be over the crane operating height.
- Scaffold must be rated for at least 4 times their maximum intended load of 2000 LB plus its own weight, so rating will be greater than 8,000 lb.
- The flat wall cannot be used for structural support.
- Must be equipped with 2” square railing at 41” +/-1” height from platform surface to be compatible with stabilizer system for fixed platform access.
- The Moveable Scaffold must be stable enough to allow mechanical assembly tasks such as torquing bolts to 200ft-lbs without moving in a manner that may introduce pinching hazards.
- Platform shall support a 500 LB point load at any location.
- All designs must adhere to OSHA and other applicable requirements such as appropriate overall strength ratings and railing strength and position.

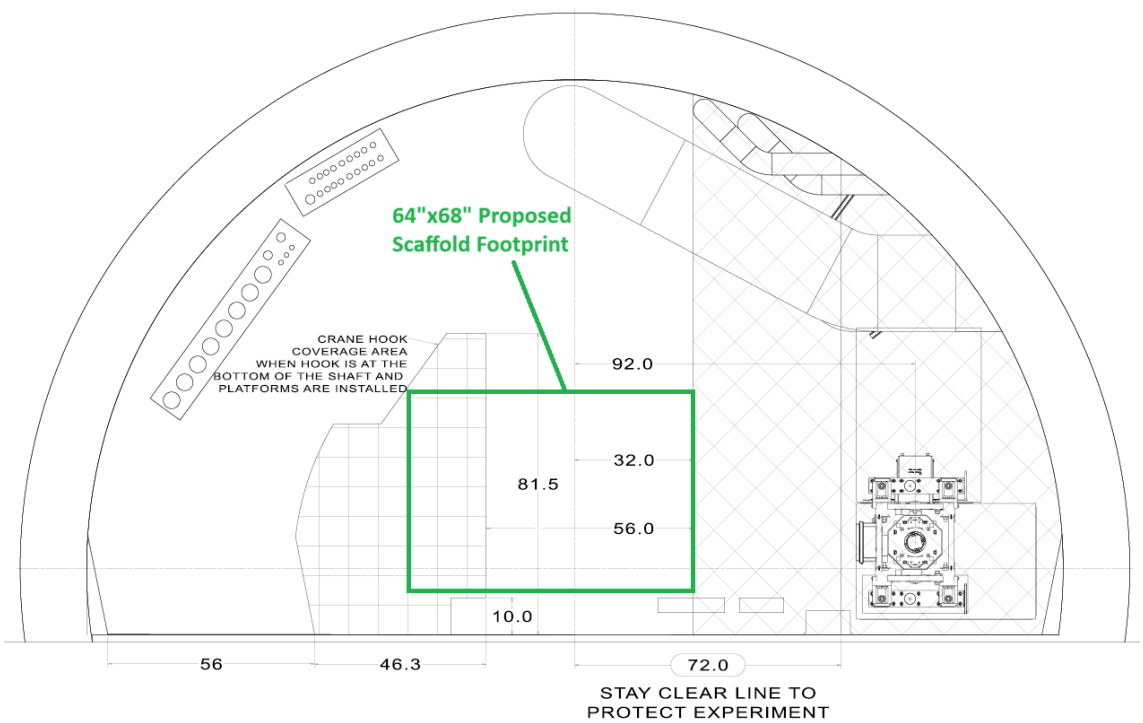

Figure 4: Top view drawing of shaft with proposed scaffold footprint

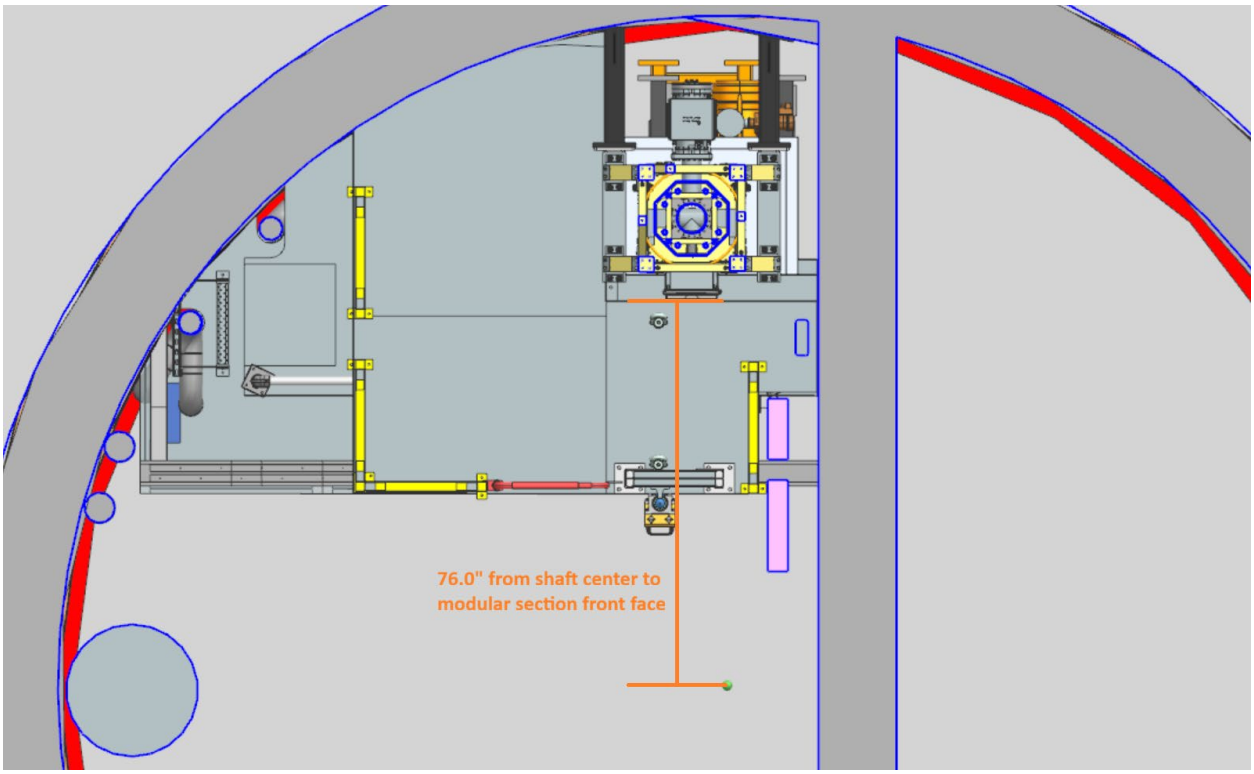

Figure 5: Required access distance from shaft center to extension

Figure 6: Examples of extension platforms

https://www.unitedrentals.com/marketplace/equipment/aerial-work-platforms/scissor-lifts/20-21-ft-scissor-lift-electric-narrow-power-deck-extension

https://stonemountainaccess.com/product/sliding-porch-kit/