

# Sanford Underground Research Facility

FroST - THEIA Detector Workshop  
University of California - Davis, California, USA



**David Vardiman**

**Project Engineer**

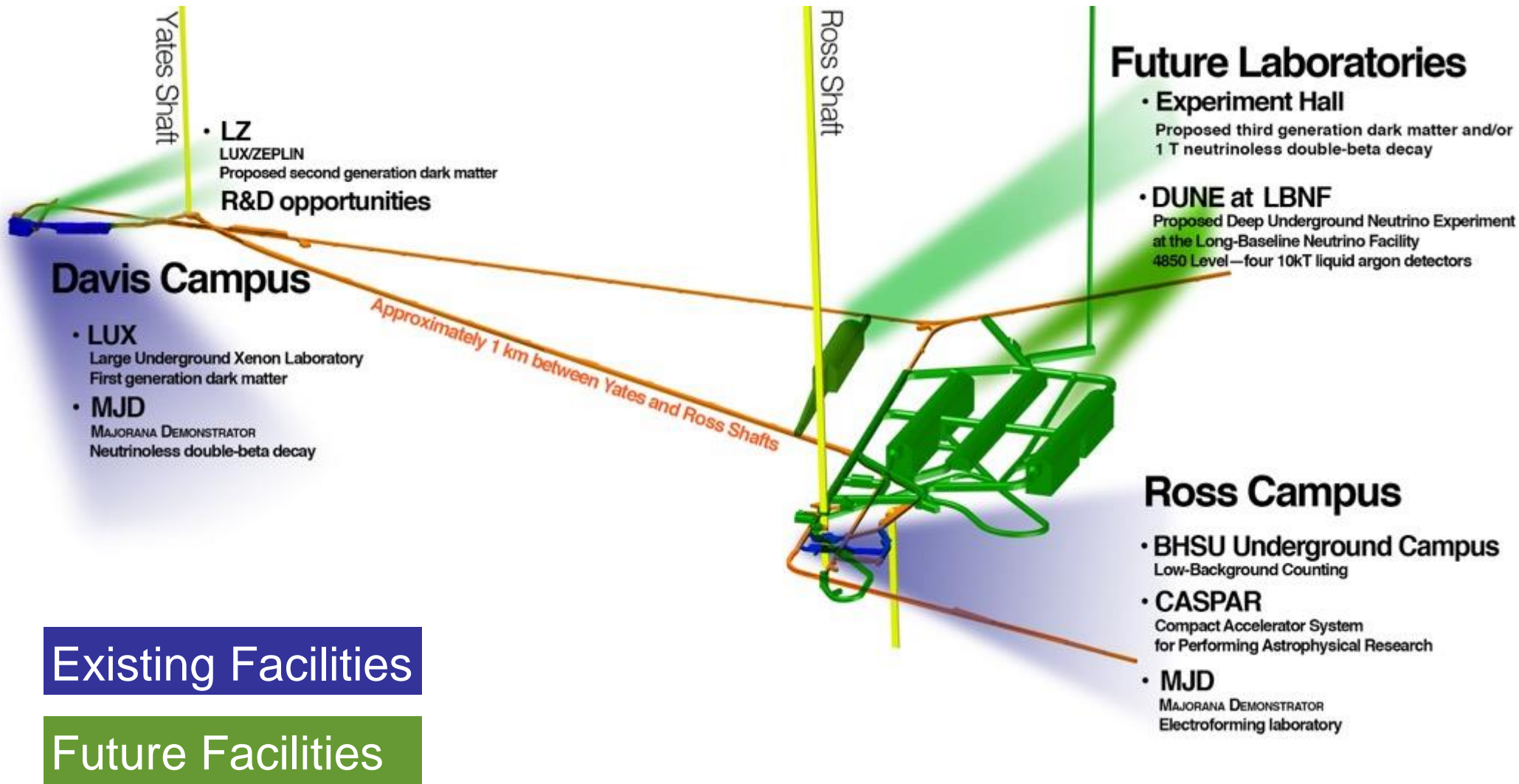
**April 12, 2018**



Underground Research Facility

South Dakota Science and Technology Authority

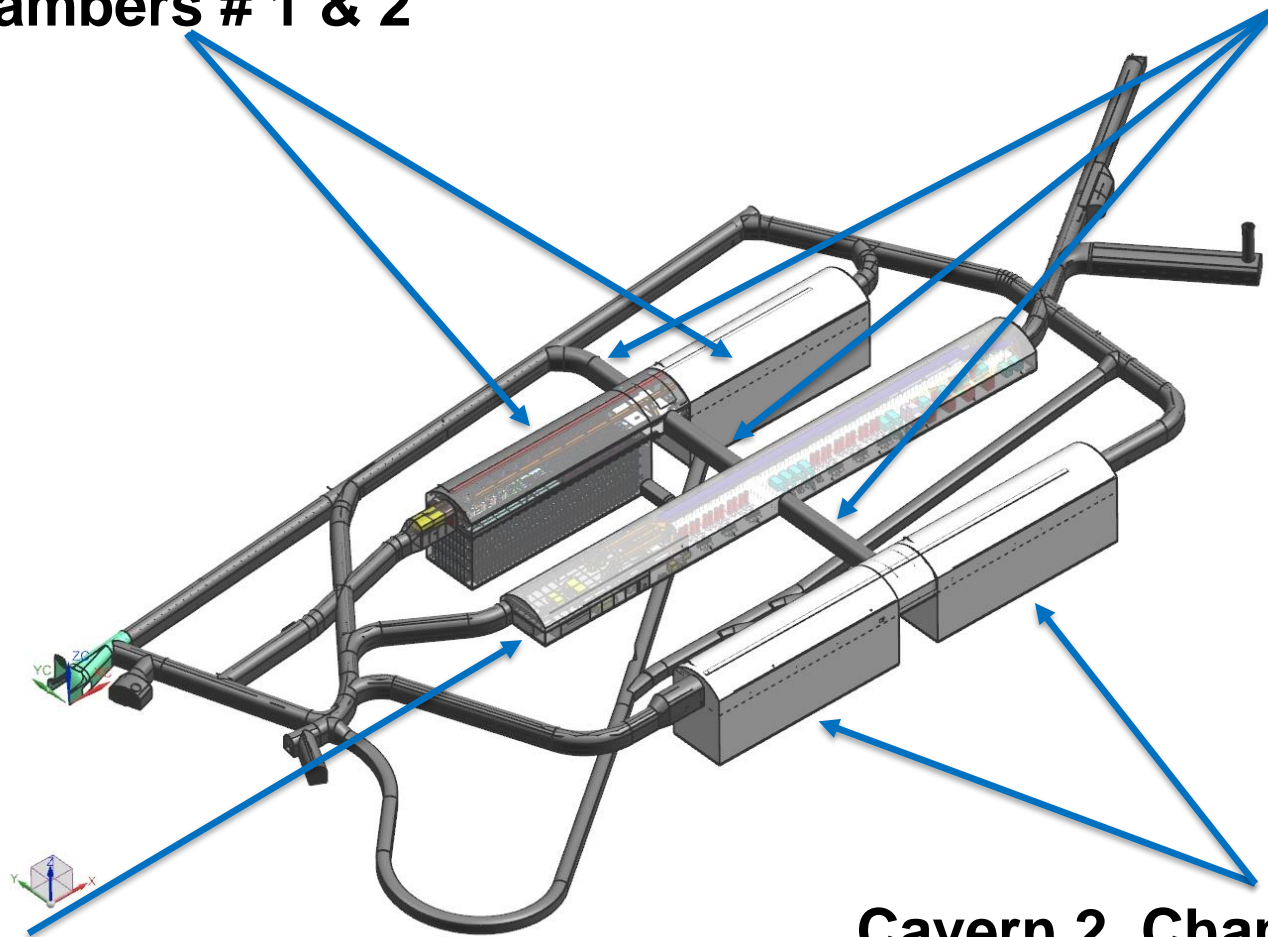
# 4850L SDSTA Science Facilities



# LBNF Current Geometry

**Cavern 1, Chambers # 1 & 2**

**North South access drift**



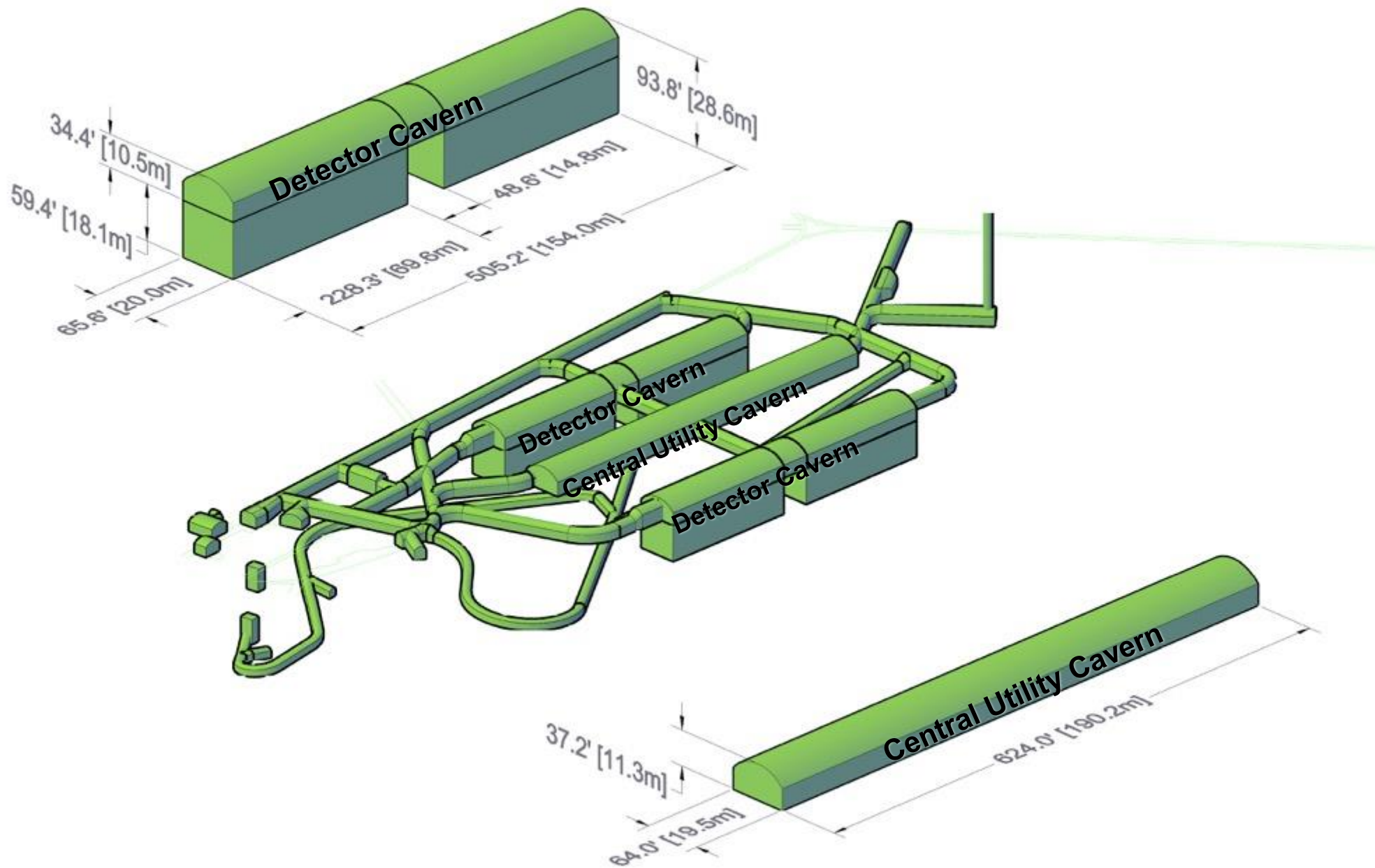
**Central Utility Cavern (CUC)**

**Cavern 2, Chambers # 3 & 4**

Jack Fowler and others, EFIG 2018-Mar-19

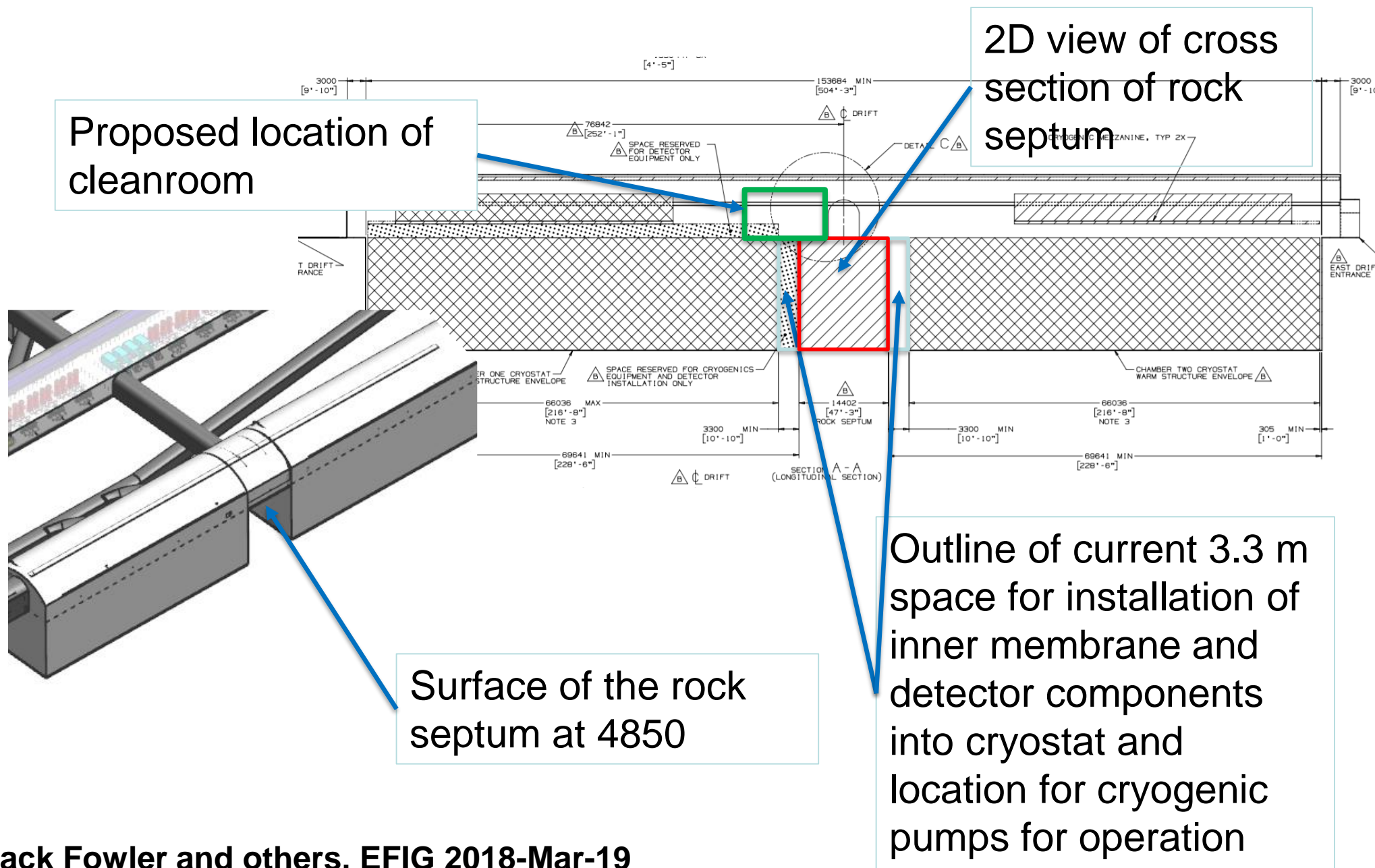
# LBNF Current Excavation Dimension Design

Excavated material ~800,000 tons (~500,000 cubic yards)



Jack Fowler and others, EFIG 2018-Mar-19

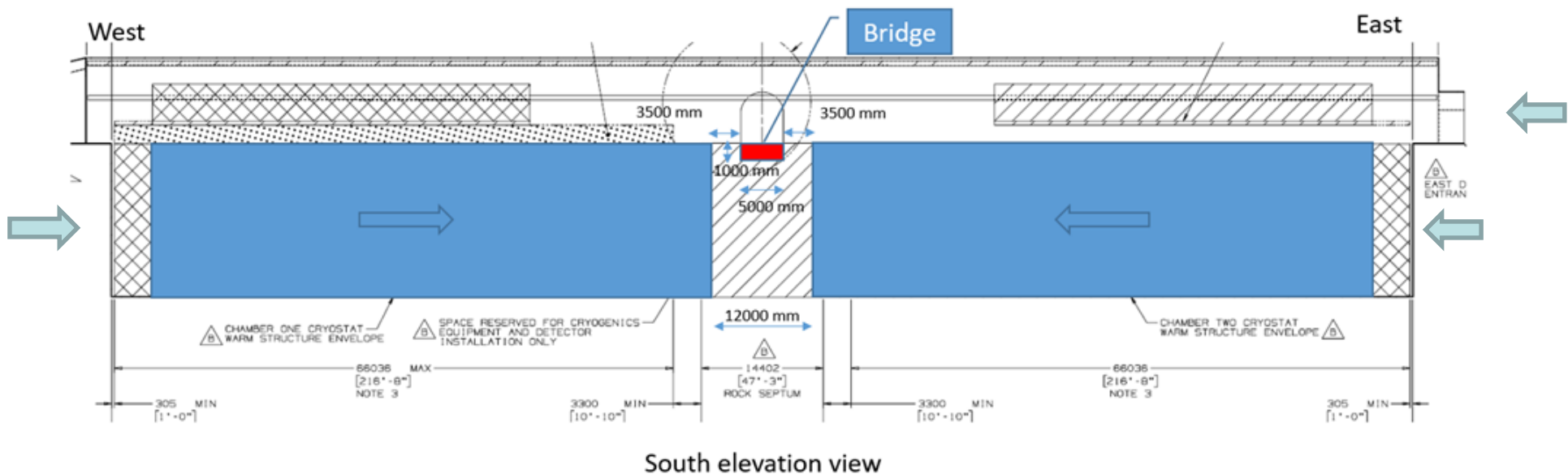
# LBNF – Cavern Septum Details



Jack Fowler and others, EFIG 2018-Mar-19

# Septum Design Scope of Change

- Remove rock septum down to 4910 level
- Move east CS 4.5 m to the west, and west CS 4.5 m to the east, reduce overall cavern length by 9 m.
- Build 5.00 m wide bridge between north and south drifts
- Moves the cleanroom for detector installation below the 4850 level to liberate the space above. This reduces the interferences with overhead conveyances, rack installation and materials moving into the CUC.



Jack Fowler and others, EFIG 2018-Mar-19

# LBNF / DUNE – Schedule Summary

- **Final Design – Kickoff Meeting May 2018**
- **Start Pre-Excavation Start – Fall 2018**
- **Start Excavation – 1<sup>st</sup> Qtr. 2020**
- **Completion of Excavation - 1<sup>st</sup> Qtr. 2025**

# THEIA

# Thank You