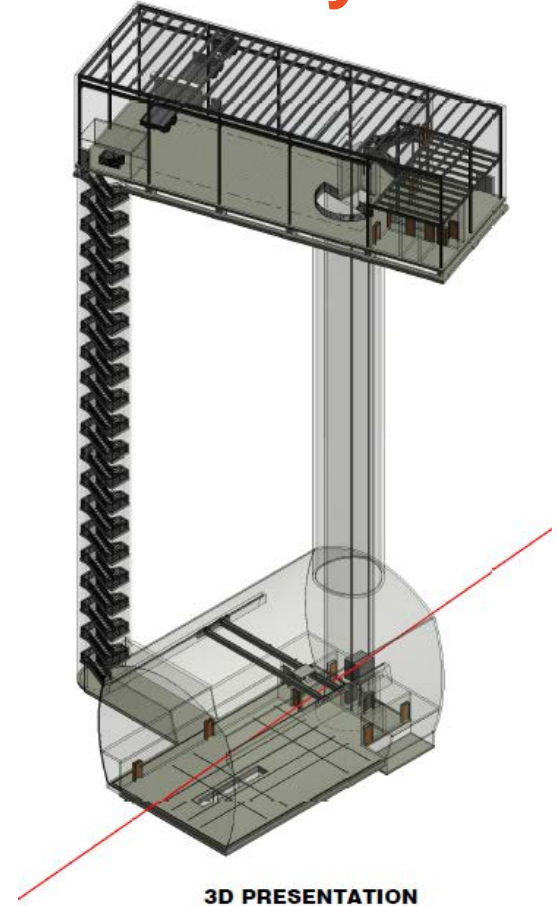


Status of DUNE Near Detector Cavern Layout



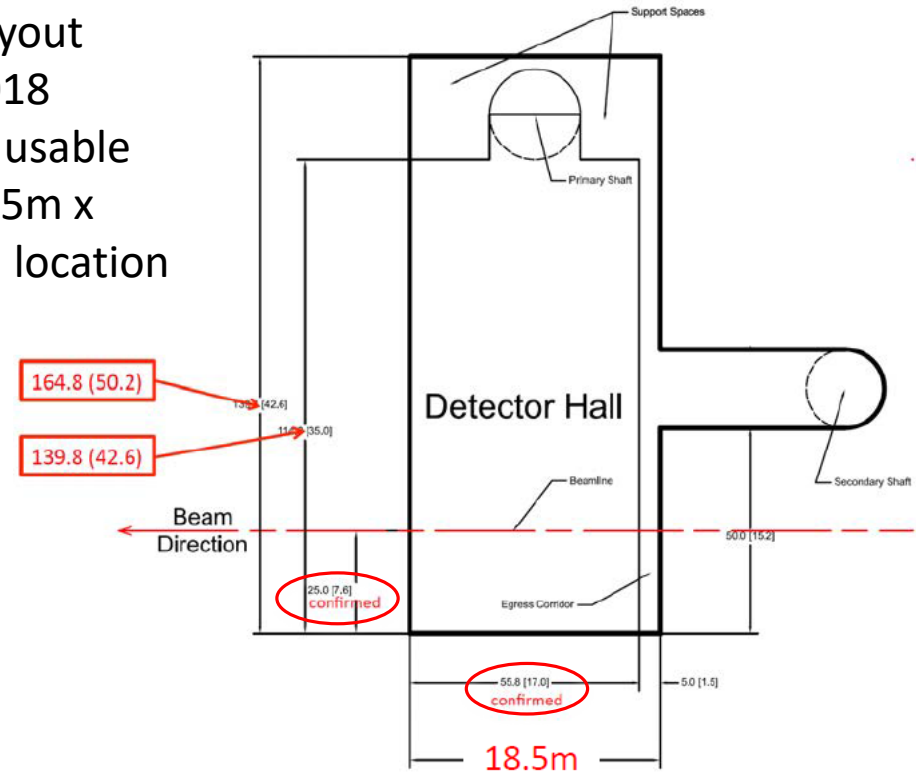
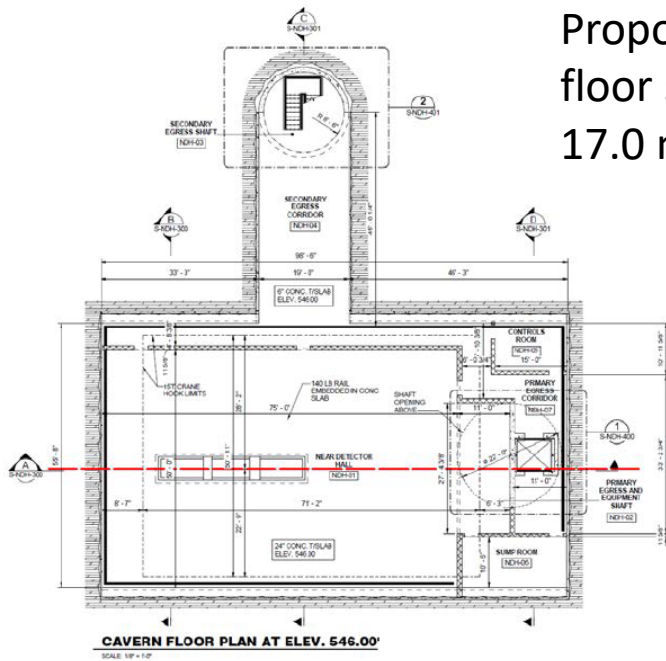
3D PRESENTATION

SCALE: N.T.S.



DUNE ≡ DEEP UNDERGROUND NEUTRINO EXPERIMENT

Started the ND layout using the June 2018 Proposed Cavern usable floor space of 42.5m x 17.0 m and beam location



Reference ND Detector Cavern Concept:

100ft x 56ft Cavern with
75ft x 50ft Detector Hall

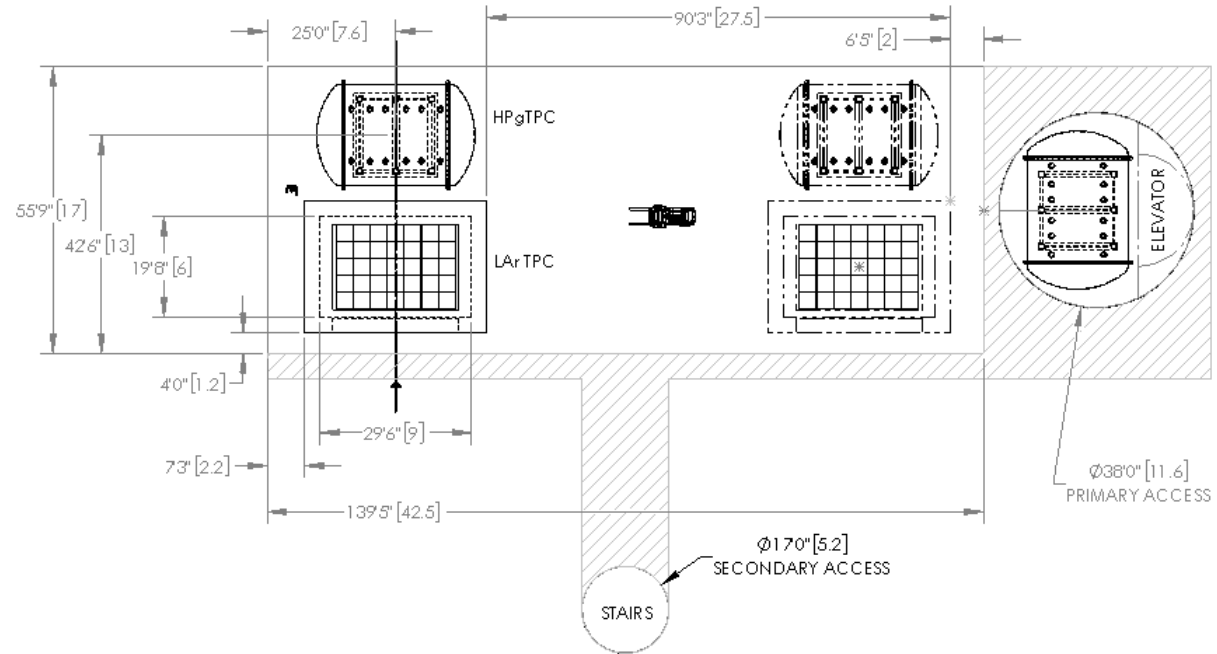
June 2018 ND Collaboration Proposal:

165ft x 61ft Cavern with
140ft x 56ft Detector Hall

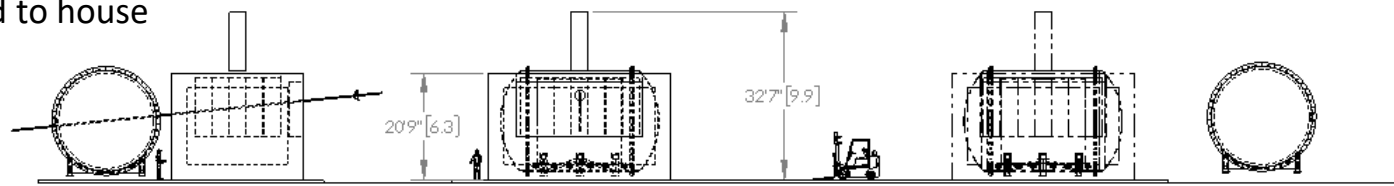


Floor space

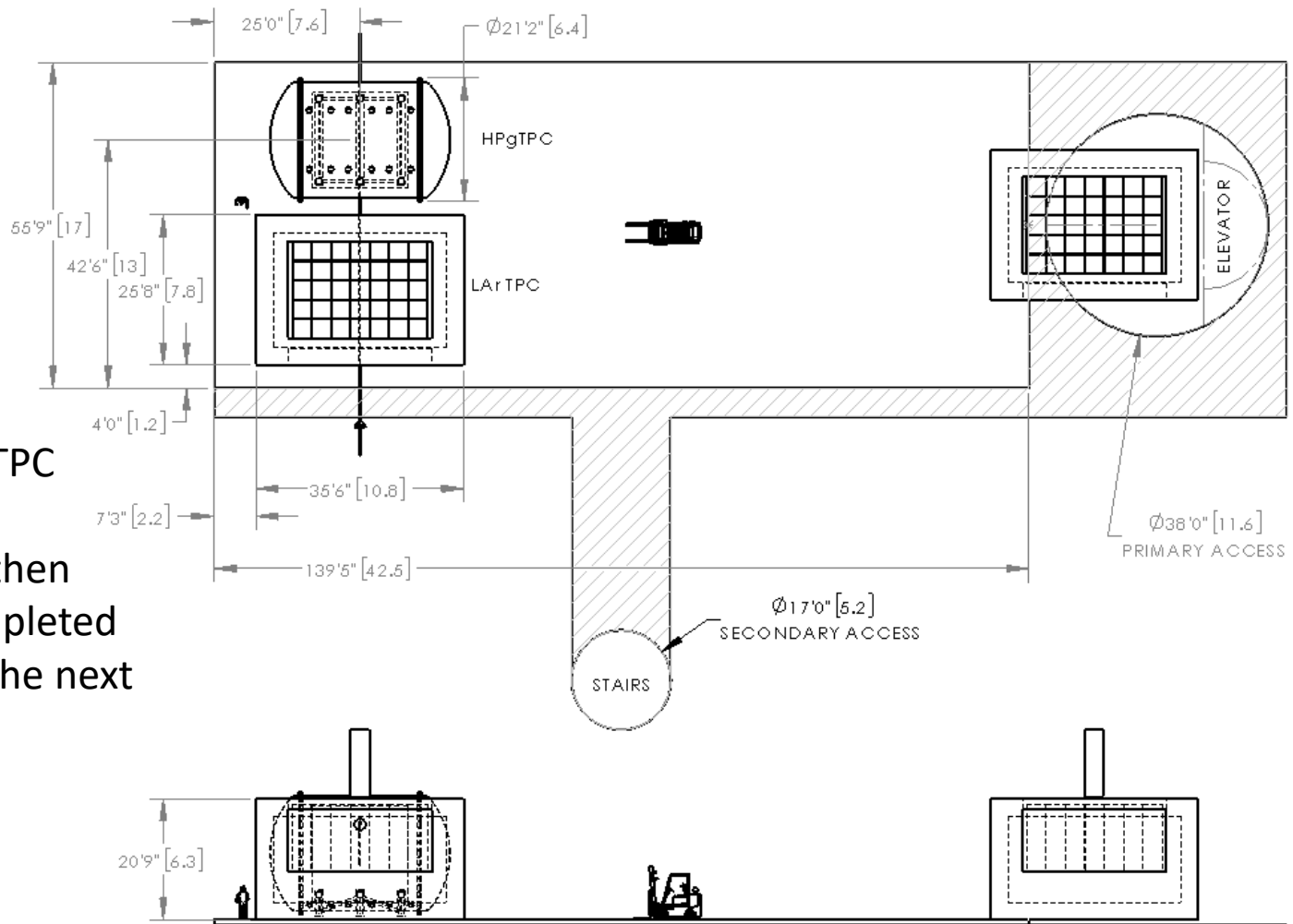
1. Known movements shown.
2. Primary access shaft enlarged to 38 foot diameter.
3. Tank assembly on the surface now possible.
4. Most items are large, do we need an overhead crane?
5. FNAL has fork lifts suitable for cavern use.
6. Include a gantry crane on top of the LAr TPC to install/remove covers & modules?



- No room for the magnet, size unknown. It is expected to house the HPgTPC vessel.
- Masses of items TBD.



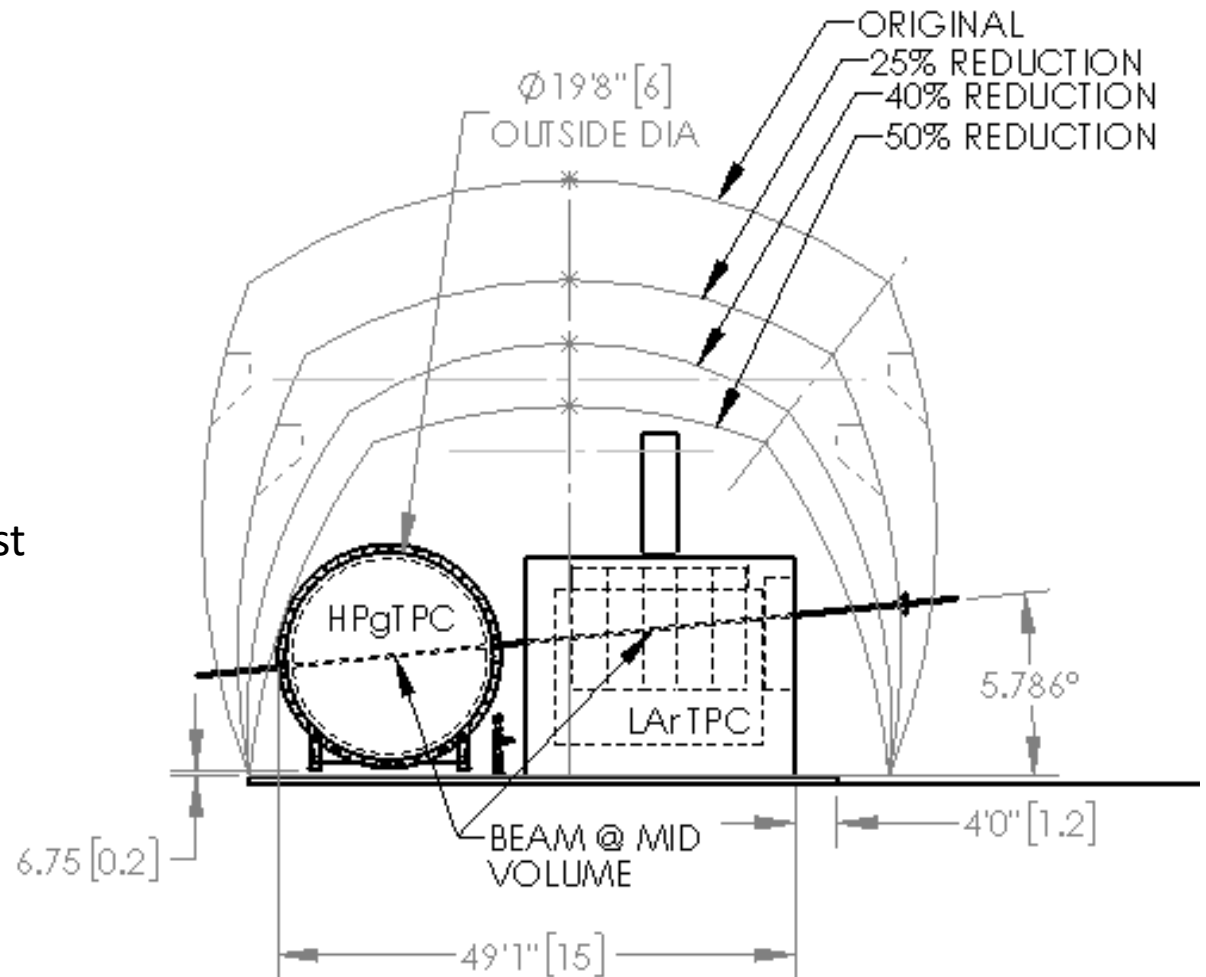
Building the LAr TPC



Assemble the LAr TPC under the shaft by lowering sections then advancing the completed portion to accept the next section.

Reducing cavern volume

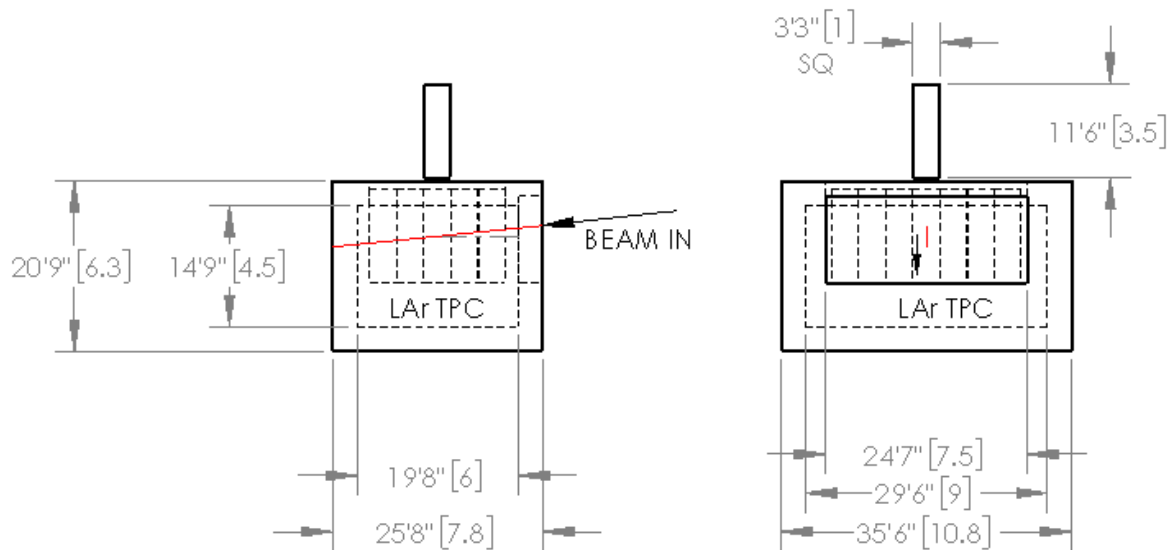
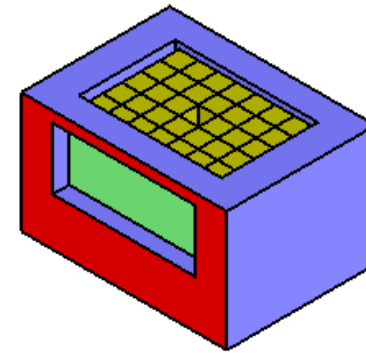
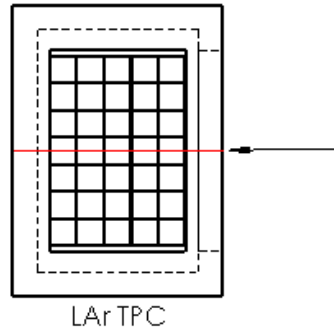
Having no overhead crane allows the opportunity to reduce cavern volume & cost



Supporting info

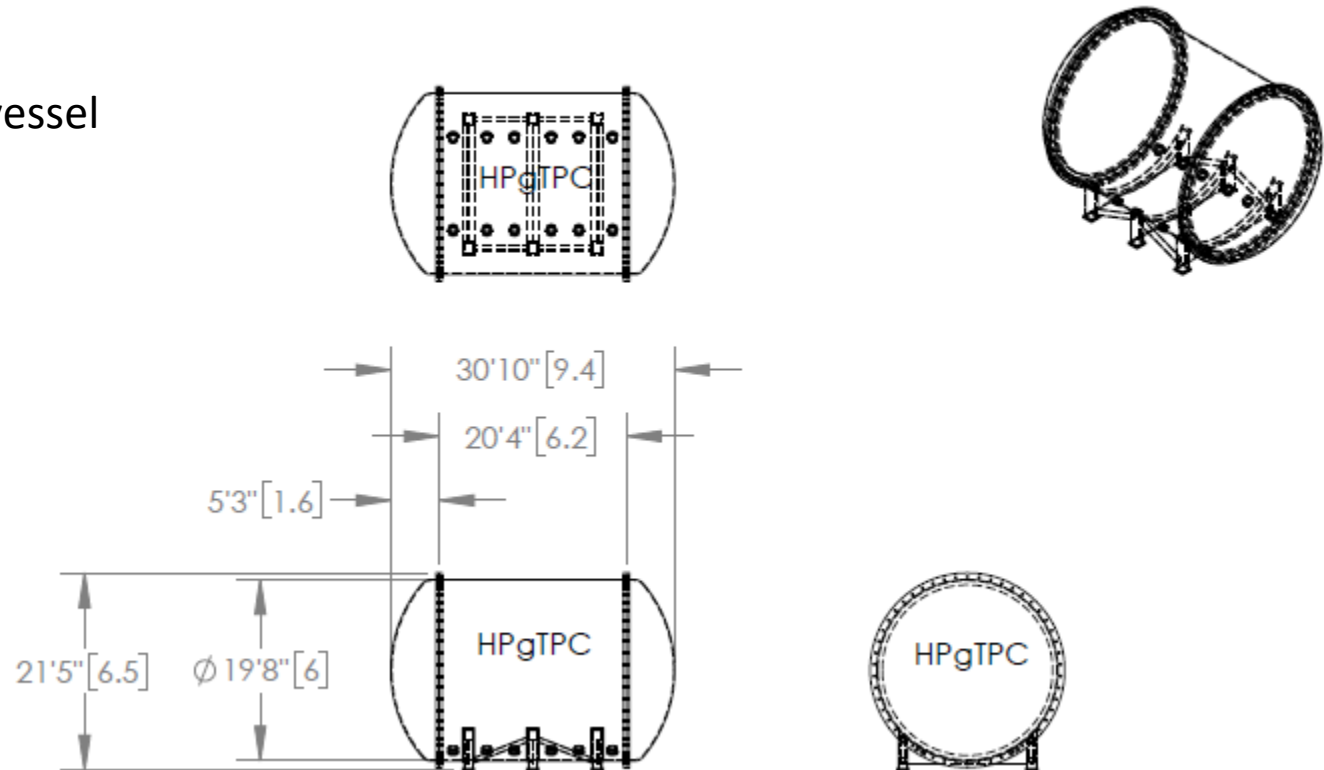


Current LAr TPC size



HPgTPC vessel

The current HPgTPC vessel



Cavern floor plan

