



# Conventional Facilities

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DOE Independent Project Review of PIP-II

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# Outline

- Construction phase scope of work
- R&D Phase Goals
- R&D Status
- R&D Schedule to complete
- (Division of responsibility between Fermilab and DAE).

# Construction Phase Scope of Work

- Conventional Facilities to Support PIP-II:
  - Site Work
    - Utilities (electrical, communication, ICW, DWS, sanitary, chilled water);
    - Site Improvements (roads, parking area, hardstands, tank foundations);
  - Linac
    - Below Grade Enclosure;
    - Linac Service Building;
  - Transport Line
    - Transport Line Enclosure;
    - Beam Absorber Enclosure;
    - Connection to existing Booster;
  - Cryo Plant Building
  - Mechanical Plant

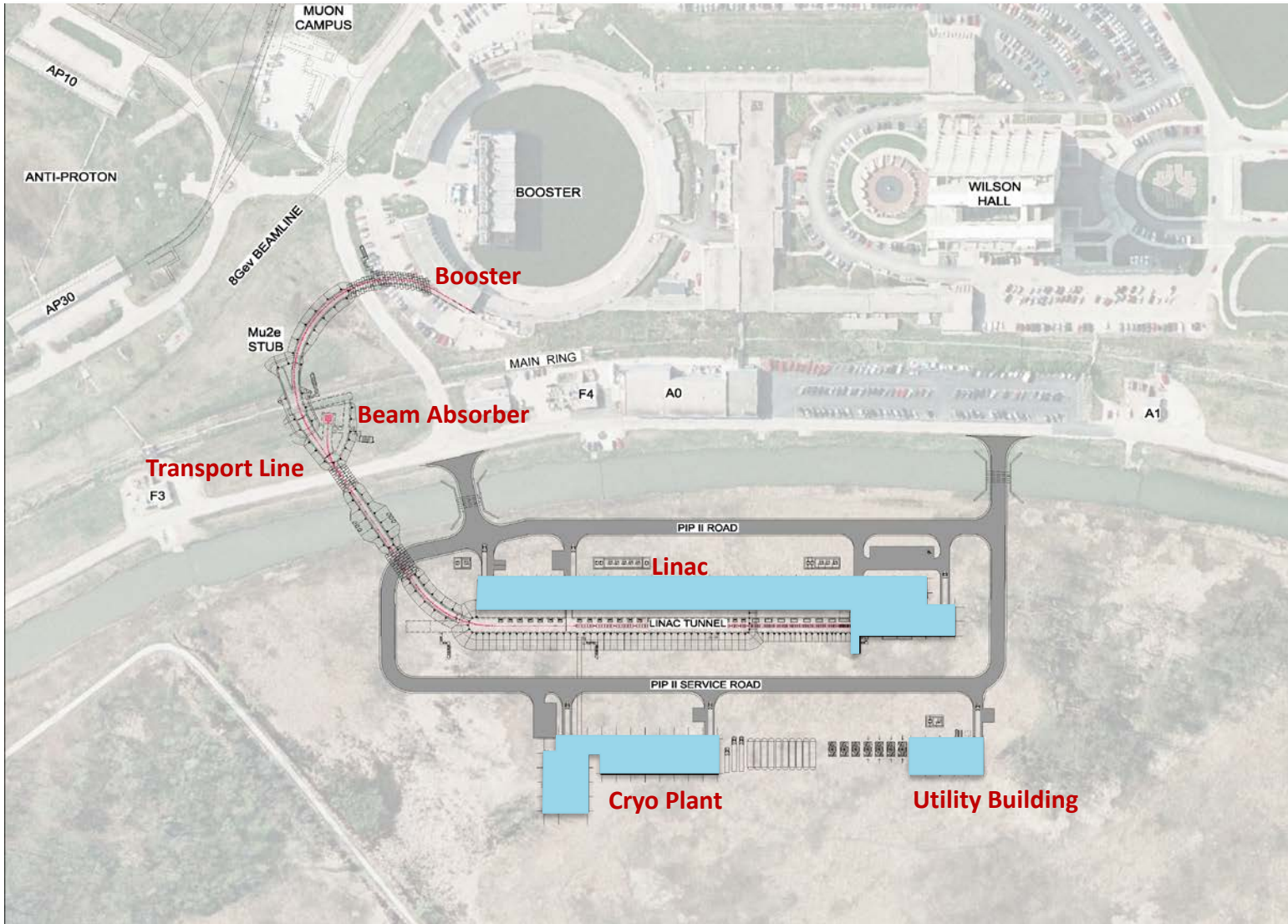
# R&D Phase Goals

- Conceptual Design:
  - Conceptual Design Report Text;
  - Conceptual Design Drawings;
- Life Safety Analysis
- Support Analysis of Alternates
- Support NEPA Process
- Prepare for CD-1

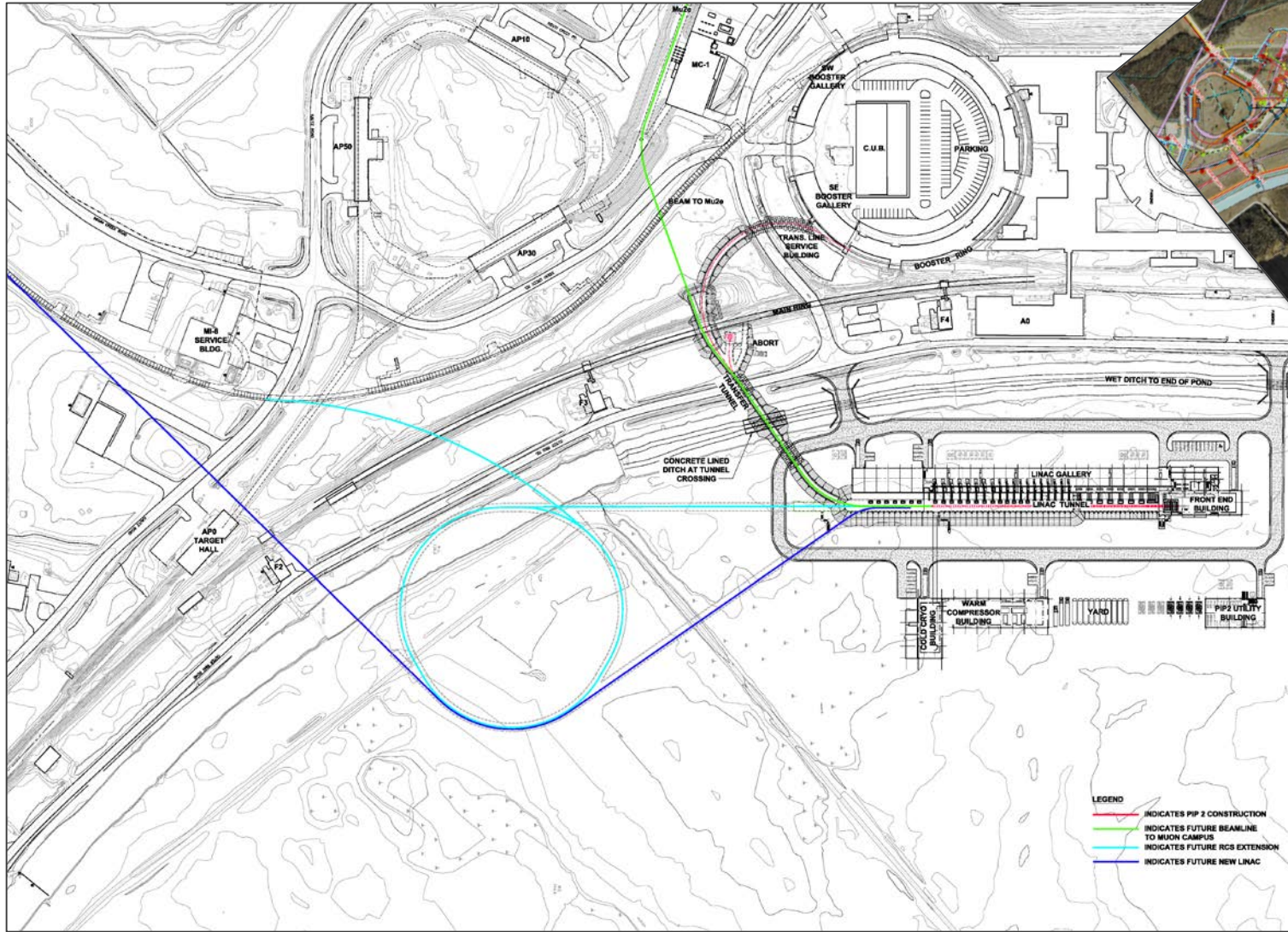
# R&D Phase Goals and Status

- Conceptual Design:
  - Conceptual Design Report Text – Draft complete
  - Conceptual Design Drawings – 90% complete
- Life Safety Analysis – Preliminary report complete
- Support Analysis of Alternates – Complete
- Support NEPA Process – Ongoing
- Prepare for CD-1 – Ongoing

# R&D Status – Overview



# R&D Status – Siting Considerations

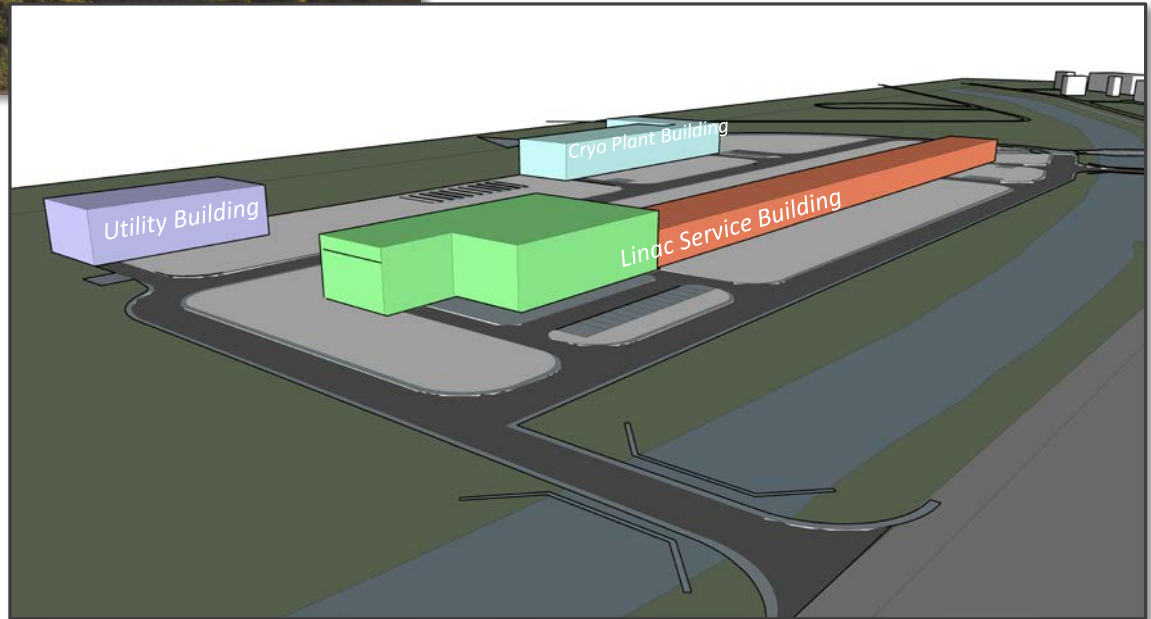


Site Plan with Possible Future Expansion

# R&D Status



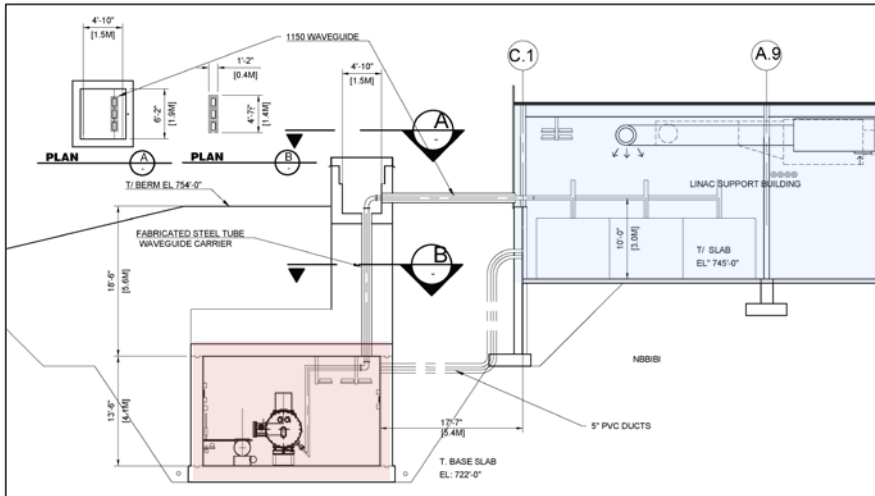
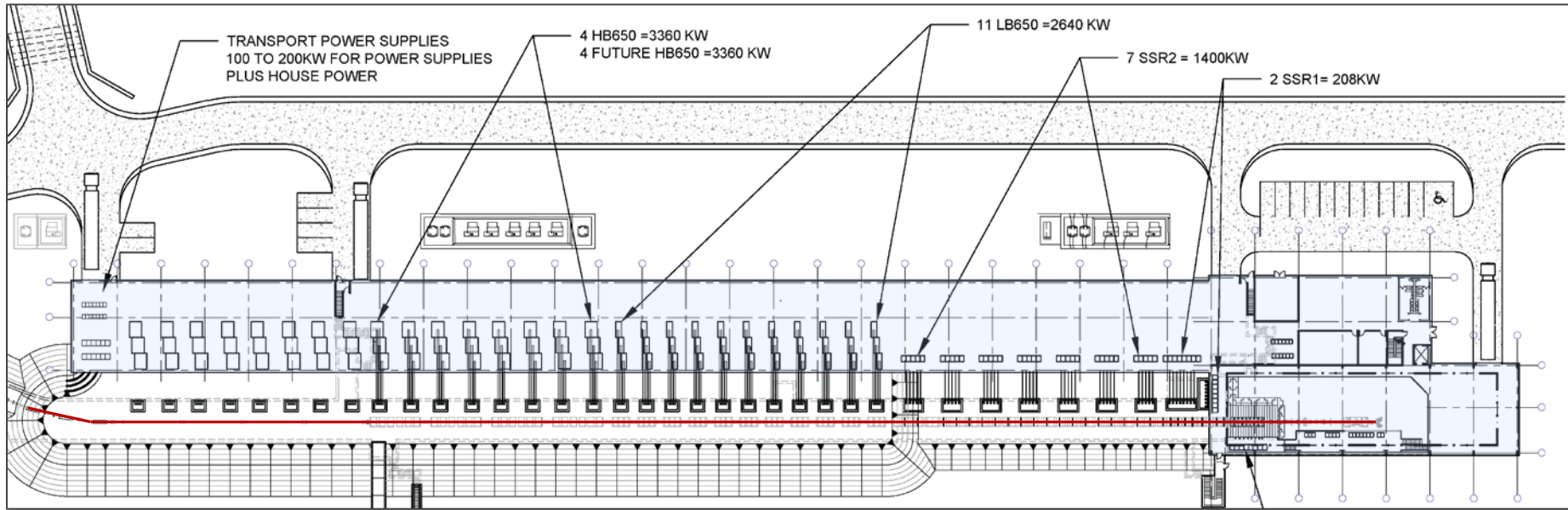
Looking Southeast From Wilson Hall



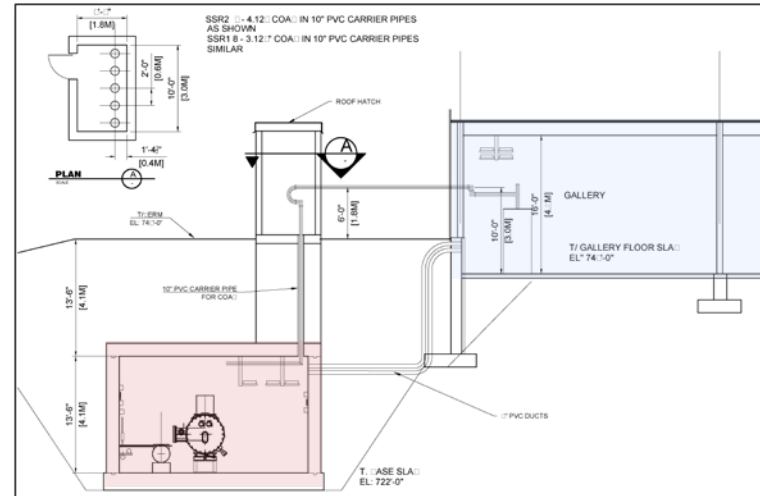
Surface Building Massing



# R&D Status – Linac Plan



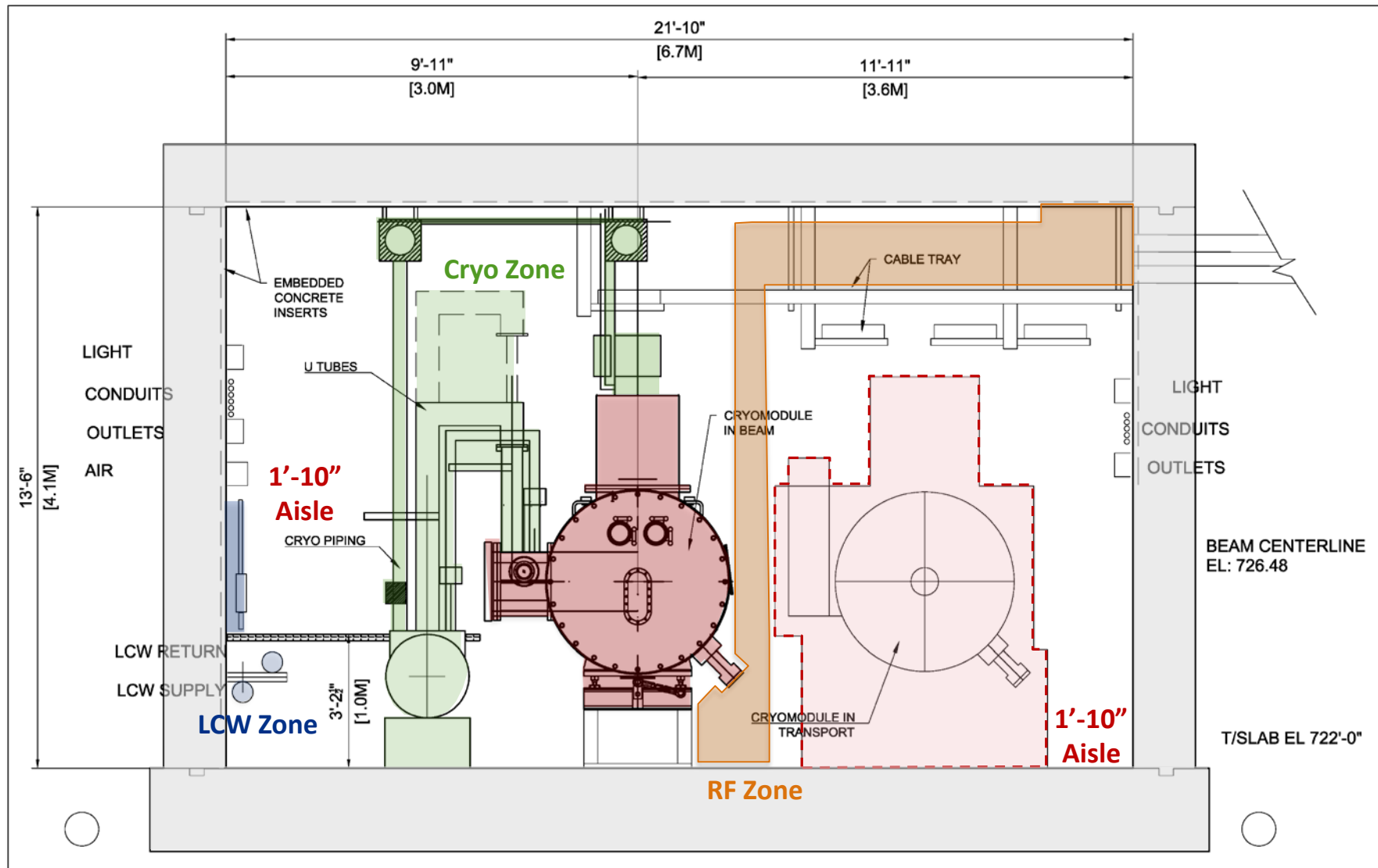
Cross Section Looking South at Waveguide Penetrations



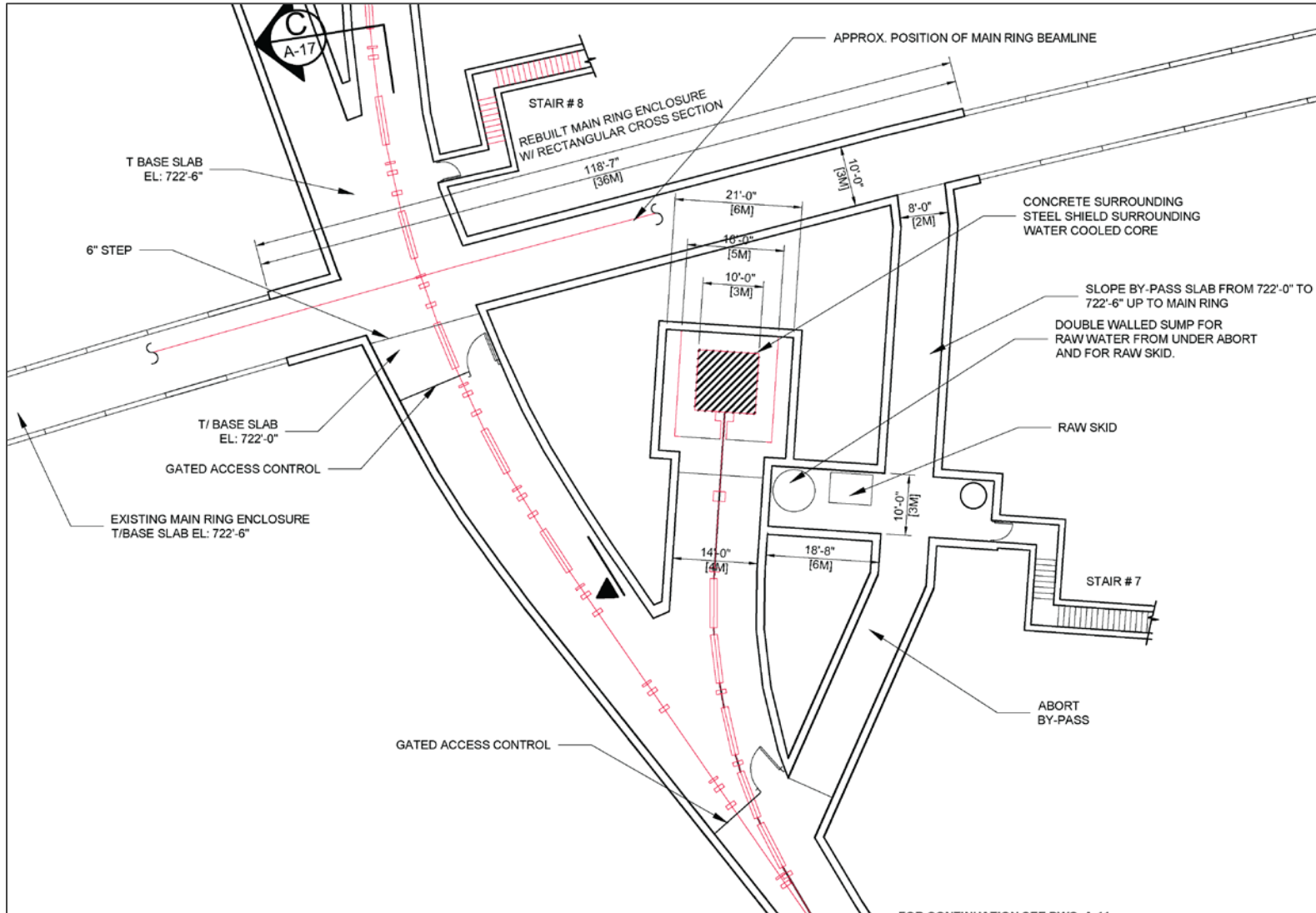
Cross Section Looking South at Coax Penetrations

# R&D Status

## Typical Linac Cross Section

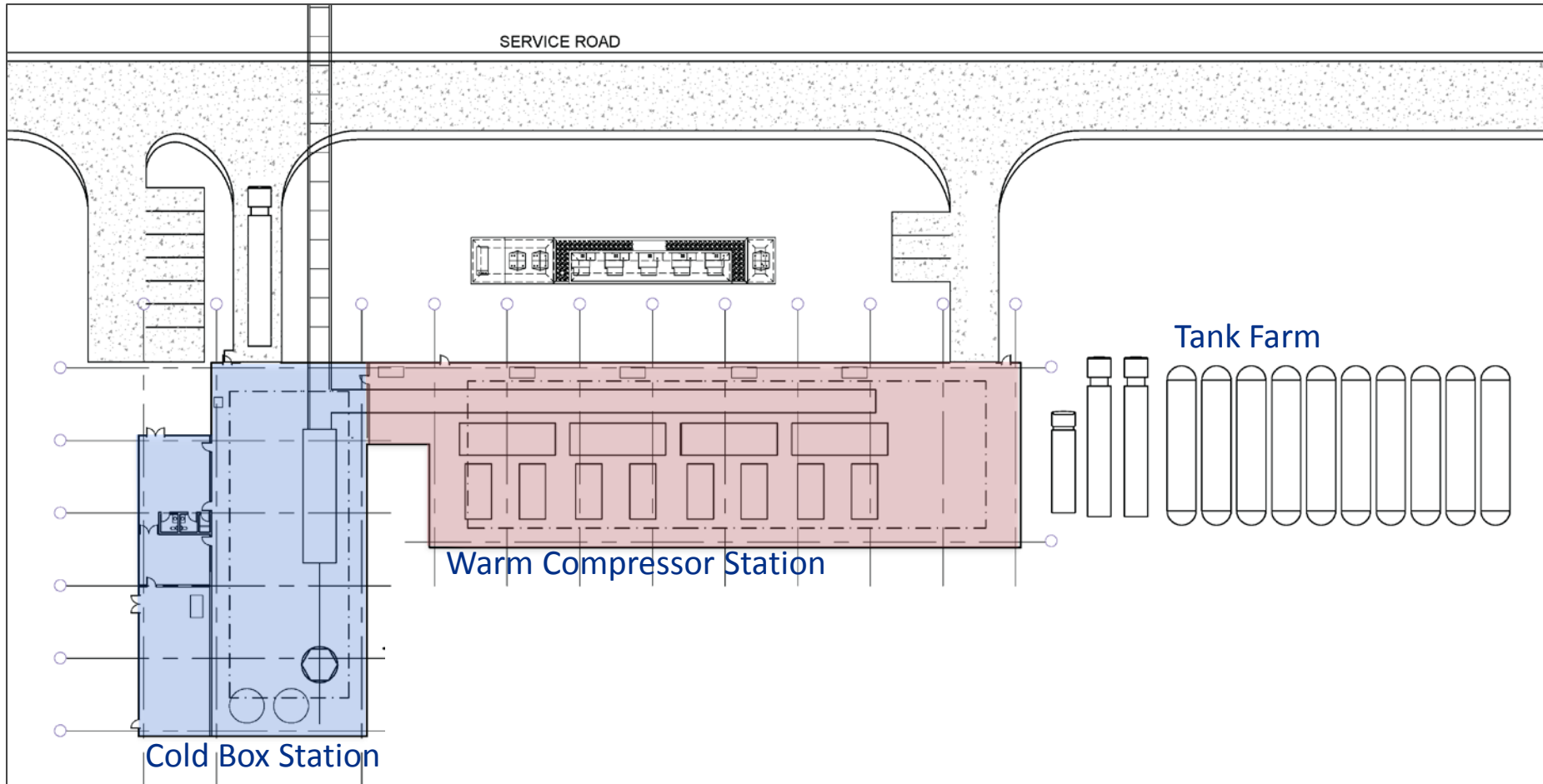


# R&D Status – Main Ring/Transport Line

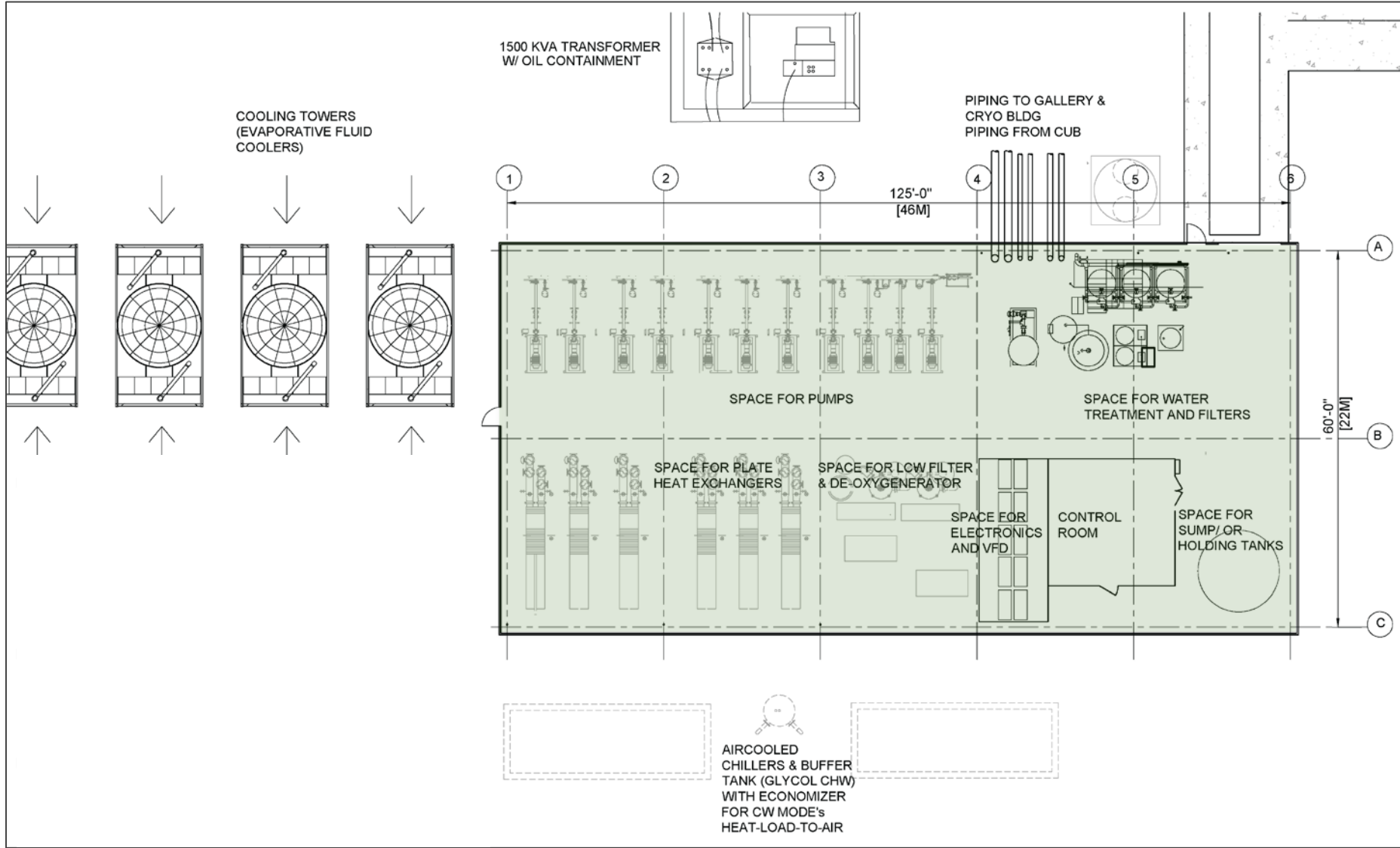




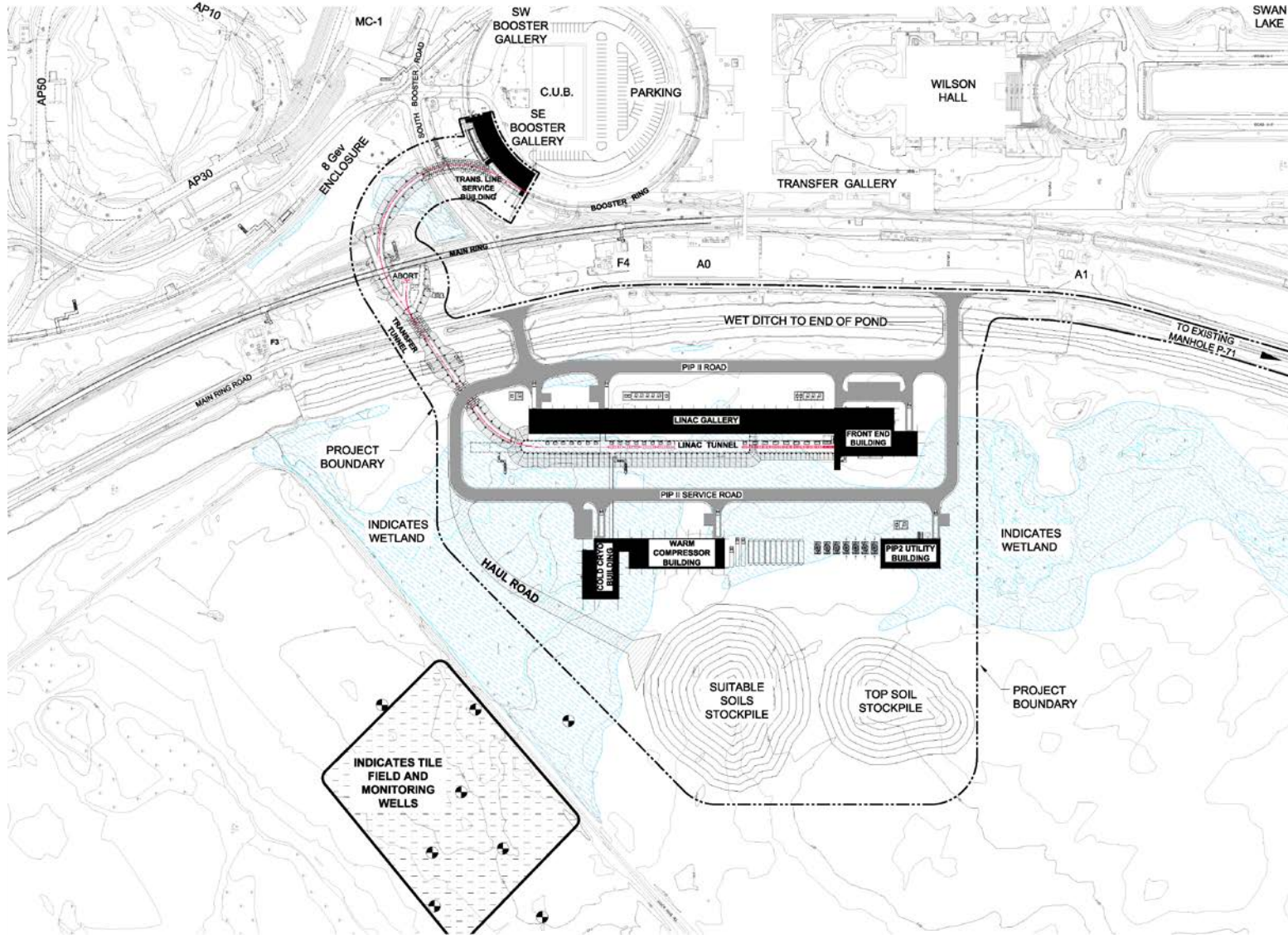
# R&D Status – Cryo Plant



# R&D Status – Utility Building



# R&D Status – Support NEPA



Site Plan with 2016 Wetland Delineation

# R&D Phase Schedule to Complete

- Conceptual Design:
  - Update the Conceptual Design Report Text;
  - Complete the Conceptual Design Drawings;
- Incorporate Life Safety Analysis Recommendations
- Support NEPA process
- Continue to refine and document requirements;
- Select an Architect/Engineer;
  - Update the drawings;
  - Develop a cost estimate;



# IIFC Interface

- Accommodate the cryo plant equipment
- Interface is with Cryogenics Department (Arkadiy)

# Conventional Facilities

- Questions