

# Conventional Facilities Update

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FS Integration/Installation Planning

02 February 2020



# Outline

- Far Site Conventional Facilities
  - Reliability Projects
  - Pre-Excavation
  - Excavation
  - BSI Schedule
- Near Site Conventional Facilities

# Far Site – Phases of Work for LBNF

- Sanford Lab Reliability Projects
  - Upgrading SURF infrastructure and equipment in non-leased space to increase reliability of the systems that will support the project
  - SURF is an old gold mine converted for scientific pursuits
- Pre-Excavation
  - Install and prepare infrastructure to support the LBNF excavation
  - Ready the route to transport rock from the excavation to the Open Cut, both underground and at the surface
- Excavation/Construction
  - Brow/CUC/Drifts/Utilities/Surface building/North Detector cavern/South Detector cavern

# Far Site – Phases of Work for LBNF

## 1. Sanford Lab Reliability Projects

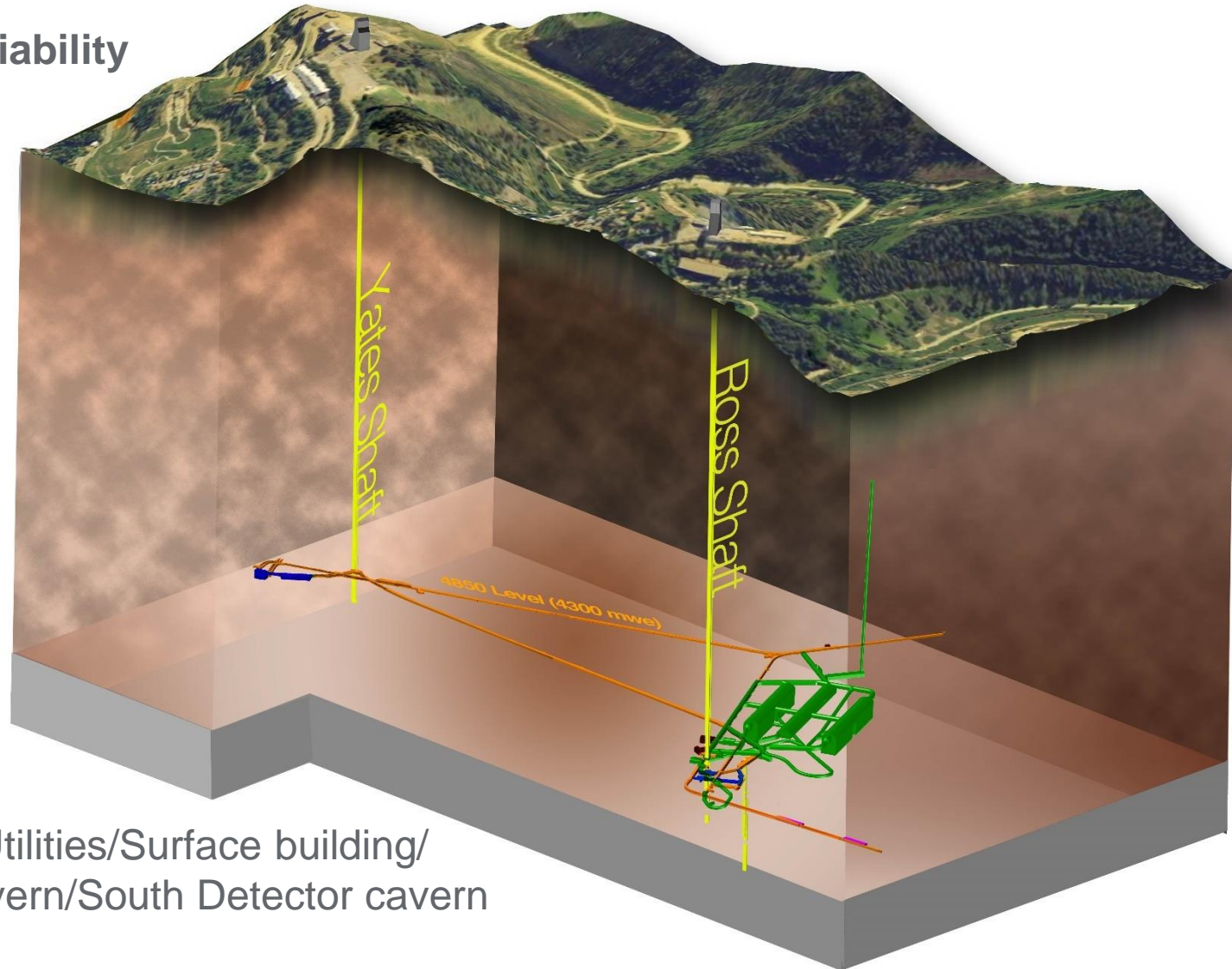
- Ross shaft rehab
- Hoist motor rebuilds, more...

## 2. Pre-Excavation

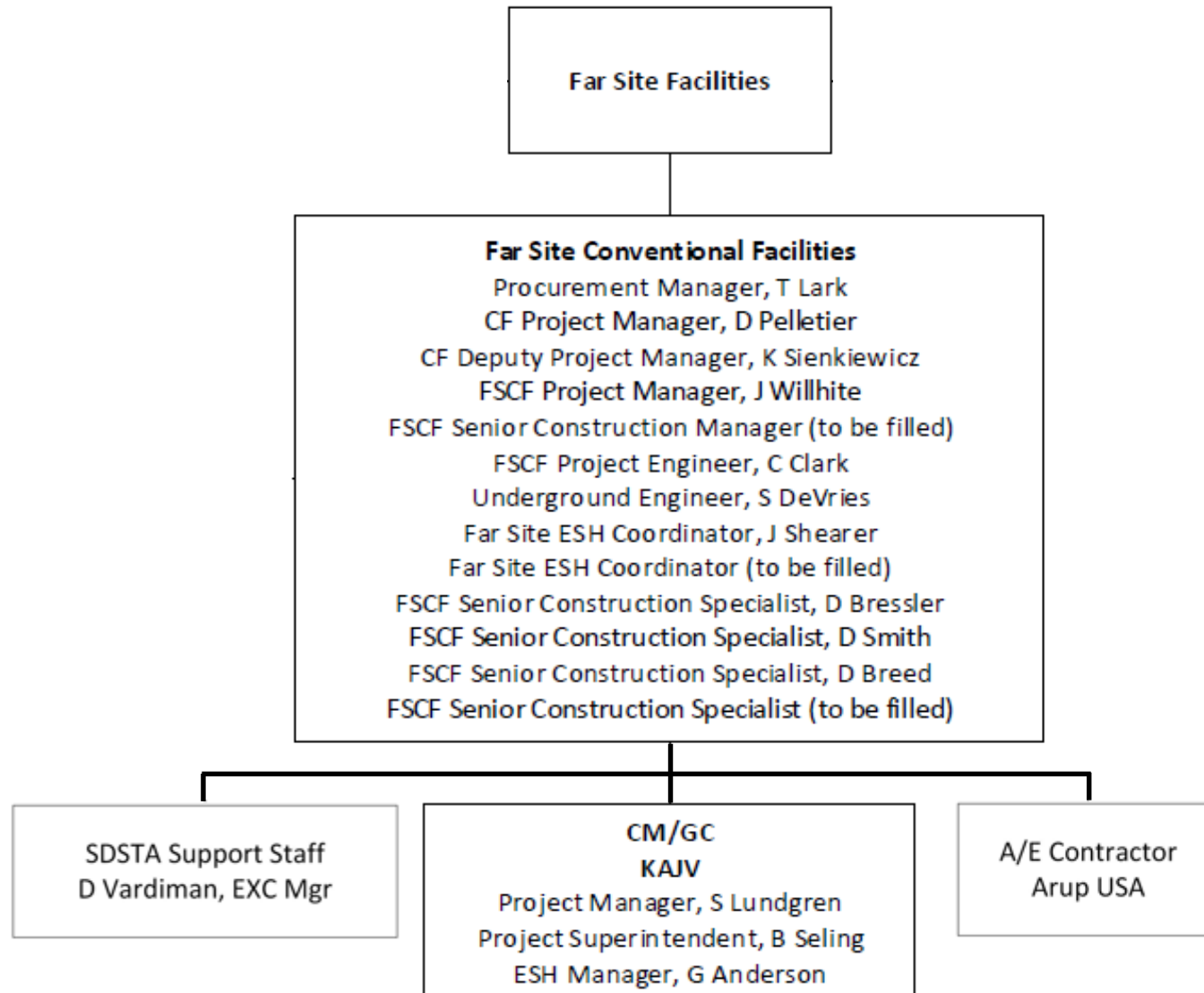
- Rock disposal systems
- Ross headframe upgrade, more...

## 3. Excavation/Construction

- Brow/CUC/Drifts/Utilities/Surface building/  
North Detector cavern/South Detector cavern



# FSCF Management Structure



# Far Site – Phases of Work for LBNF

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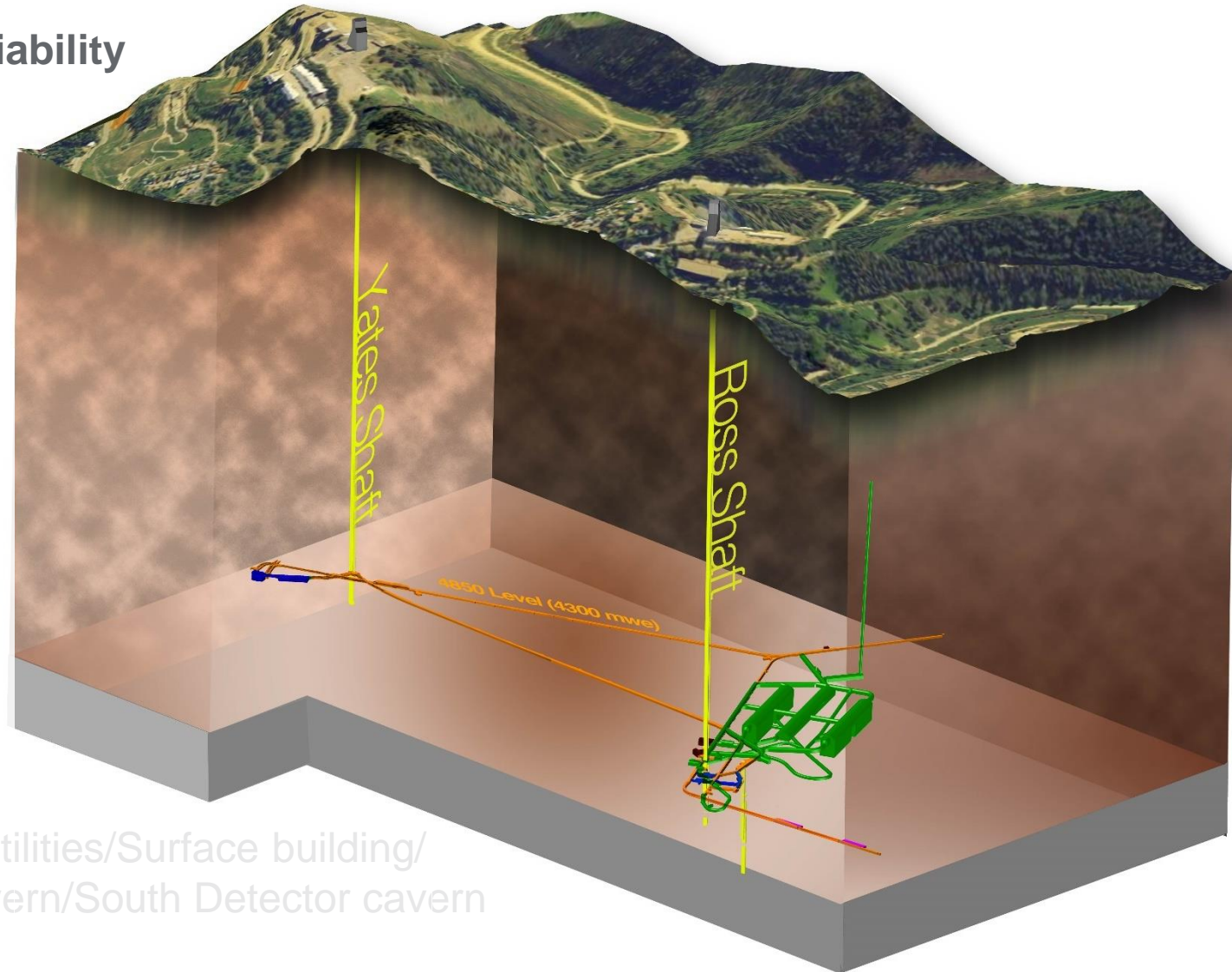
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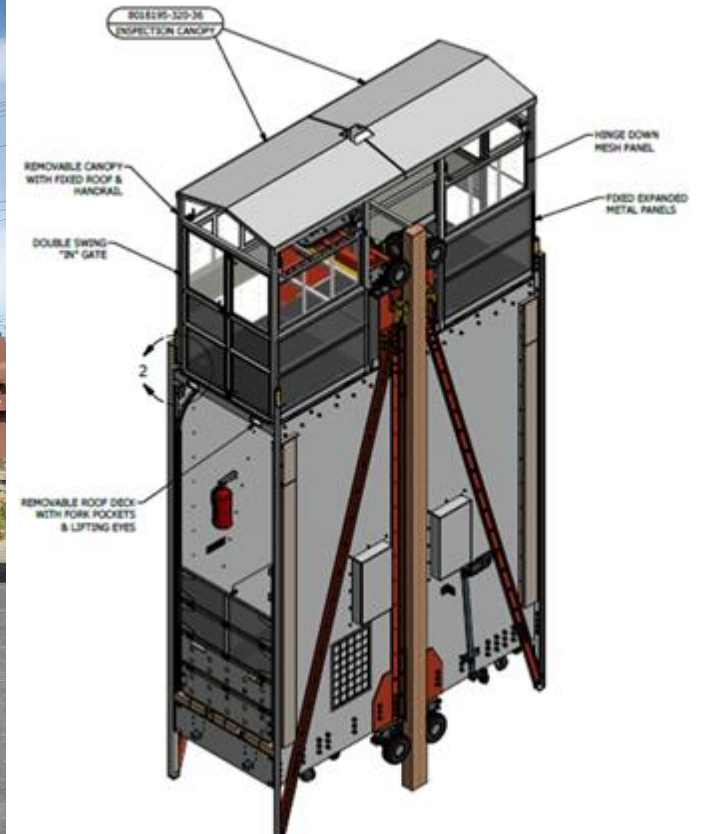
## Reliability Projects Status

- Ross Skips
- Ross Cage
- 4850 Refuge Chamber Upgrade
- Oro Hondo Fan VFD
- Ross Shaft Rehabilitation
- Ross Crusher Roof Repairs
- Ross Hoists Bearings & Bushings
- Ross Hoists Drives/Brakes/Clutches
- Ross Hoists Motor Rehabilitation

### Team mobilized and performing this work:

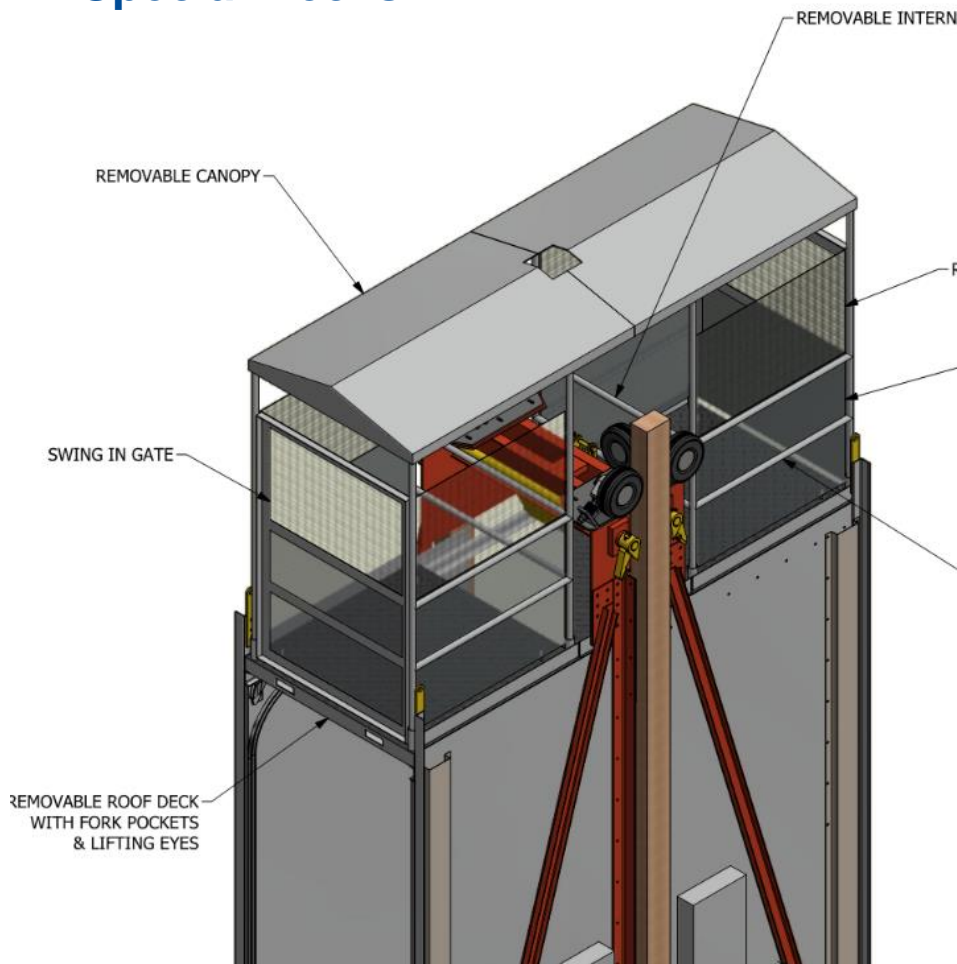
- 26 total direct SDSTA employees plus indirect support
- Ross Shaft crews and hoist operators (divided into 4 crews)
- KAJV team for the Reliability Projects include 2 crews of 5 for the shaft work and 4 for the roof repairs

# Reliability Projects: Ross Skips and Ross Cage

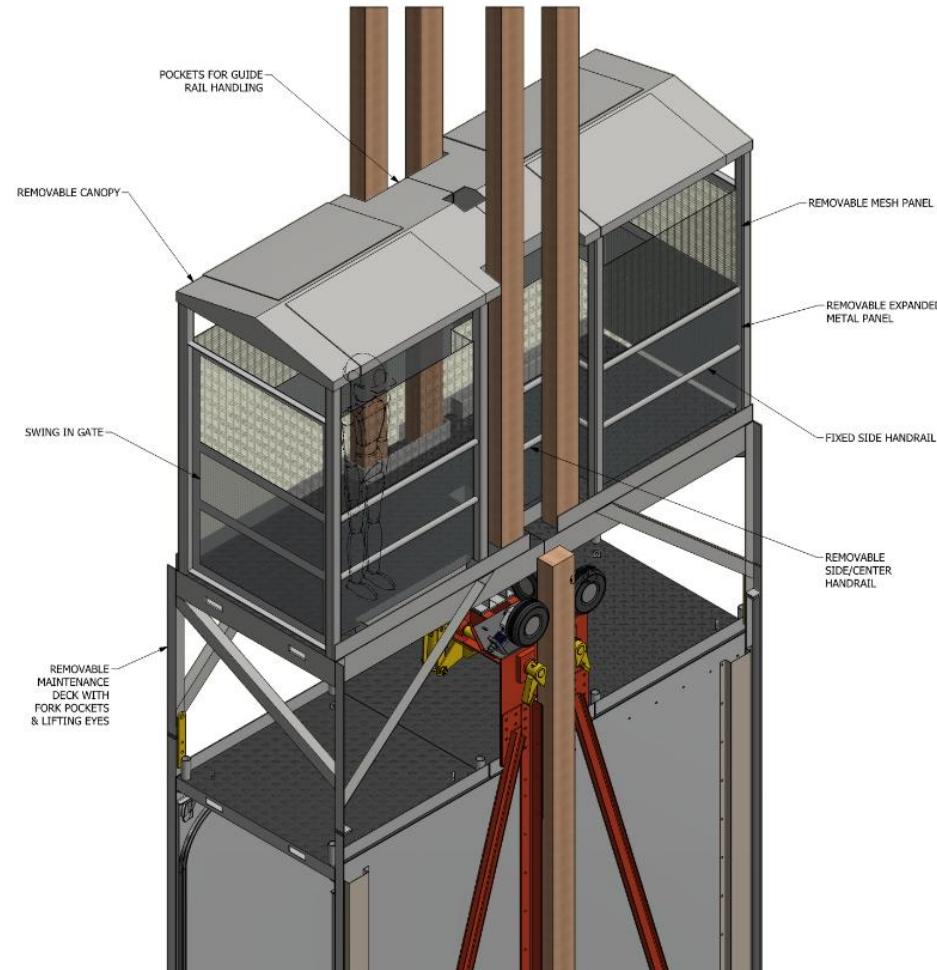


# Reliability Projects: Ross Cage Replacement

## Special Decks



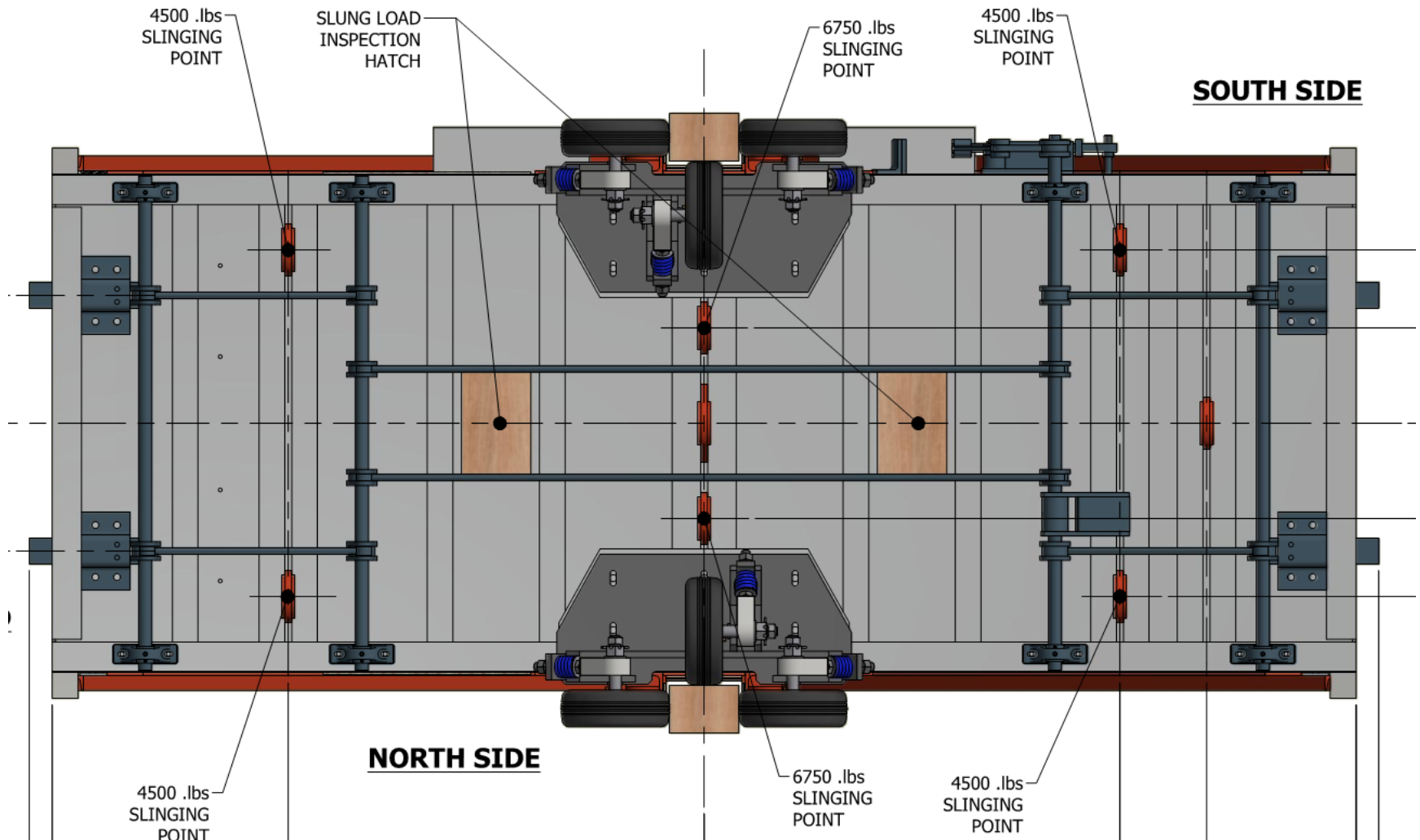
**Inspection Deck**



**Maintenance Deck**

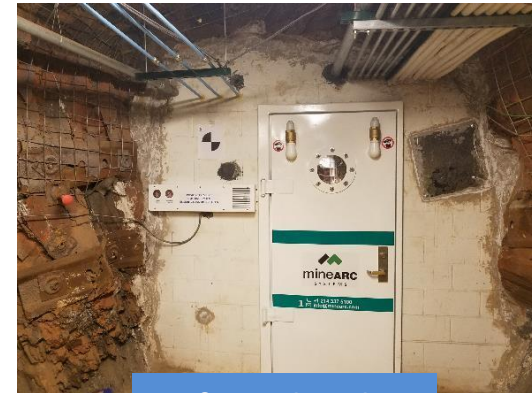
# Reliability Projects: Ross Cage Replacement

## Underside View

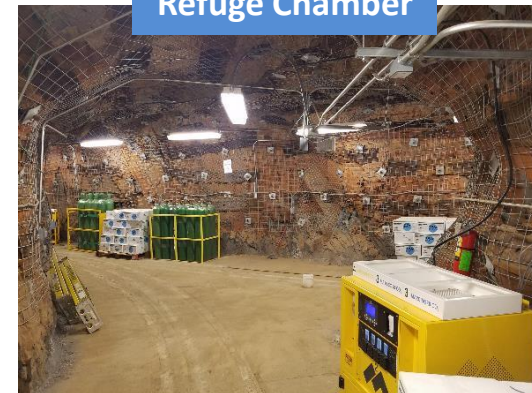


# Reliability Projects Status

- Ross Skips
- Ross Cage
- 4850 Refuge Chamber Upgrade **Completed**
- Oro Hondo Fan VFD **In Final Acceptance**
- Ross Shaft Rehabilitation **Over 95% completed**



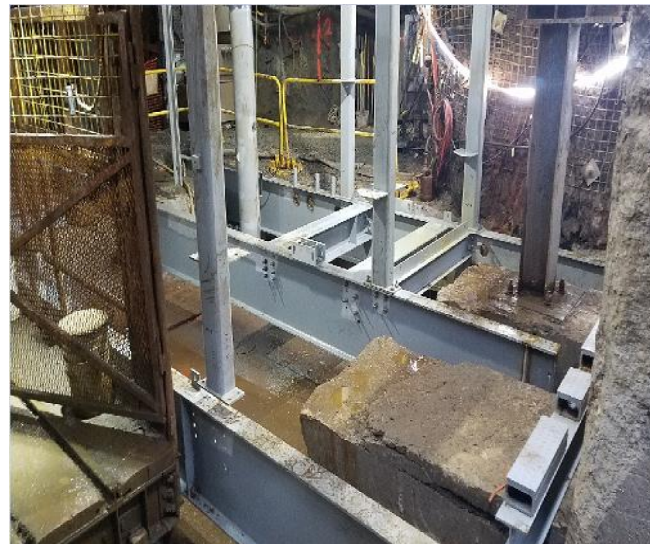
Refuge Chamber



Oro Hondo Fan

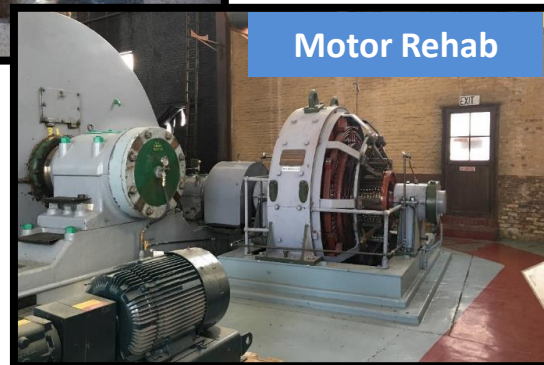


Ross Shaft Rehab



# Reliability Projects Status

- Ross Crusher Roof Repairs **Almost completed**
- Ross Hoists Bearings & Bushings **In process, QA check requires bearing rework**
- Ross Hoists Drives/Brakes/Clutches **In process, evaluating technical change**
- Ross Hoists Motor Rehabilitation **In process, pending D/B/C direction**



# Reliability Projects Status

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- Ross Shaft Rehabilitation
- Ross Crusher Roof Repairs
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All on schedule to be completed prior to excavation.

# Far Site – Phases of Work for LBNF

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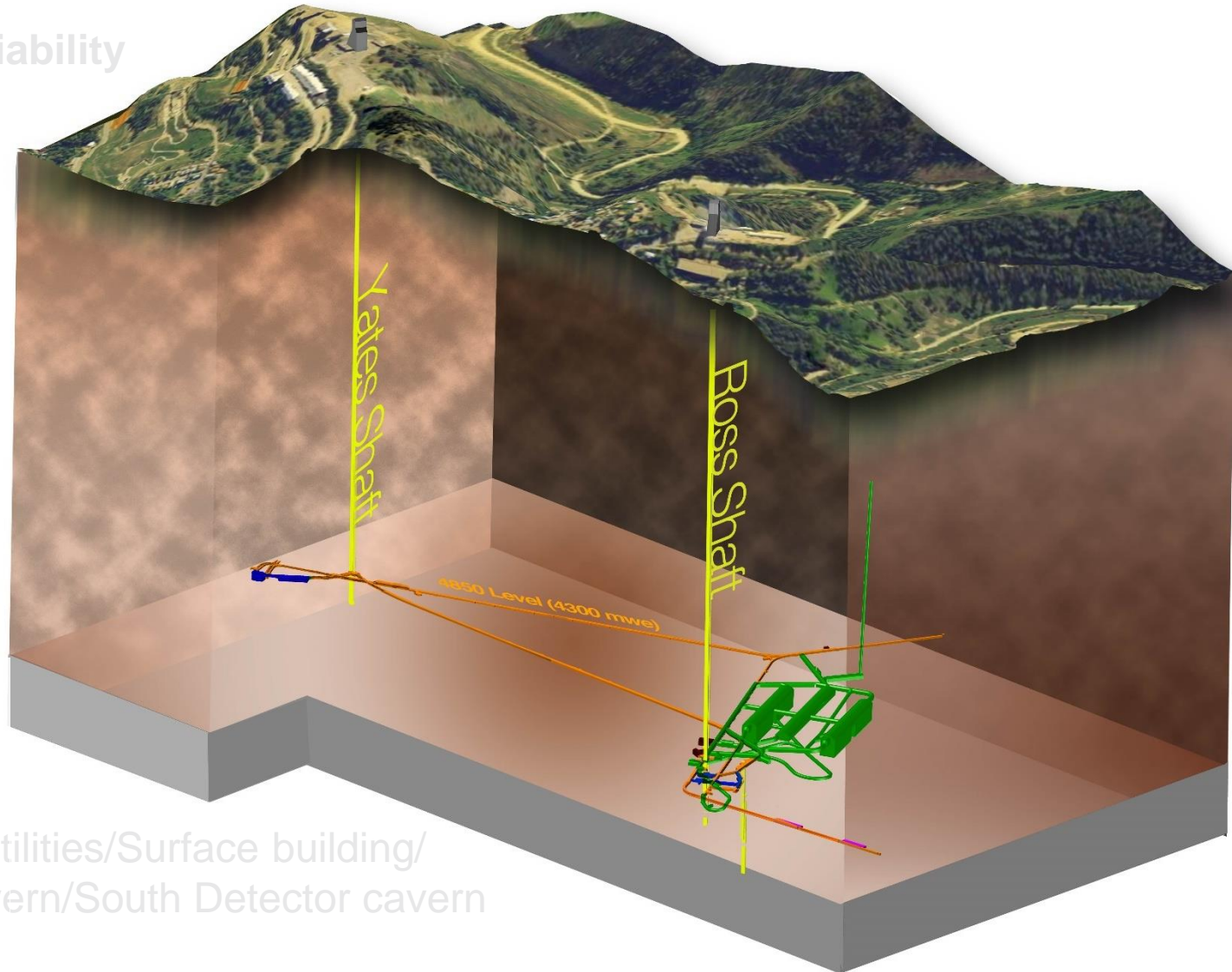
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- Hoist motor rebuilds, more...

## 2. Pre-Excavation

- Rock disposal systems
- Ross headframe upgrade, more...

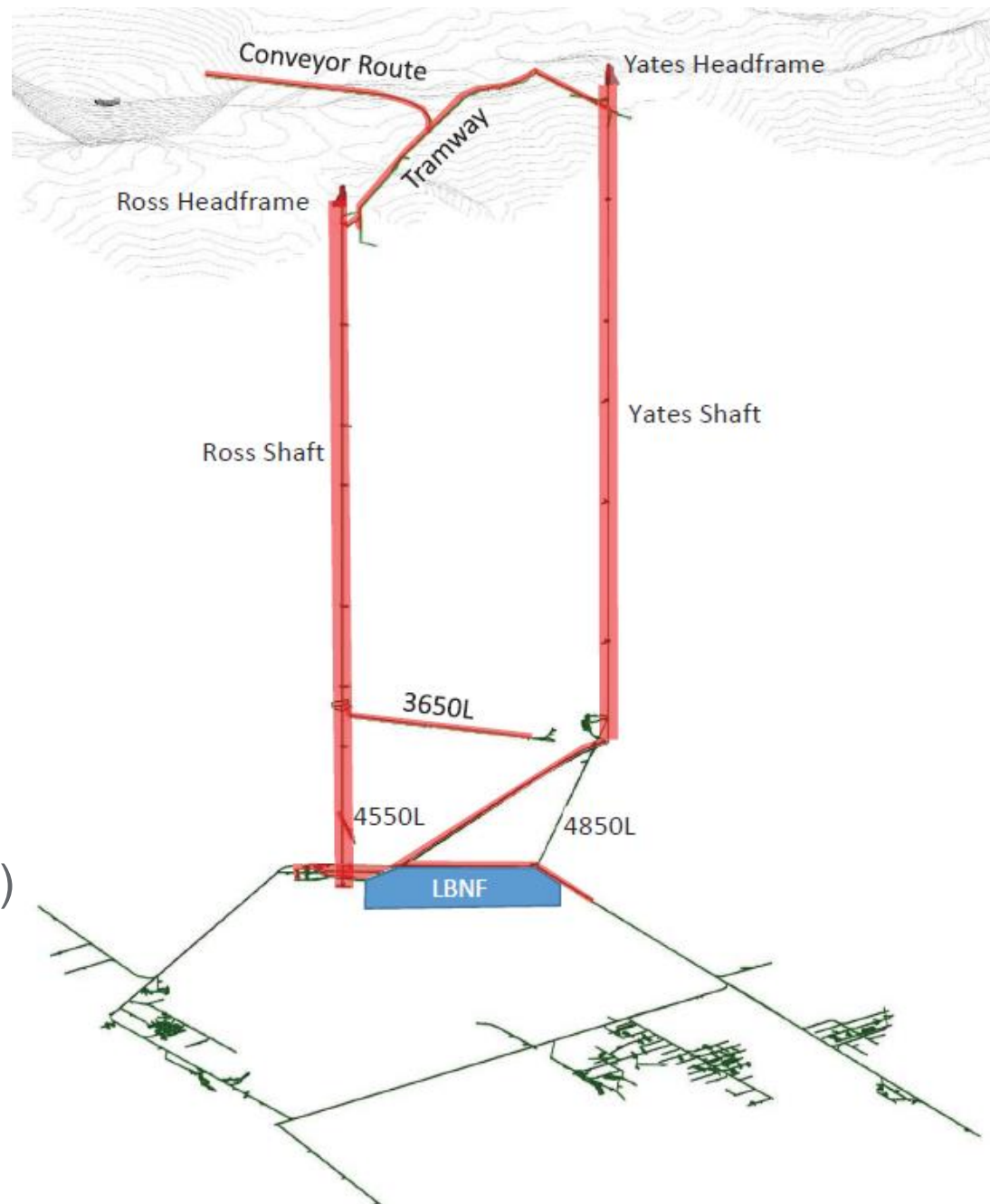
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North Detector cavern/South Detector cavern



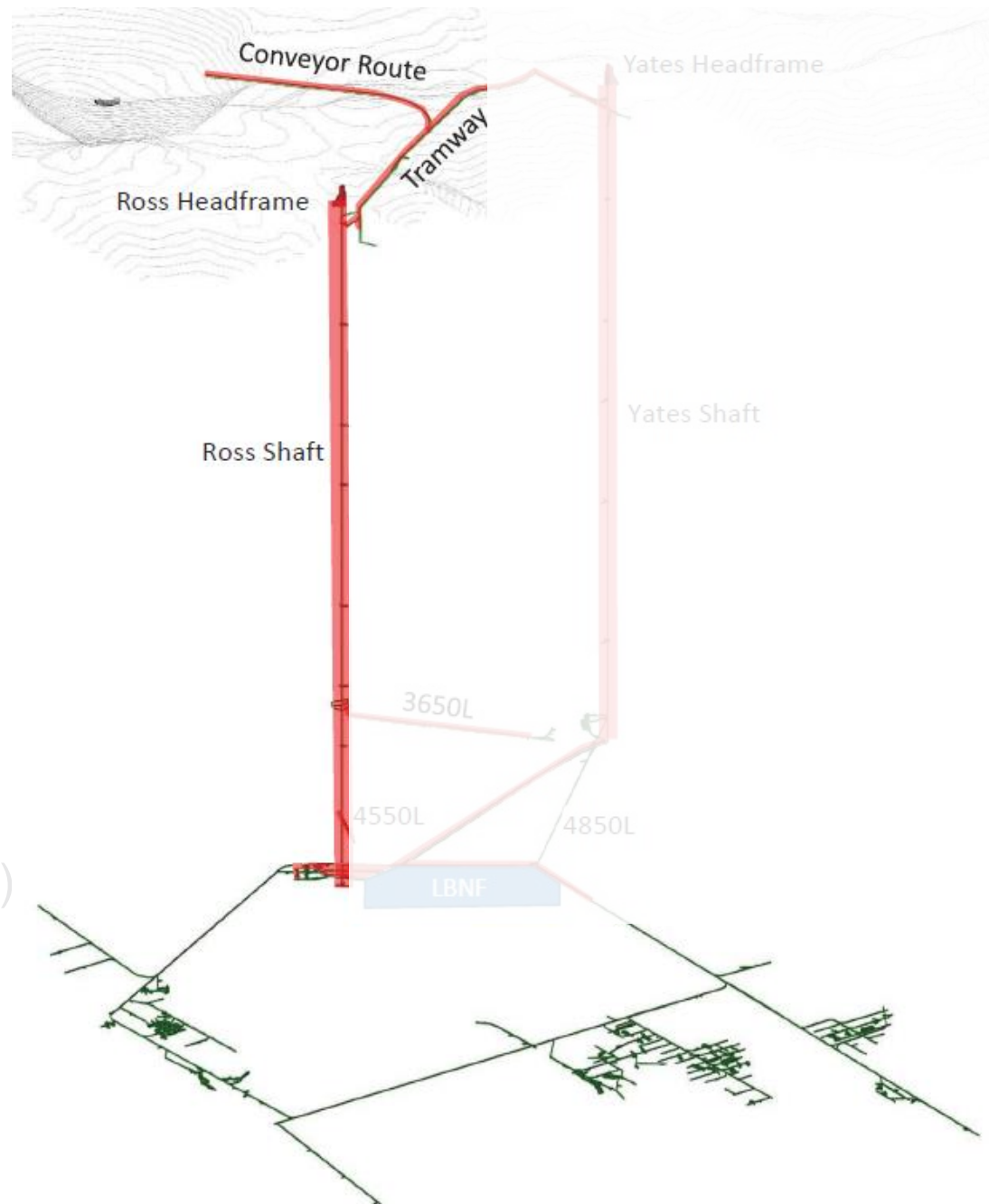
# Pre-Excavation Status

- Ore Pass Rehabilitation
- Skip Loader
- Surface Waste Rock Handling System (Crusher/Ore Bin/Conveyor)
- Tramway Rehabilitation
- Ross Headframe Reinforcement
- Fire Water Reservoir (future)
- Electrical Infrastructure Upgrades
- Early Works

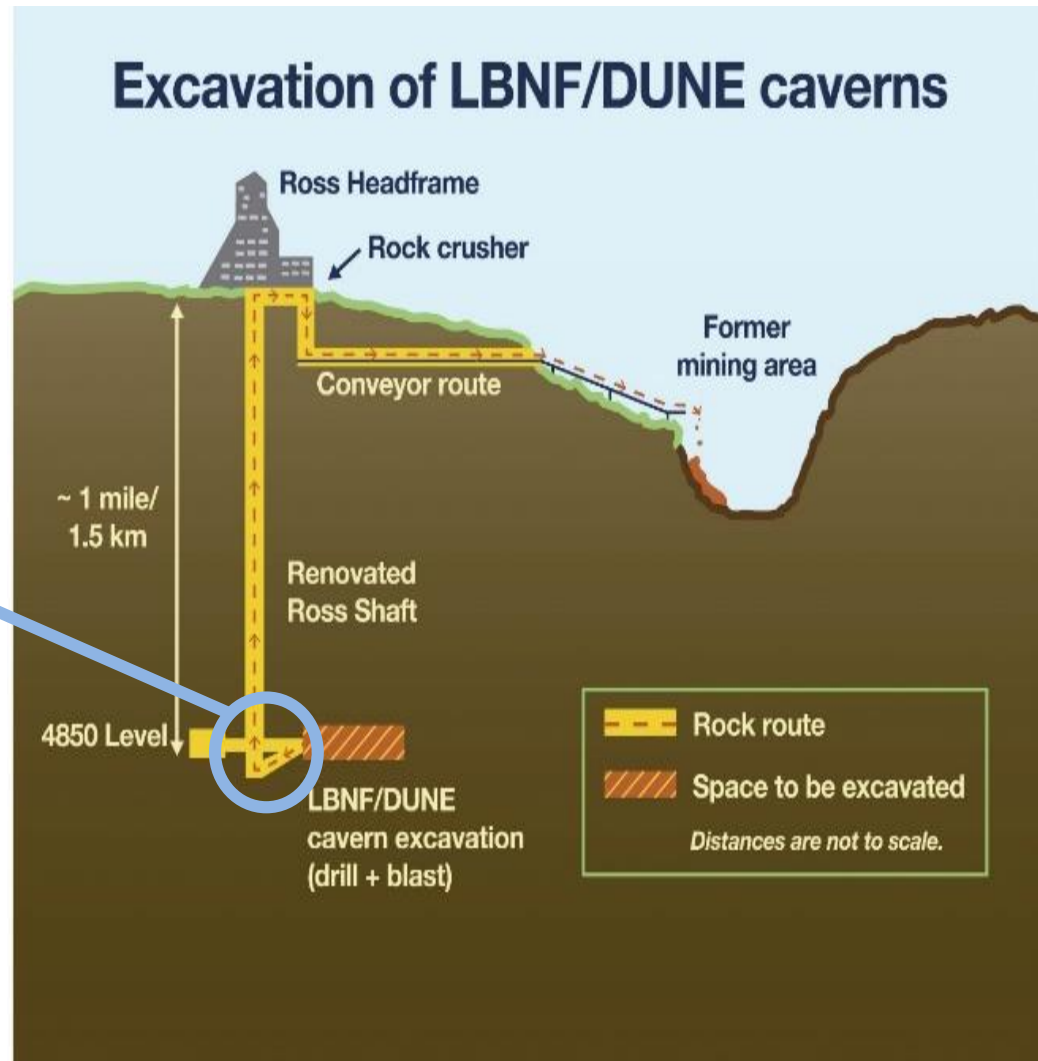
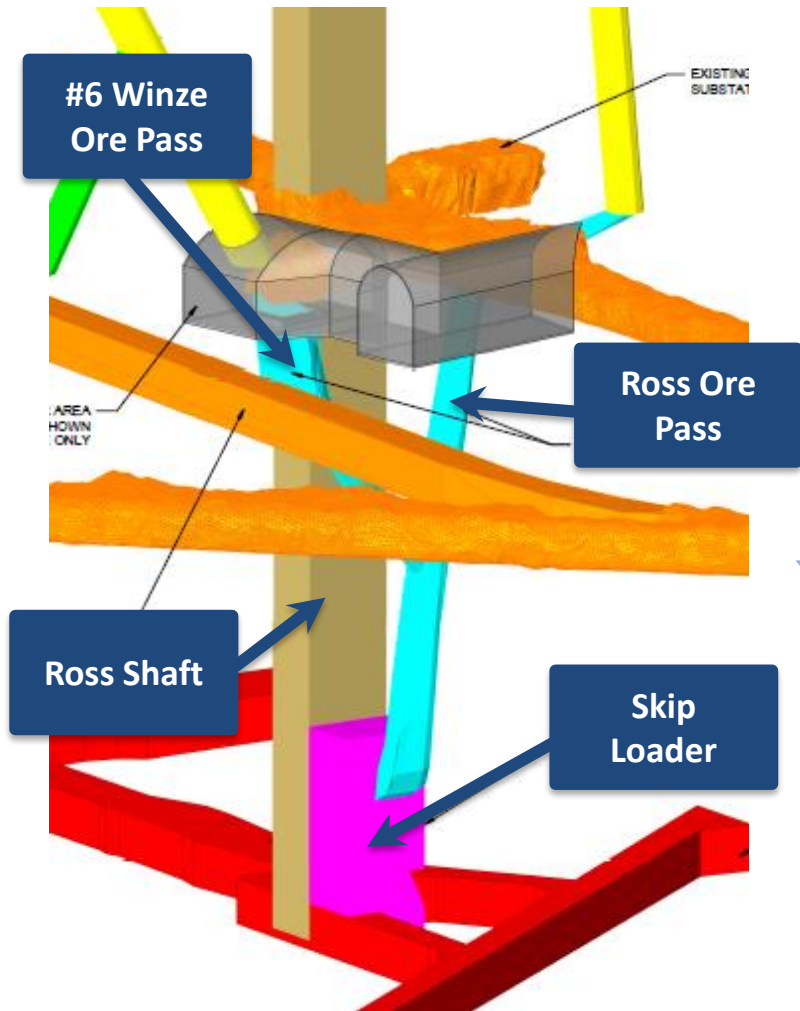


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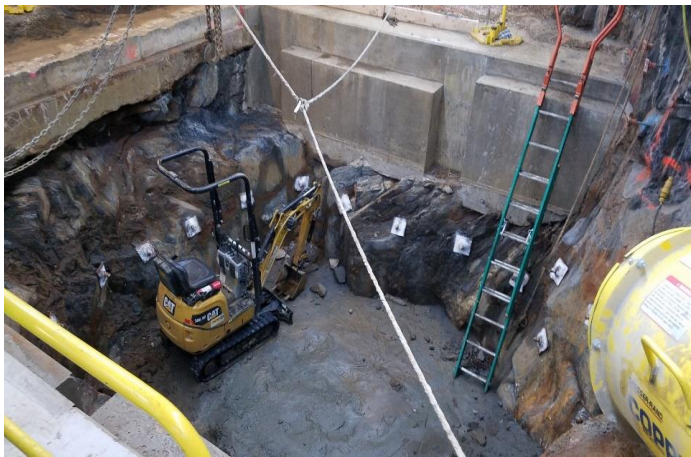
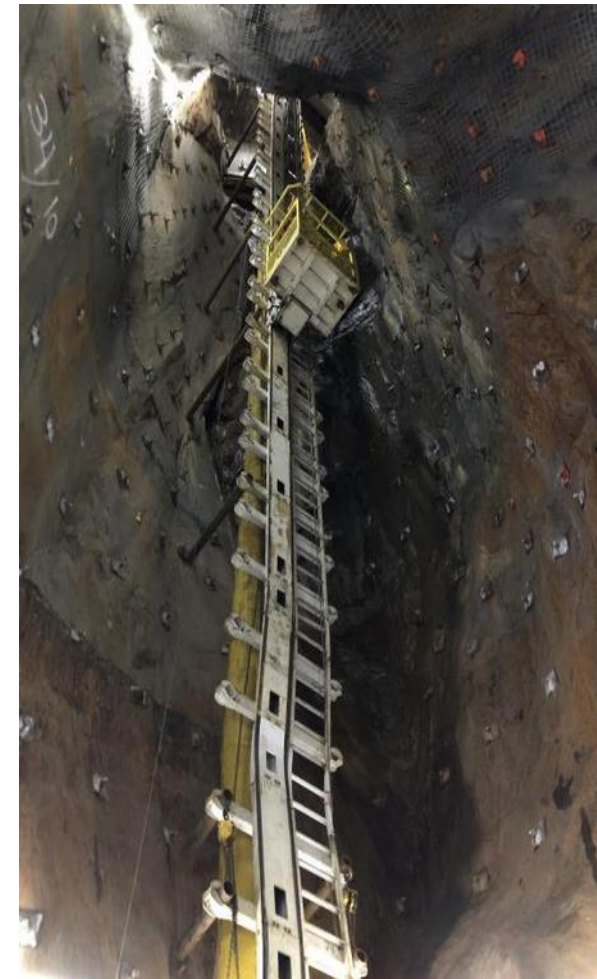
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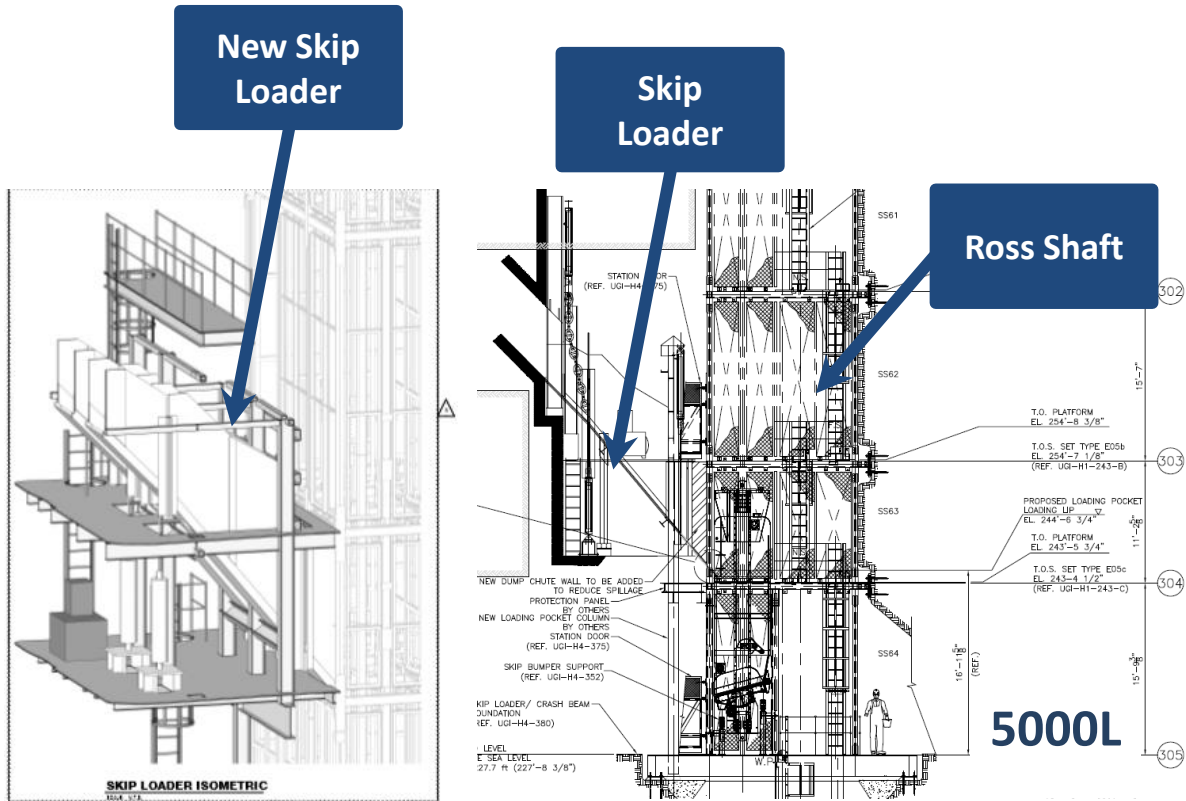
# Pre-Excavation: Ore Pass Rehab



## Pre-Excavation: Ore Pass Rehab



# Pre-Excavation: Skip Loader

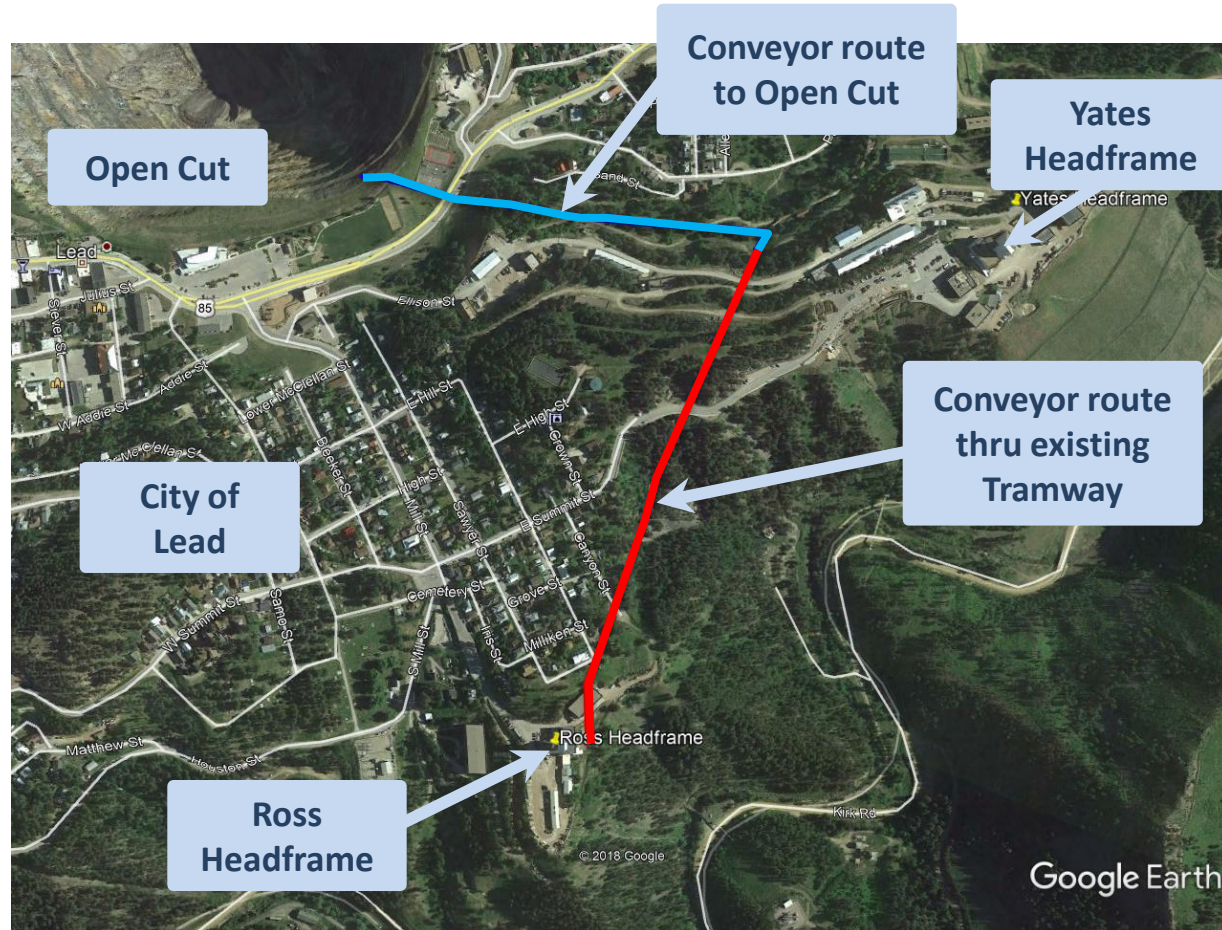
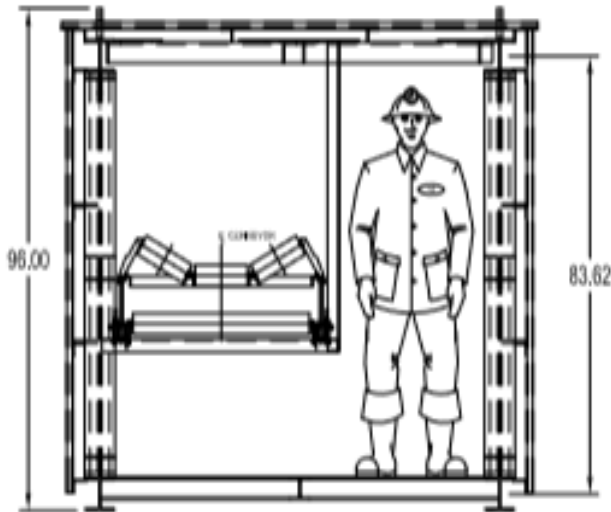


# Pre-Excavation: Surface Waste Rock Handling System

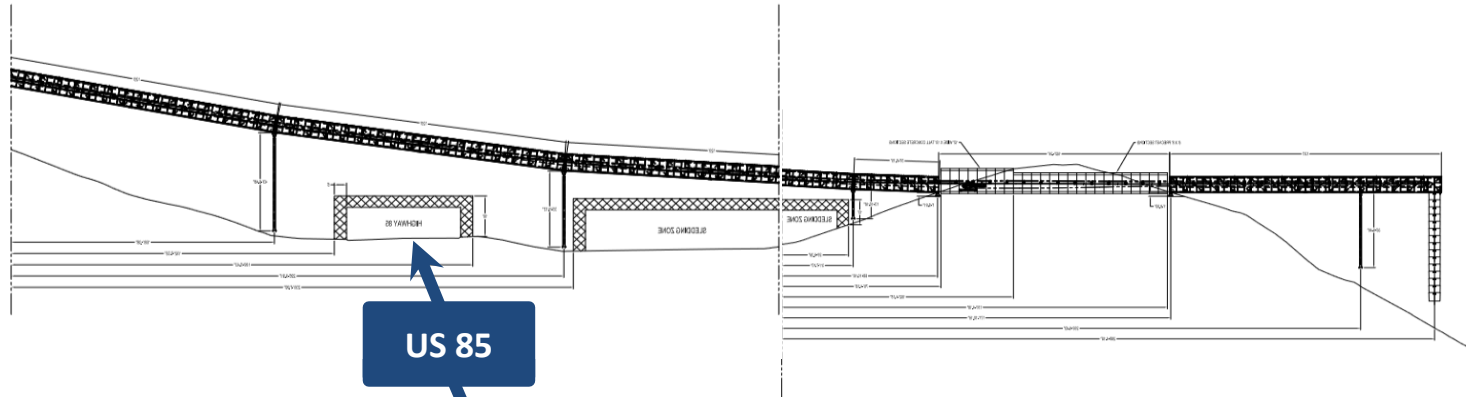
## Crusher



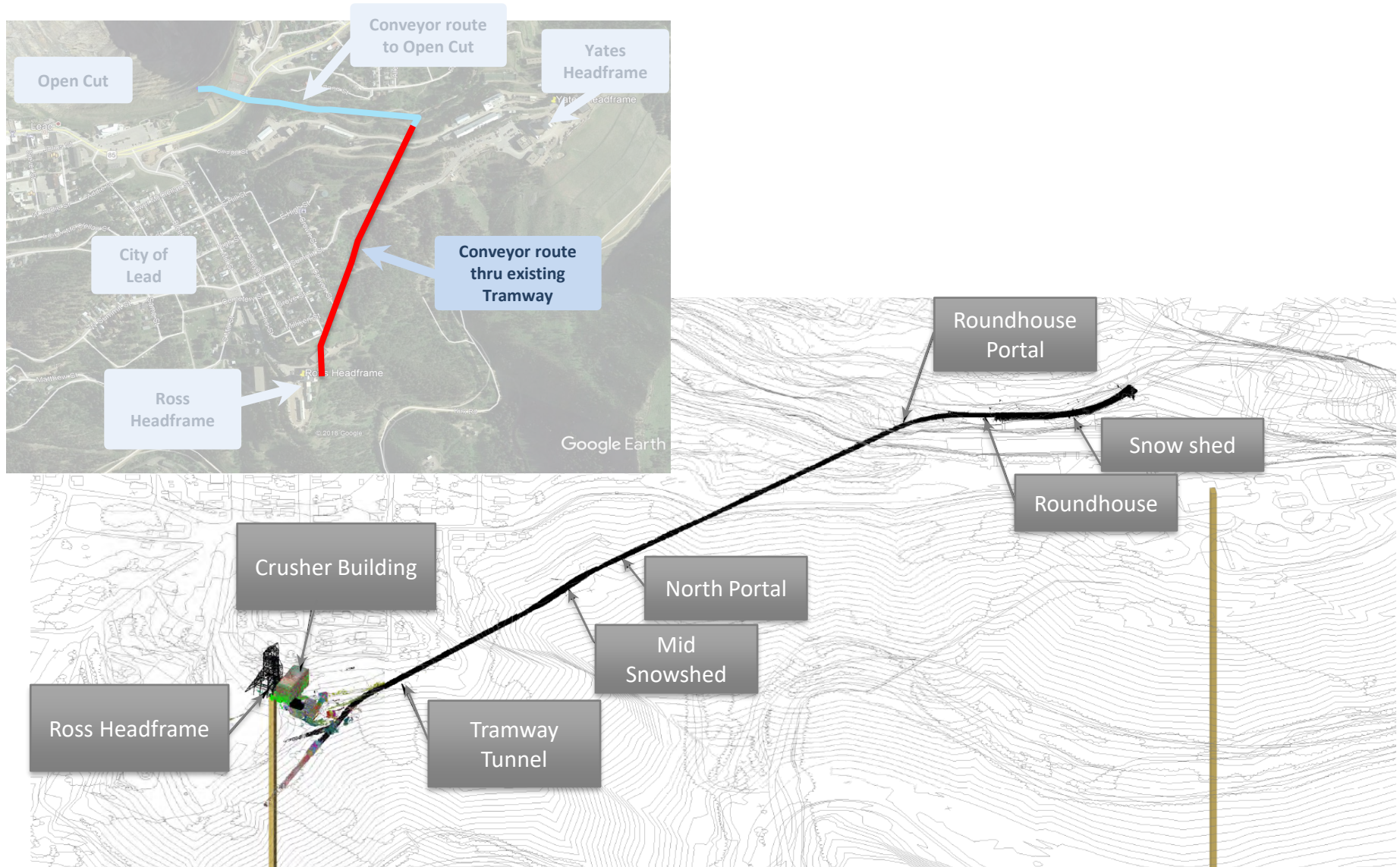
# Pre-Excavation: Surface Waste Rock Handling System Conveyor



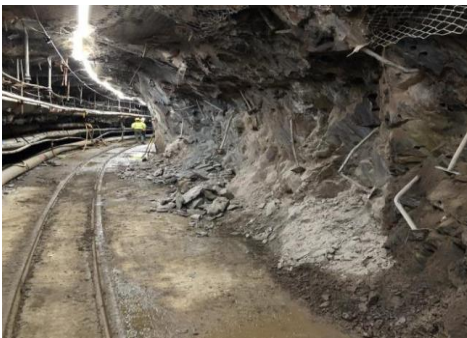
# Pre-Excavation: Surface Waste Rock Handling System Conveyor



# Pre-Excavation: Tramway Rehabilitation

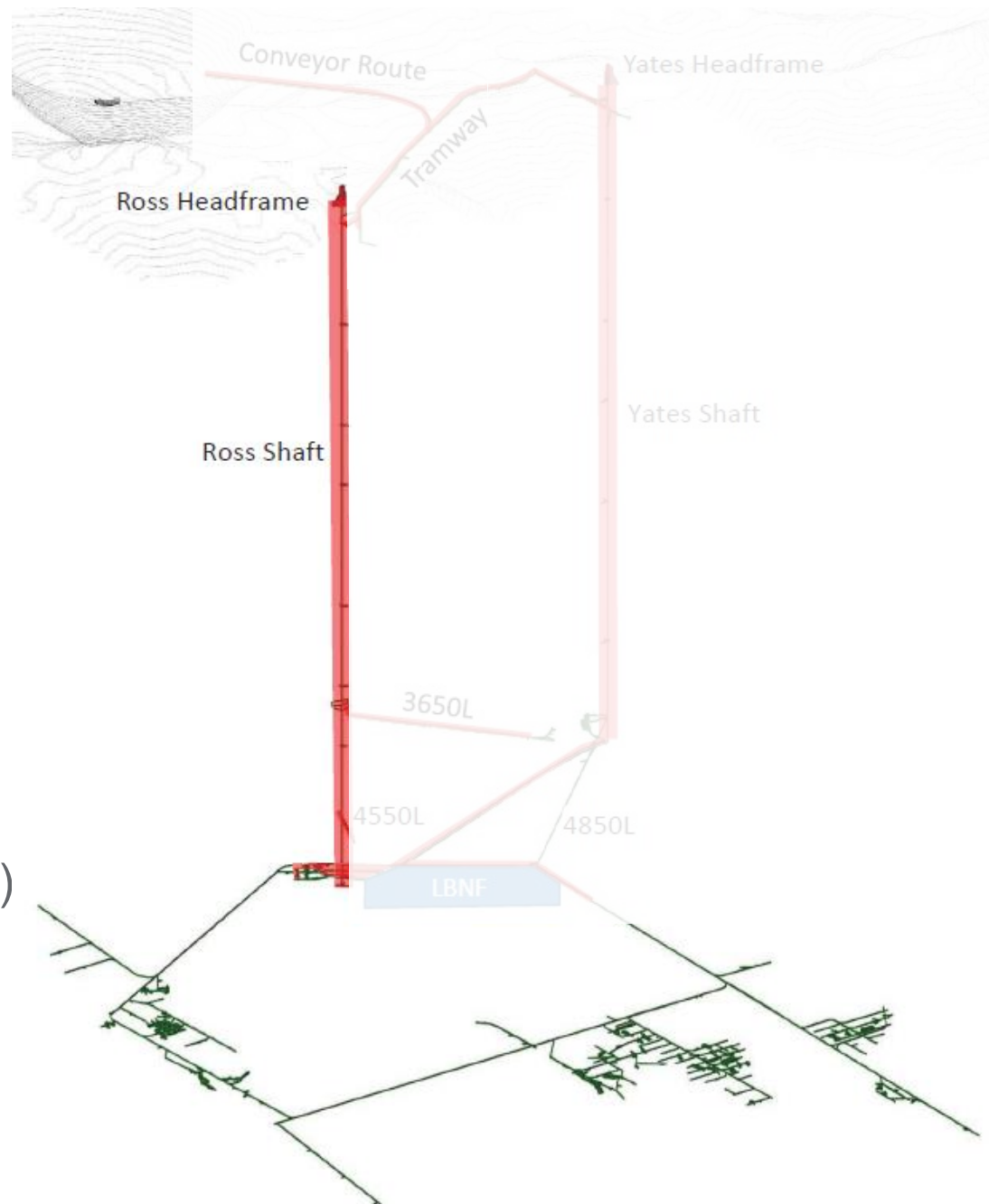


# Pre-Excavation: Tramway Rehabilitation

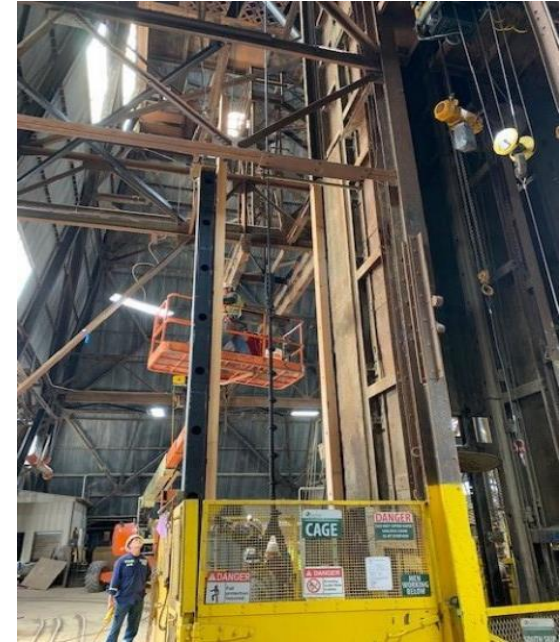
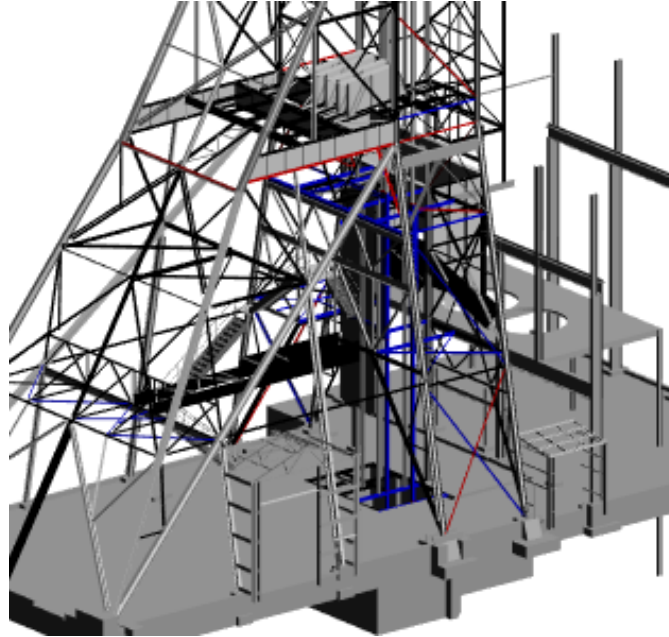


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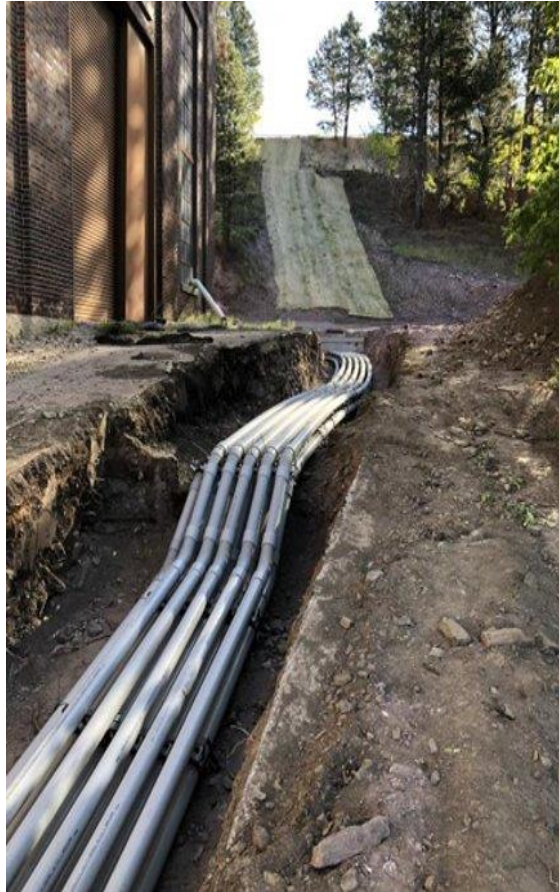
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# Pre-Excavation: Ross Headframe Reinforcement

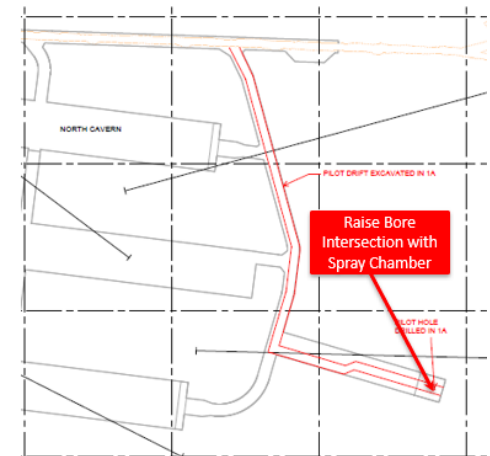
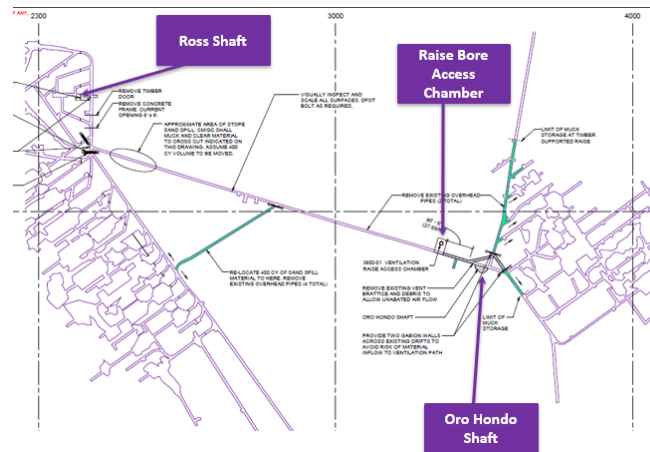
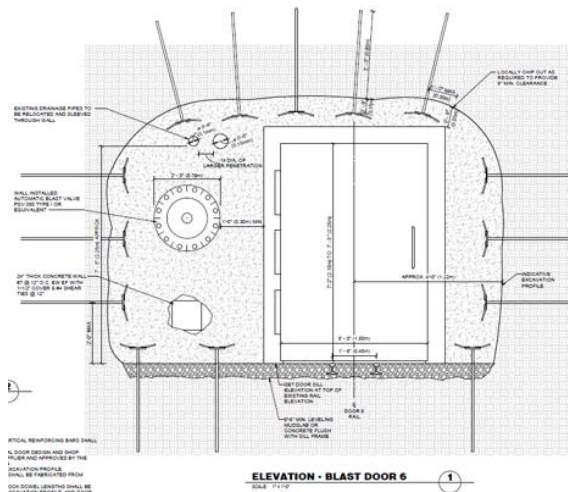


# Pre-Excavation: Electrical Infrastructure Upgrades



## Pre-Excavation: Early Works

- VE item that resulted in schedule savings of approximately 6-7 months of overall FSCF project schedule
- Moved scope from Excavation to Pre-Excavation
  - Blast doors, grouting, and 4700L fan
  - 3650L Rehabilitation to support early Raise Bore mobilization
  - 4850L Pilot Drift to Spray Chamber to support early Raise Bore mobilization



## Pre-Excavation: Team Mobilized and Performing this Work

- KAJV plus subs – average of 108 people
  - 66 KAJV staff and craft
  - 42 subcontractors
- Anticipate this number increasing up to 130 with upcoming Early Works
- Underground headcount for KAJV is 80 people
  - Currently using about half of this over two shifts

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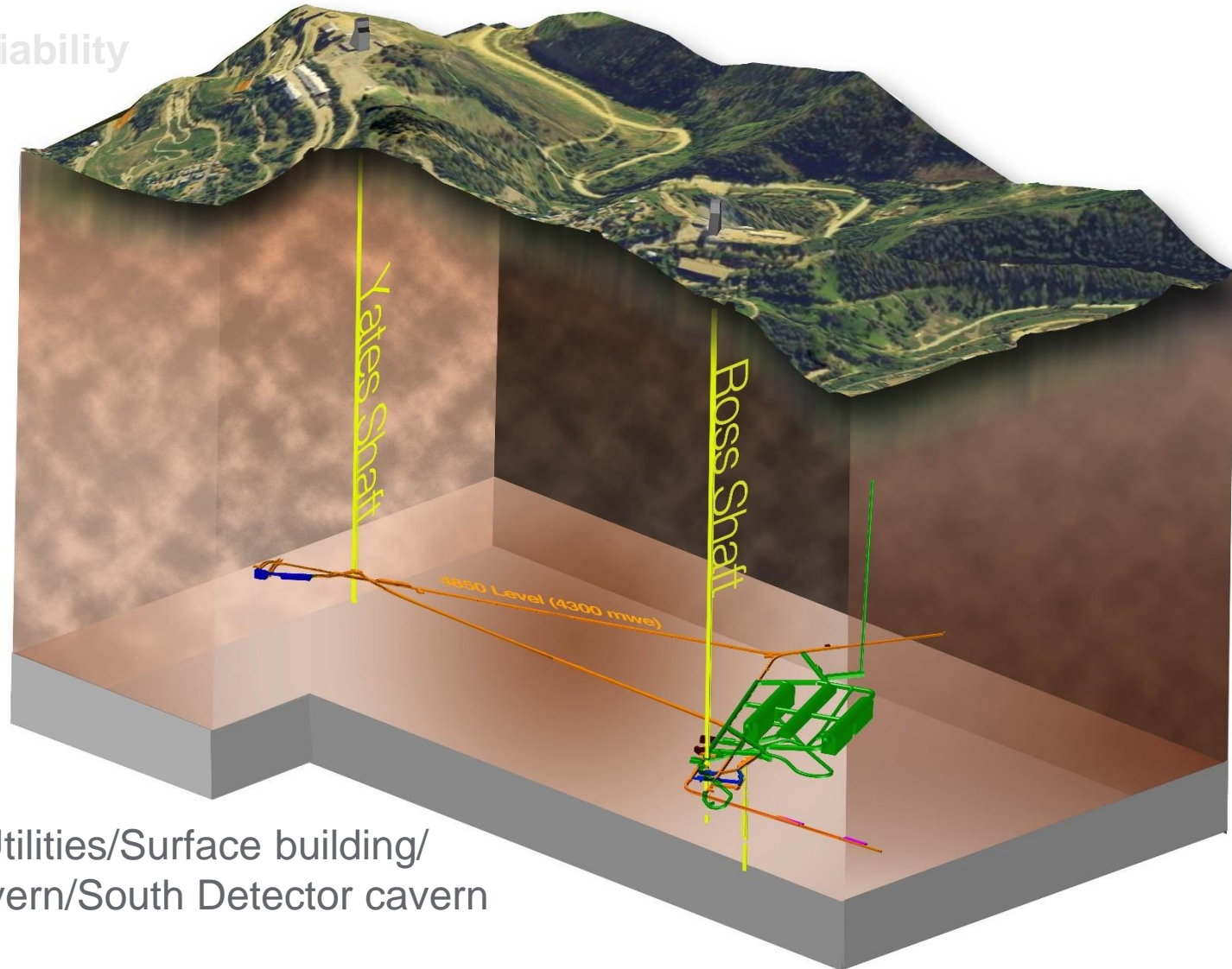
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# Excavation Status

- EXC sub-subcontract RFP is out for bid
  - Proposals are due to KAJV February 12, 2020
  - KAJV recommendation due to FRA in March 2020
  - Award planned for late summer, mobilized by end of Pre-Ex
  - Underground headcount for KAJV is 80 people
- RFP Alternate included for bidders to address possible overlap of south cavern excavation with cryostat installation
  - Underground headcount for KAJV in RFP Alternate is 55 people



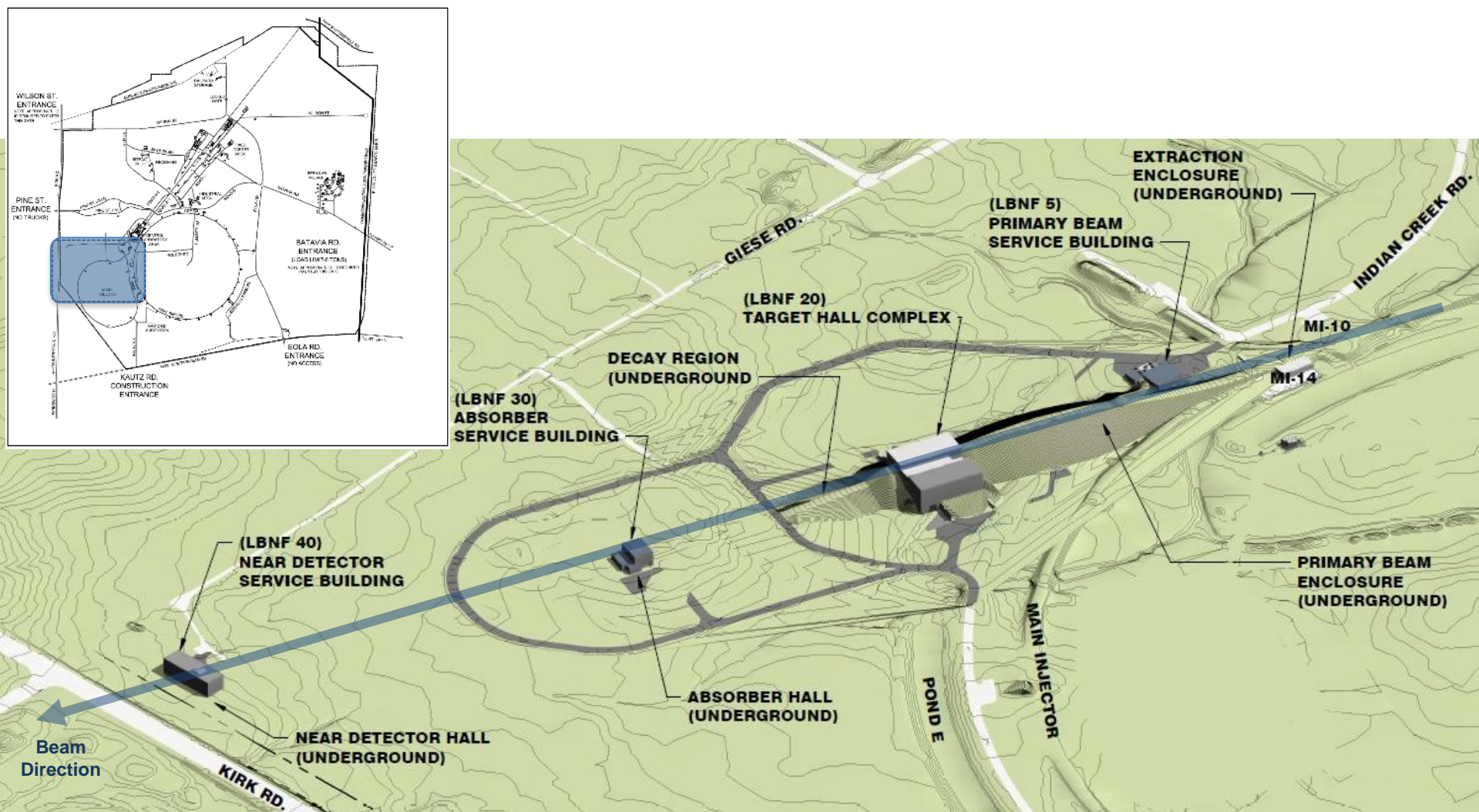
Pre-bid Tour at 4850L

## Post-Excavation: CF Activities at T-0

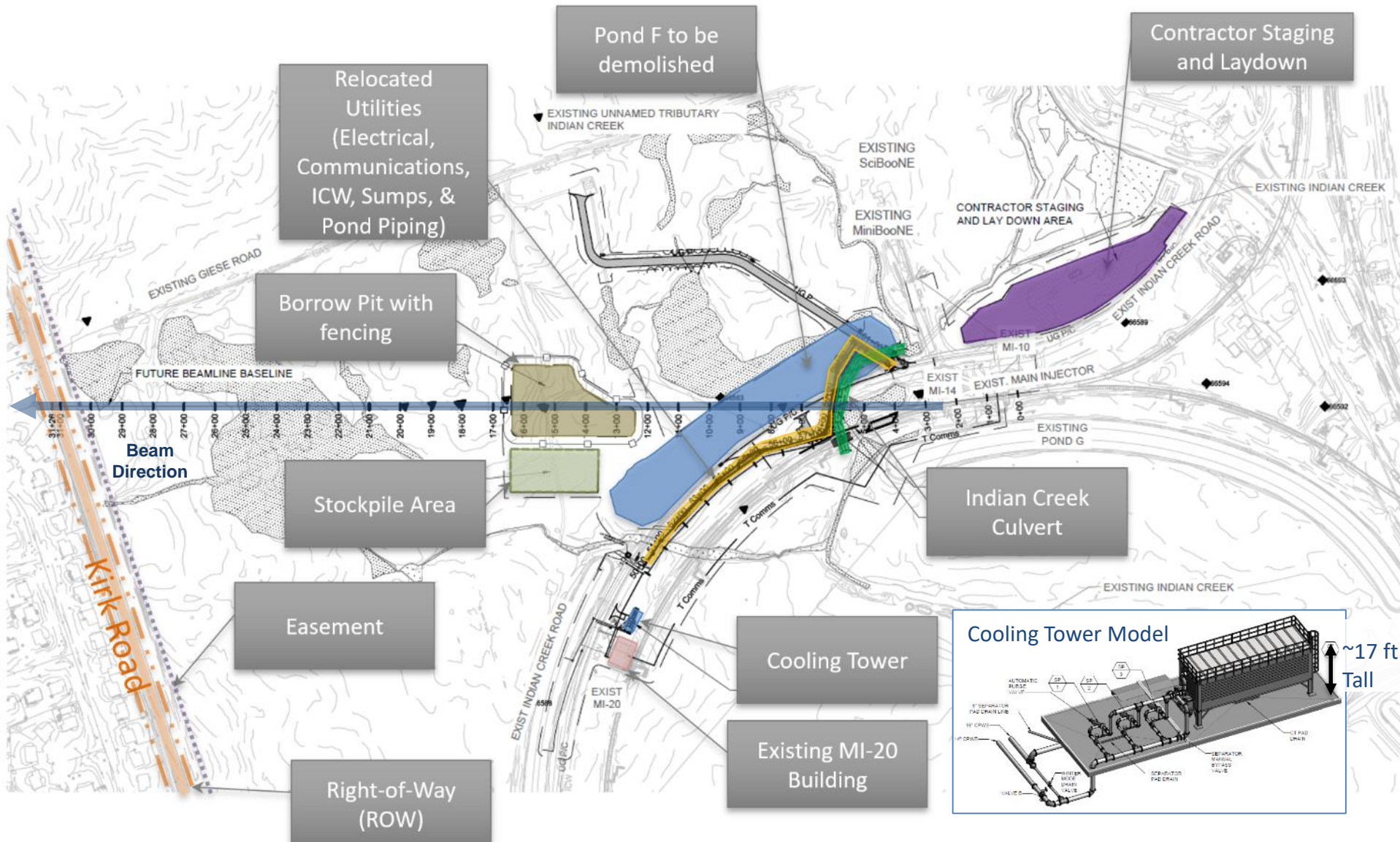
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# Near Site Conventional Facilities Status

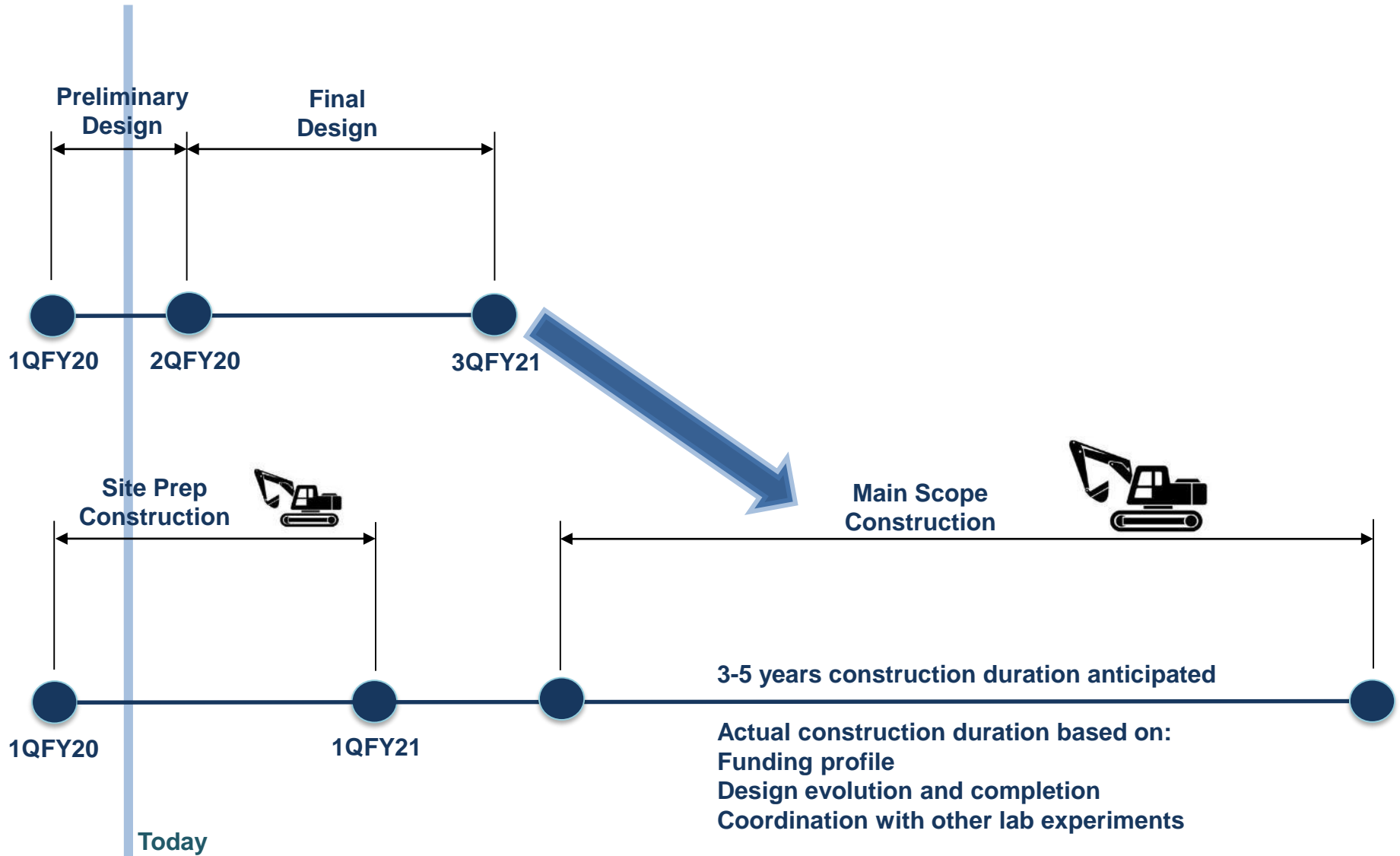
## House and Support the LBNF Beamline and DUNE Near Detector



# NSCF Status: Site Preparation



# NSCF Status



# Summary

- Reliability Projects – will be completed in 2020
- Pre-Excavation – will be completed prior to Excavation
- Excavation – sub-sub package out for bid, proposals due mid-February
- Value working with CM/GC – strong communication, excellent corporate processes, good relationship and coordination with FRA and SDSTA, outreach to sub-subcontractors and the community
- Lessons Learned from FSCF team can help inform the Integration team's planning (hiring, training, processes, etc.)
- Near Site Conventional Facilities – work has begun, Final Design to begin in April