

**U.S. DEPARTMENT OF ENERGY  
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT**

**NUCLEAR WASTE TECHNICAL REVIEW BOARD  
FULL BOARD MEETING**

**SUBJECT: EXPLORATORY STUDIES FACILITY  
STATUS**

**PRESENTER: ROBERT M. SANDIFER**

**PRESENTER'S TITLE  
AND ORGANIZATION: DEPUTY,  
MINED GEOLOGIC DISPOSAL SYSTEM OPERATIONS  
MANAGEMENT & OPERATIONS CONTRACTOR/TRW**

**PRESENTER'S  
TELEPHONE NUMBER: (702) 794-1869**

**RENO, NEVADA  
APRIL 11-12, 1994**

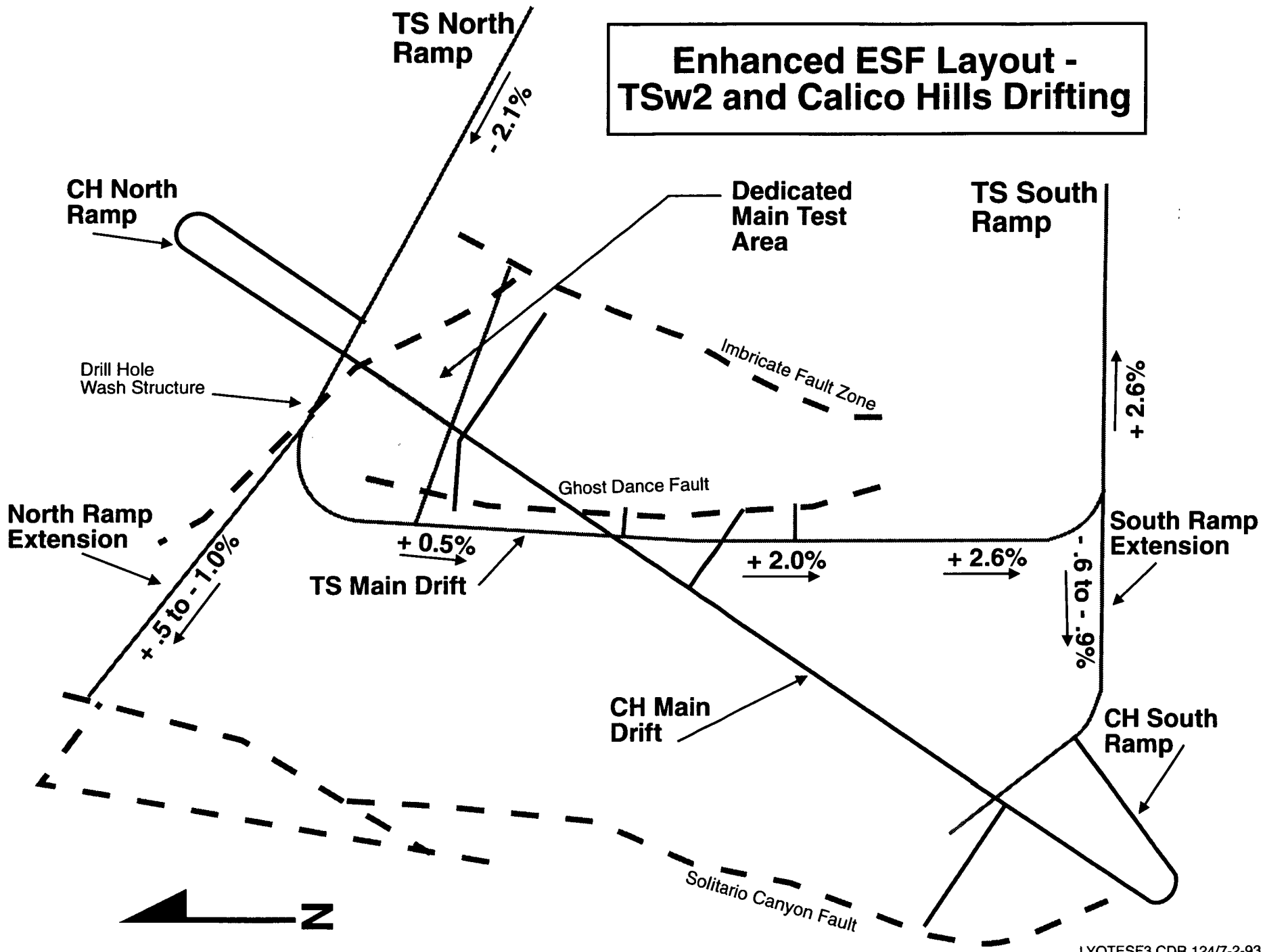
# **Exploratory Studies Facility (ESF) Status**

- **Current ESF Layout status**
- **Progress since completion of starter tunnel**
- **Ramp extensions**

# Current ESF Layout Status

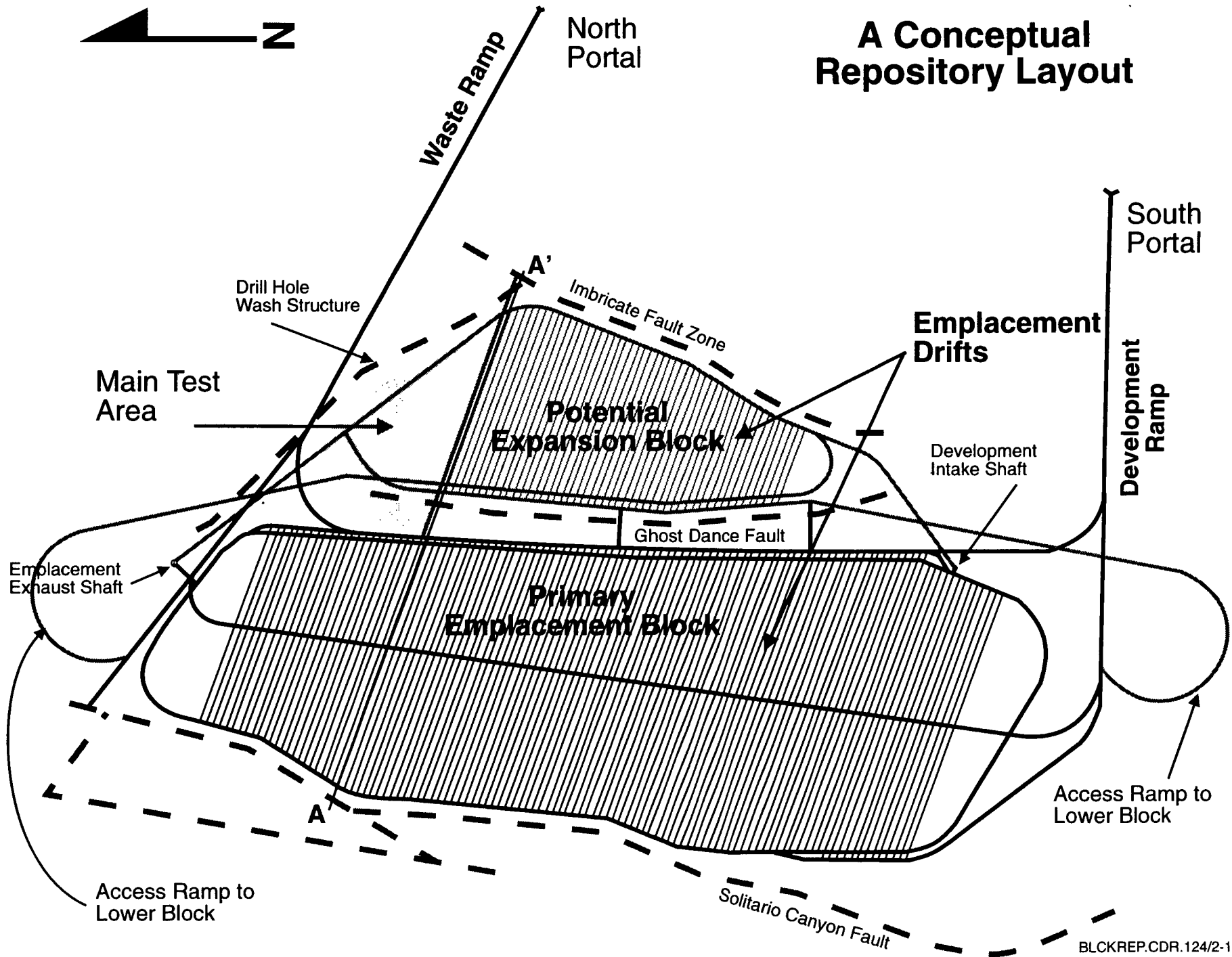
- **The Enhanced ESF Layout analysis was baselined at Level 3 (M&O)**
- **A Change Request was prepared and submitted to Level 2 (Project) to change the project baseline**
  - **YMP change control board approved the change and it is currently being implemented into the design of the ESF**

# Enhanced ESF Layout - TSw2 and Calico Hills Drifting

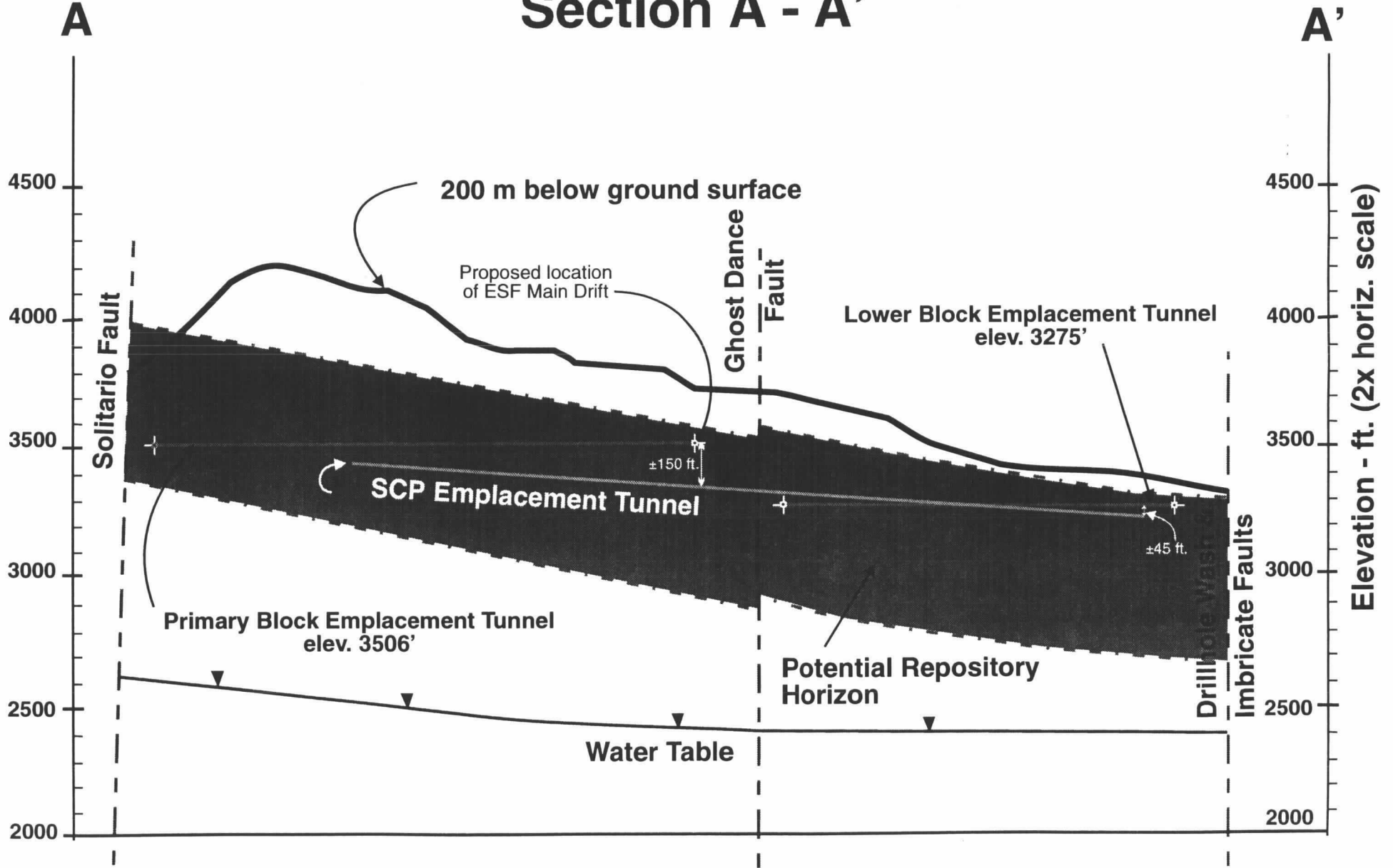




# A Conceptual Repository Layout



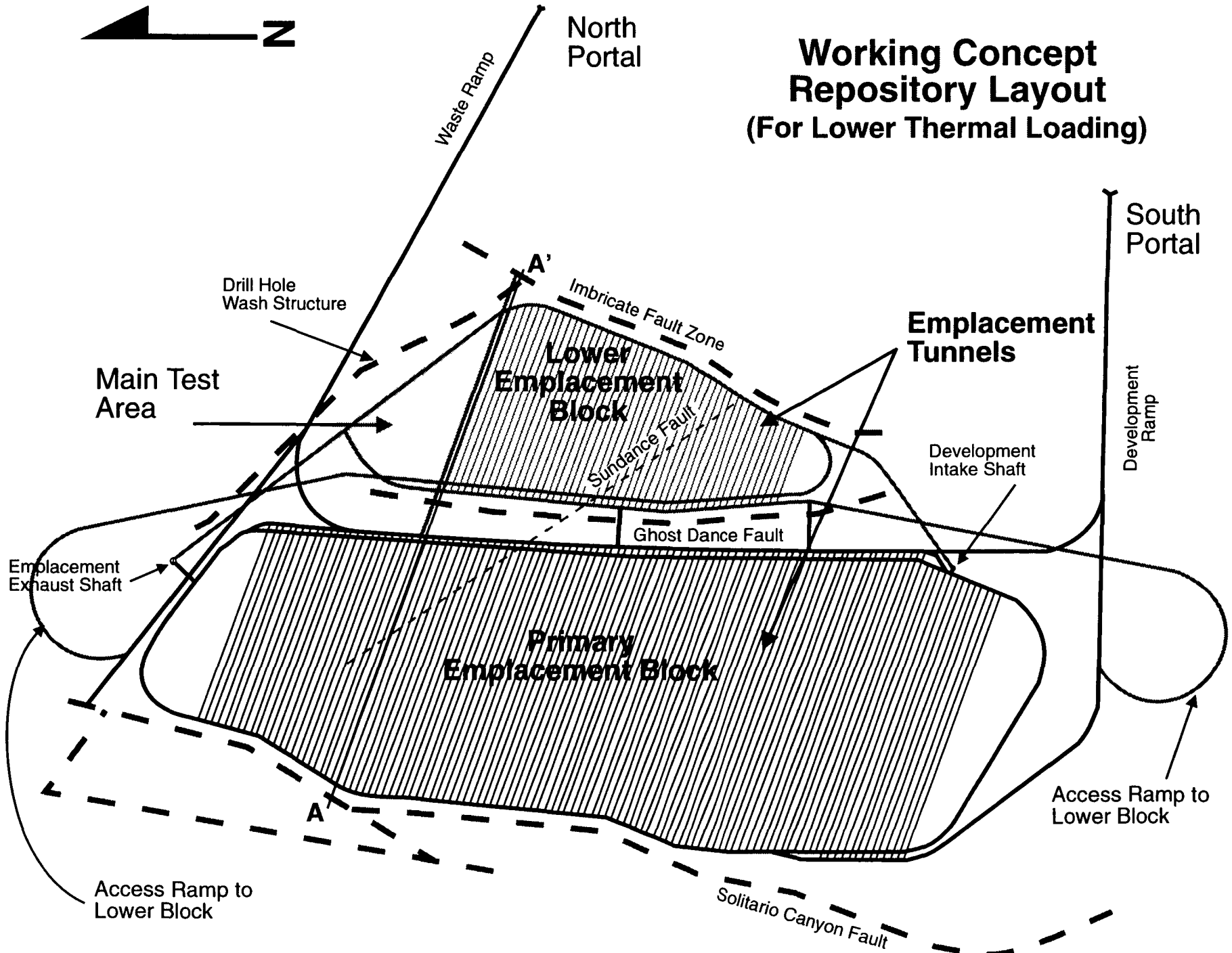
# Section A - A'



Note: Plane of section cuts through lowest emplacement drift in working concept layout.



# Working Concept Repository Layout (For Lower Thermal Loading)



# **ESF Progress**

## **October 1993 - March 1994**

- **Package 1, Surface, was further split into a fifth package, Package 1E, to support construction initiatives**
  - **Elements of Packages 1B, 1C, and 1D were redistributed into Package 1E**
  - **Package 1E contains the warehouse and operations building**
  - **The 90% design review for Package 1E is scheduled for FY1995**
- **Package 1C, Surface Utilities, completed 90% design review**



# **ESF Progress**

**October 1993 - March 1994**

**(Continued)**

- **Package 2A, Starter Tunnel, was baselined at Level 2 and issued for construction**
- **Package 2B, North Ramp, completed 90% design review**
  - **Pending submission to Level 2 CCB**
- **Package 2C, Topopah Spring North Ramp set for 90% design review starting with the design packages being mailed on May 2, 1994**

# **ESF Progress**

## **October 1993 - March 1994**

(Continued)

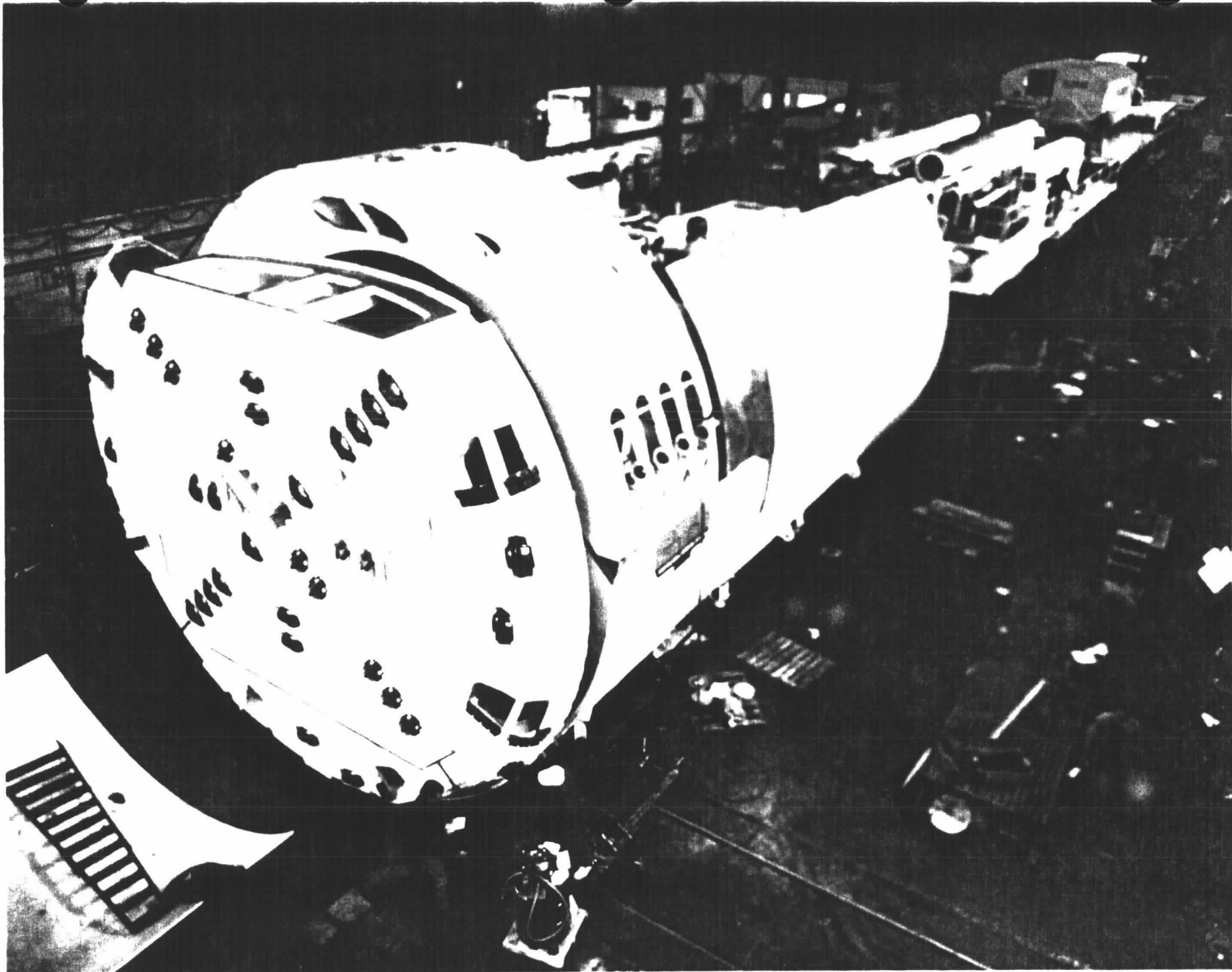
- **Test Alcove 1 was excavated and completed**
  - Supports radial borehole and hydrochemistry tests
- **Delivery began of the Tunnel Boring Machine**
  - Assembly pad for the TBM was formed and poured

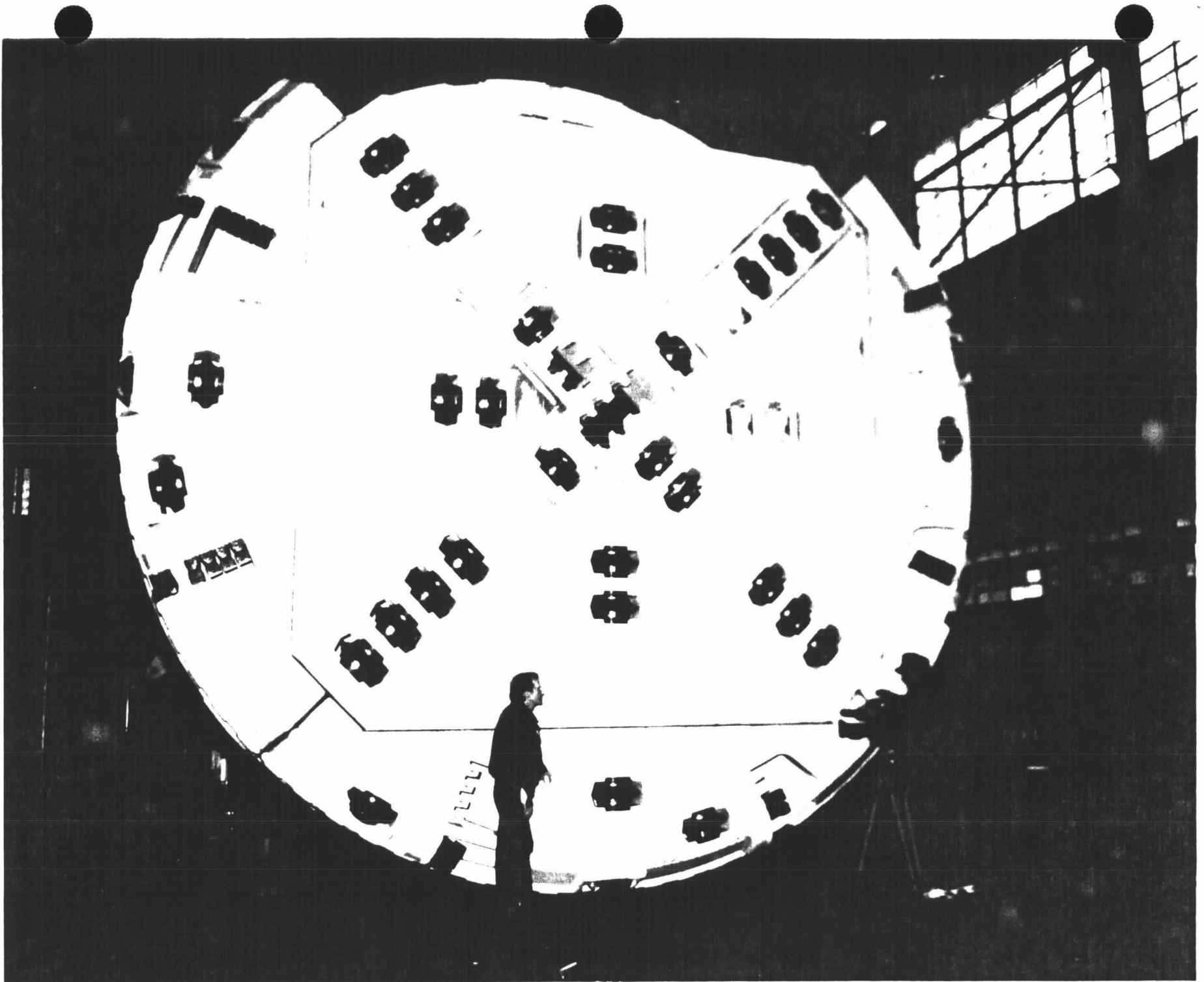
# **ESF Progress**

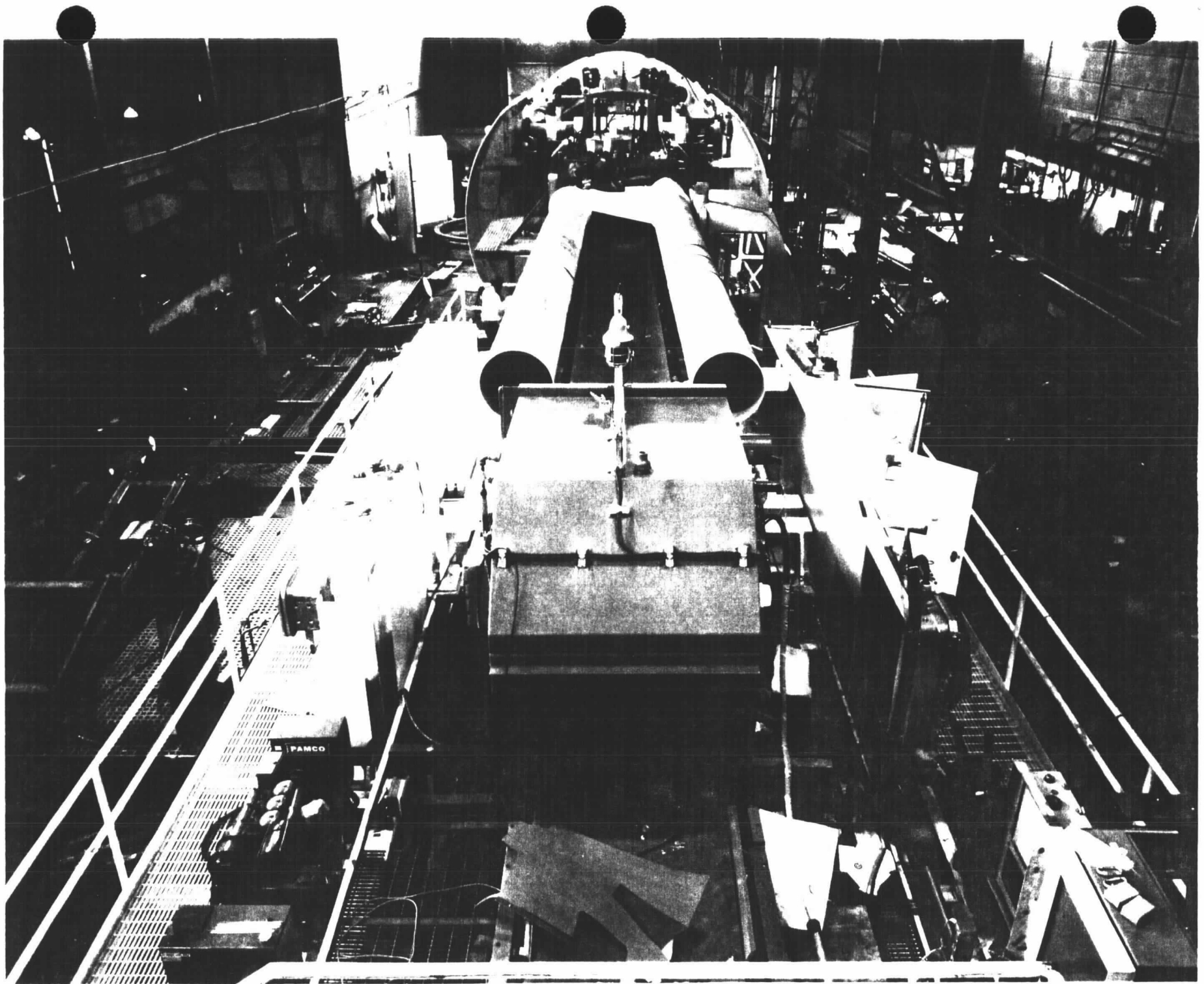
## **October 1993 - March 1994**

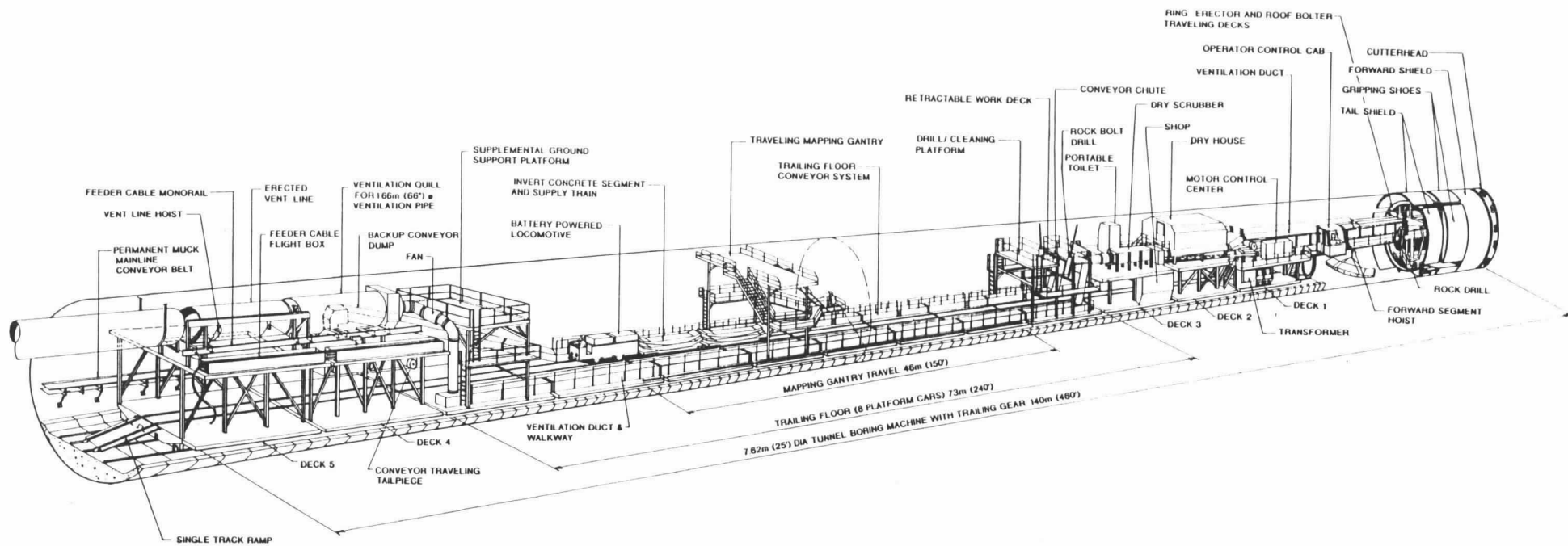
(Continued)

- **Completion of 69kV powerline**
- **Installation of buried utilities on south end of portal pad (in preparation for TBM arrival)**
- **Significant progress on waterline from Well J-13 to pad**

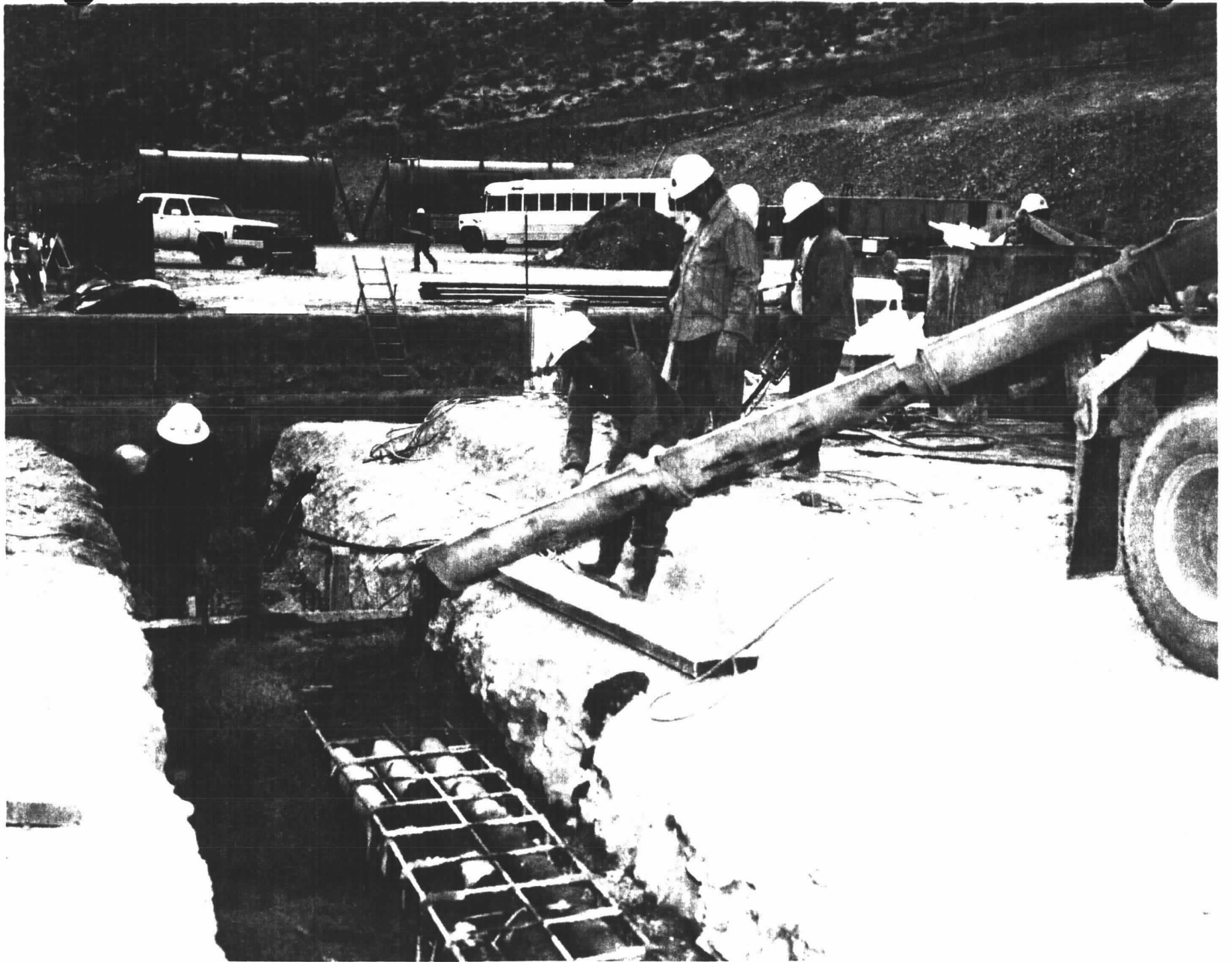




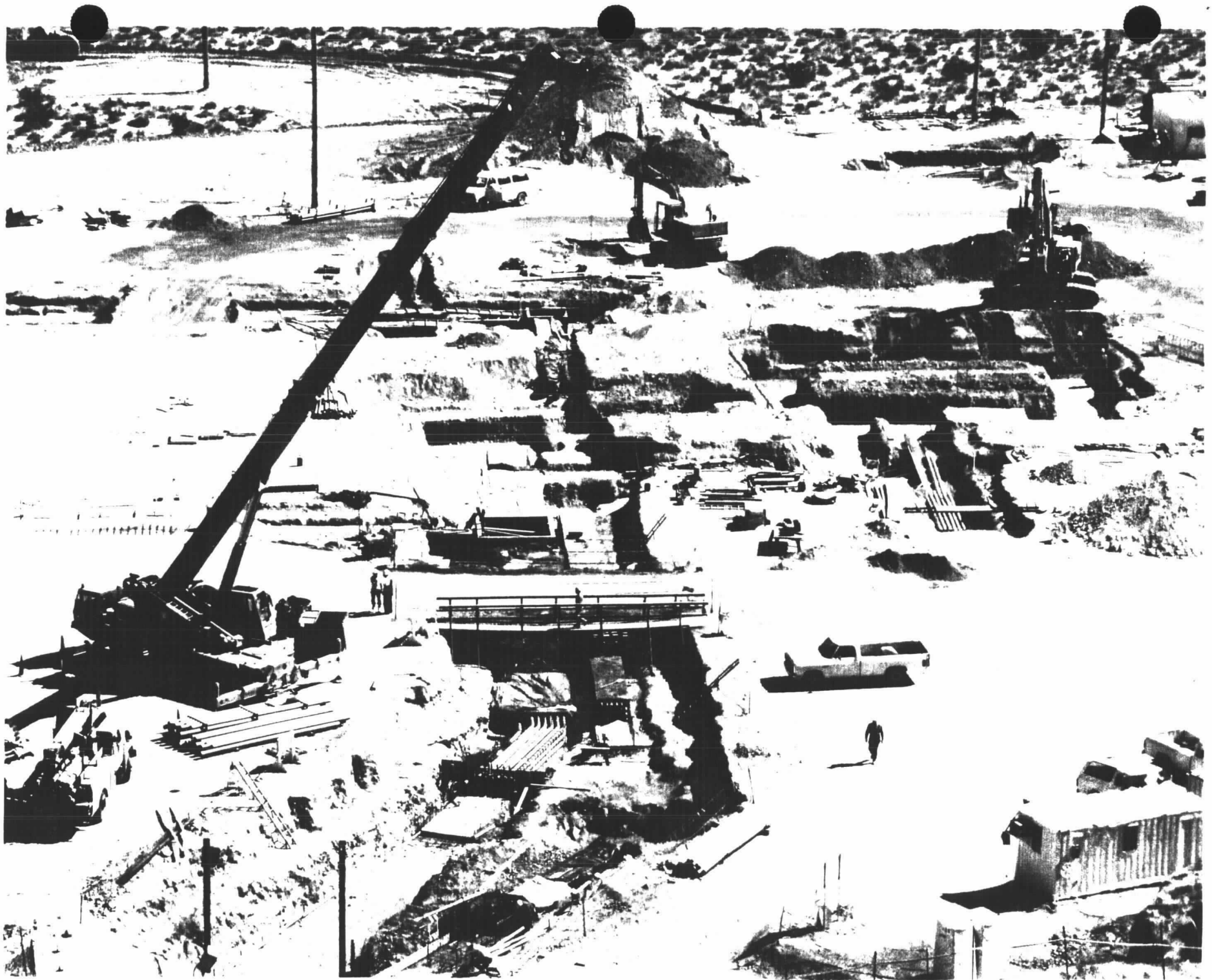




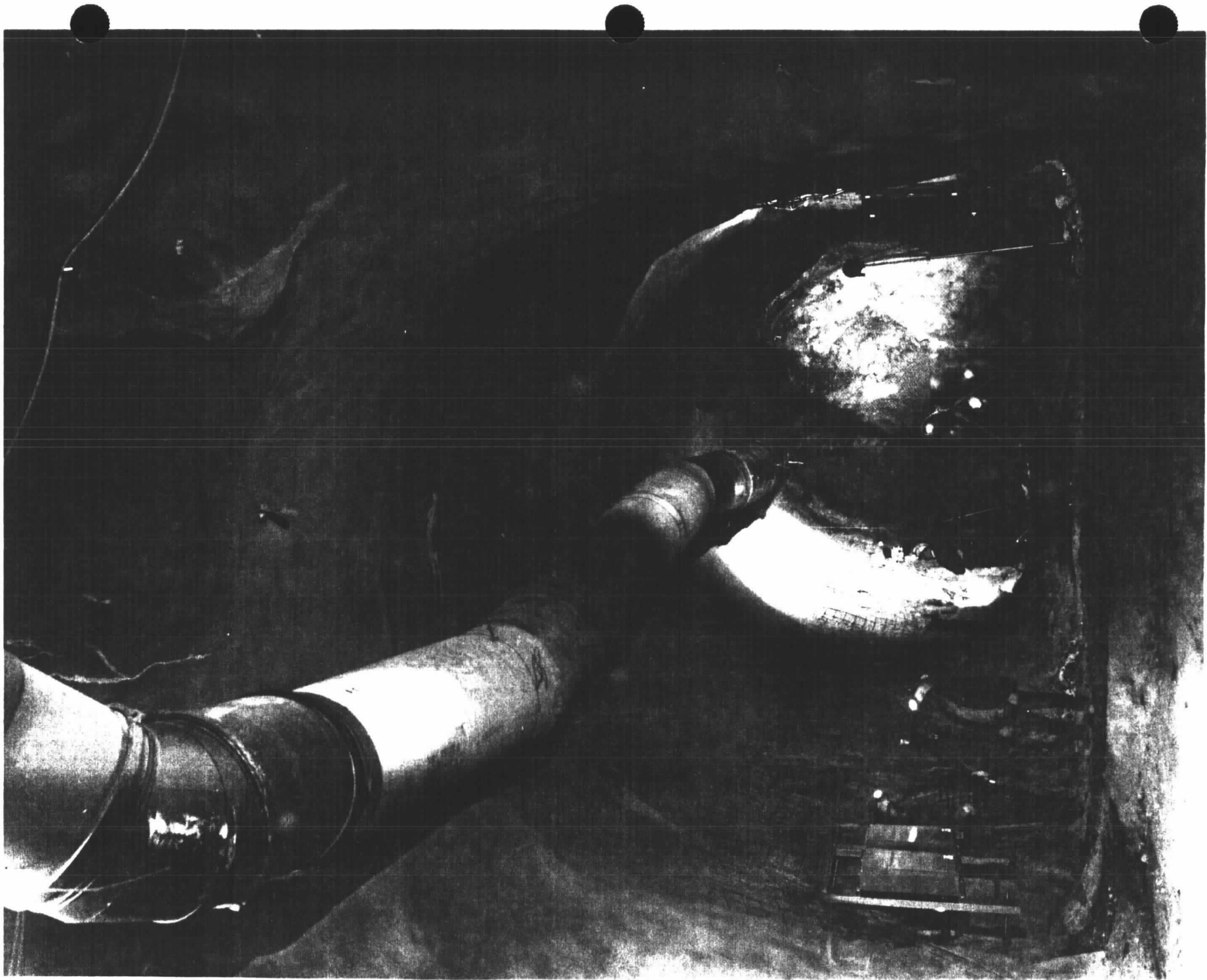
TUNNEL BORING MACHINE WITH TRAILING GEAR AND MAPPING GANTRY  
**YUCCA MOUNTAIN PROJECT**













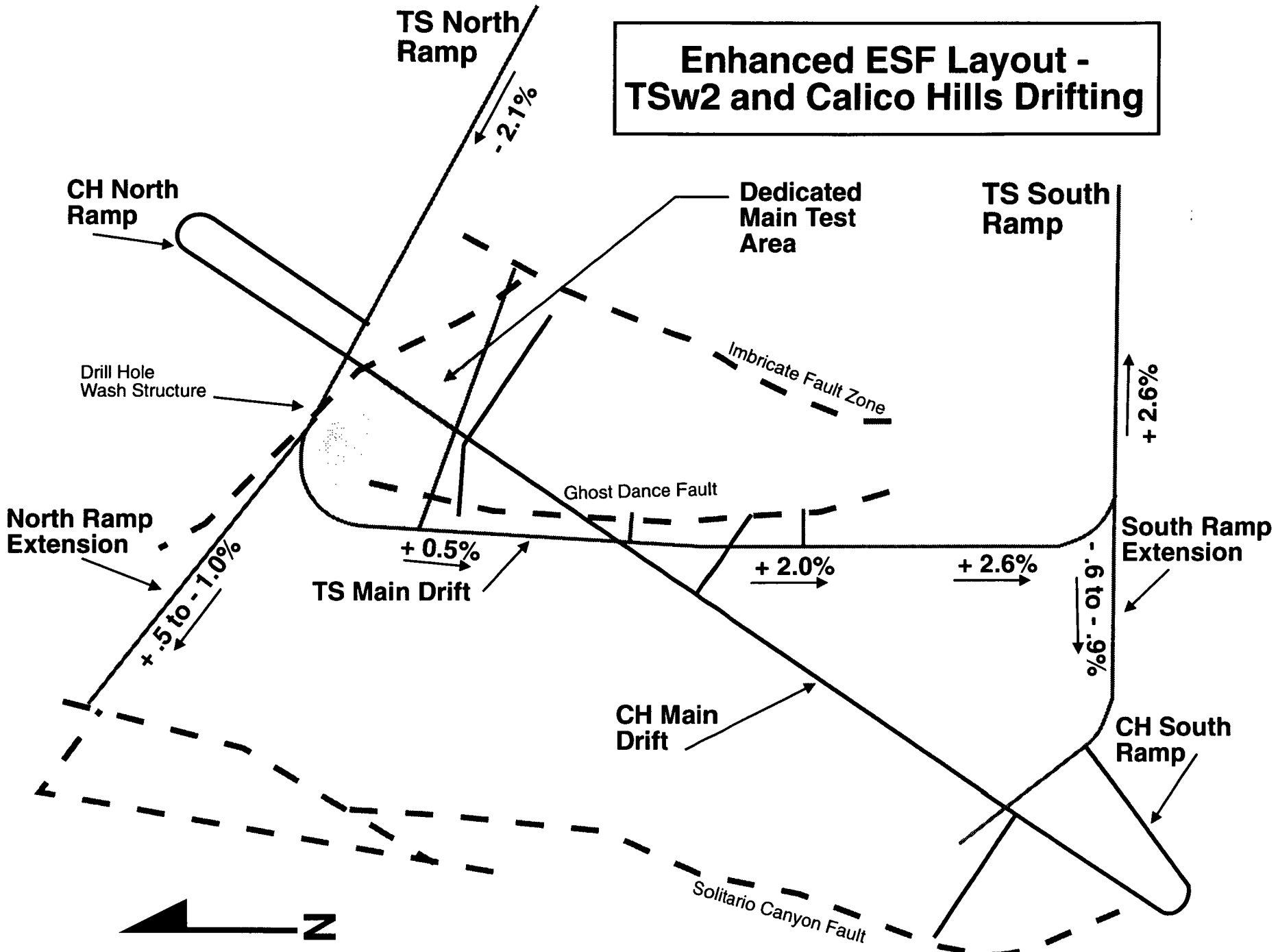


**RAMP EXTENSIONS**

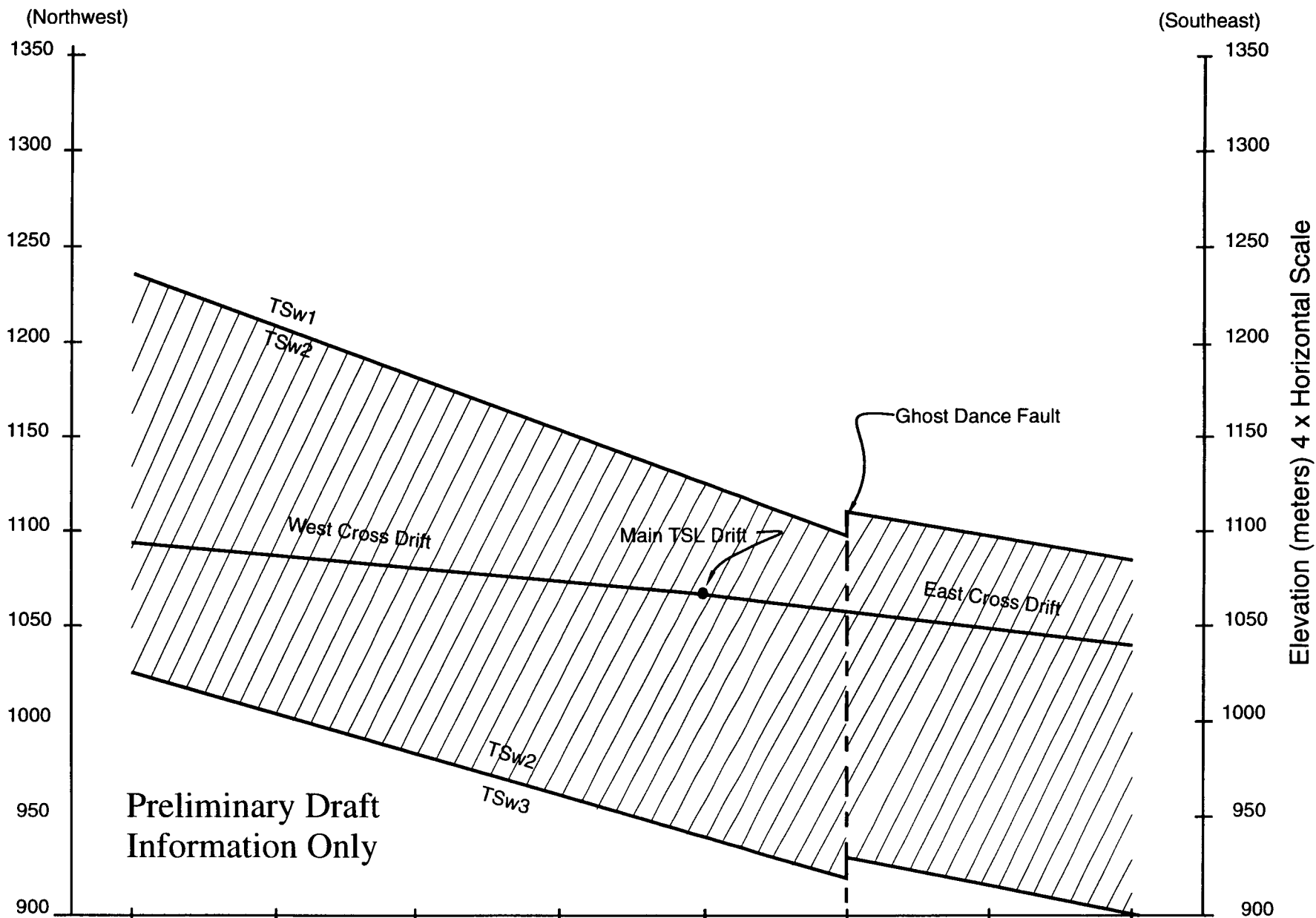
# **Ramp Extensions East-West Cross Drifts**

- **Total length of excavation = 2,063 meters**
- **Allow examination of approximately 2/3 of the vertical extent of the TSw2**
- **Are located in the center of the potential repository block**

# Enhanced ESF Layout - TSw2 and Calico Hills Drifting

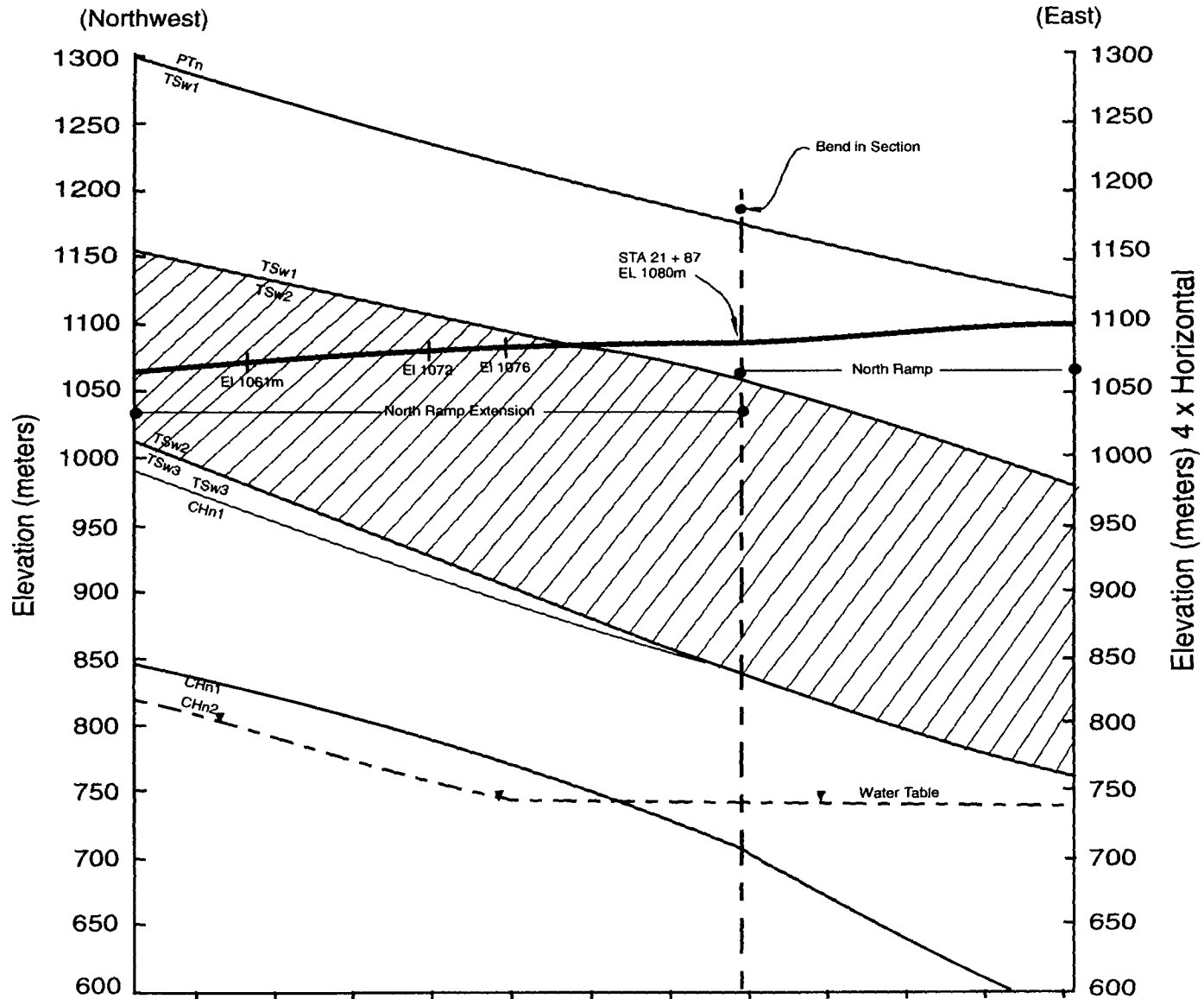


# SECTION THROUGH EAST-WEST CROSS DRIFT





# SECTION THROUGH NORTH RAMP EXTENSION

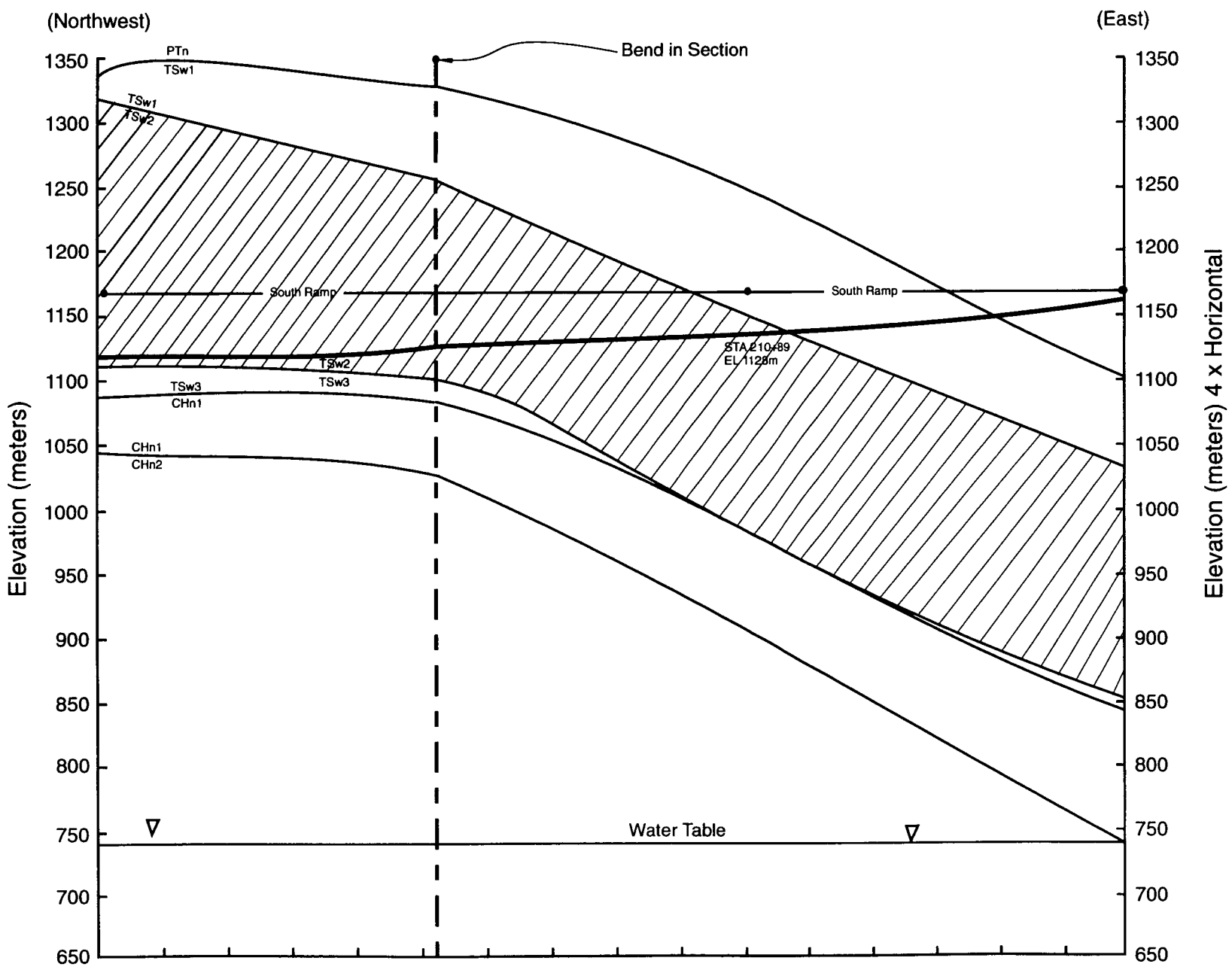


Preliminary Draft  
Information Only

DANSEC2.126.CDR/2-2-94

Preliminary Draft  
Information Only

# SECTION THROUGH SOUTH RAMP EXTENSION



DANSEC.126.CDR3/2-1-94

# **Ramp Extensions North and South Ramps**

- **Total Length of excavation = 3,620 meters**
- **Allow examination of almost the entire vertical extent of the TSw2**
- **Are located at the ends of the potential repository block**

# **Ramp Extensions Advantages**

- **More footage, more exposure, more knowledge gained**
- **More vertical exposure of TSw2**
- **Preservation of primary potential repository area**
- **Exposure of two distinct and separate areas.  
Correlation may/may not be good. We learn something  
in either event**

# **Ramp Extensions Disadvantages**

- **Cost increase due to more excavation**
- **Don't get to see that part of the potential repository block**

# **ESF Status - Summary**

- **This is a cursory review. If more detail is required, a separate session should be considered.**
- **Informal discussion sessions, at our facility, are helpful for all. These should be considered also.**
- **Significant ESF design and construction were realized during the last six months**
- **The next six months (last half of FY1994) activities include the start of the TBM**