

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

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

**SUBJECT: EXPLORATORY STUDIES
FACILITY UPDATE**

PRESENTER: RICHARD CRAUN

**PRESENTER'S TITLE
AND ORGANIZATION: ASSISTANT MANAGER, ENGINEERING AND FIELD OPERATIONS
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE
LAS VEGAS, NEVADA**

TELEPHONE NUMBER: (702) 794-7787

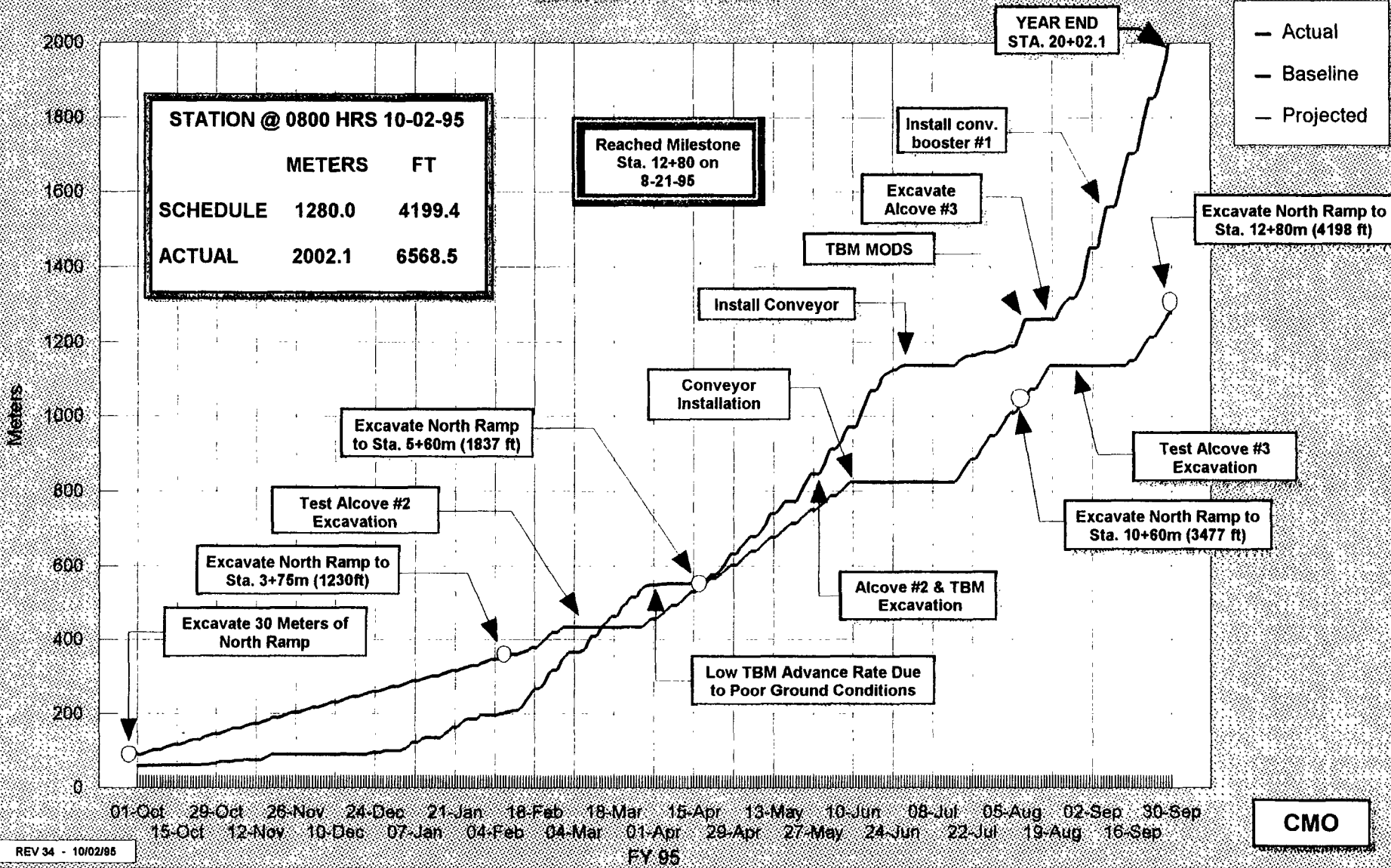
**ARLINGTON, VIRGINIA
OCTOBER 17-18, 1995**

Outline

- **ESF Status**
- **Design Review Process Improvements**
- **FY96 Budget and Plan**
- **FY96 ESF Operation Goals**

TBM Progress

Baseline vs Actual



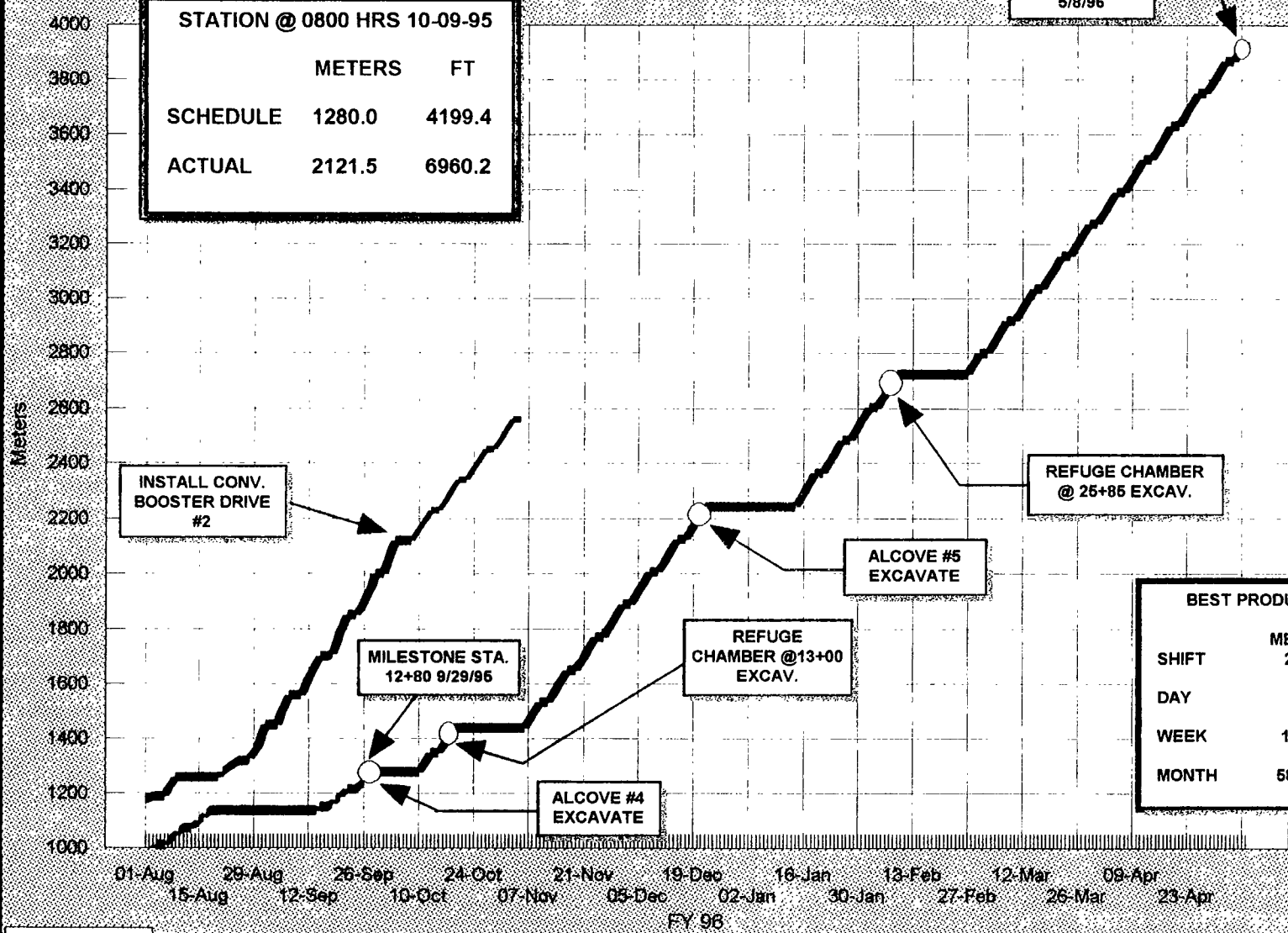
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TBM Progress

Baseline vs Actual

Actual
 Baseline
 Projected

STATION @ 0800 HRS 10-09-95		
	METERS	FT
SCHEDULE	1280.0	4199.4
ACTUAL	2121.5	6960.2



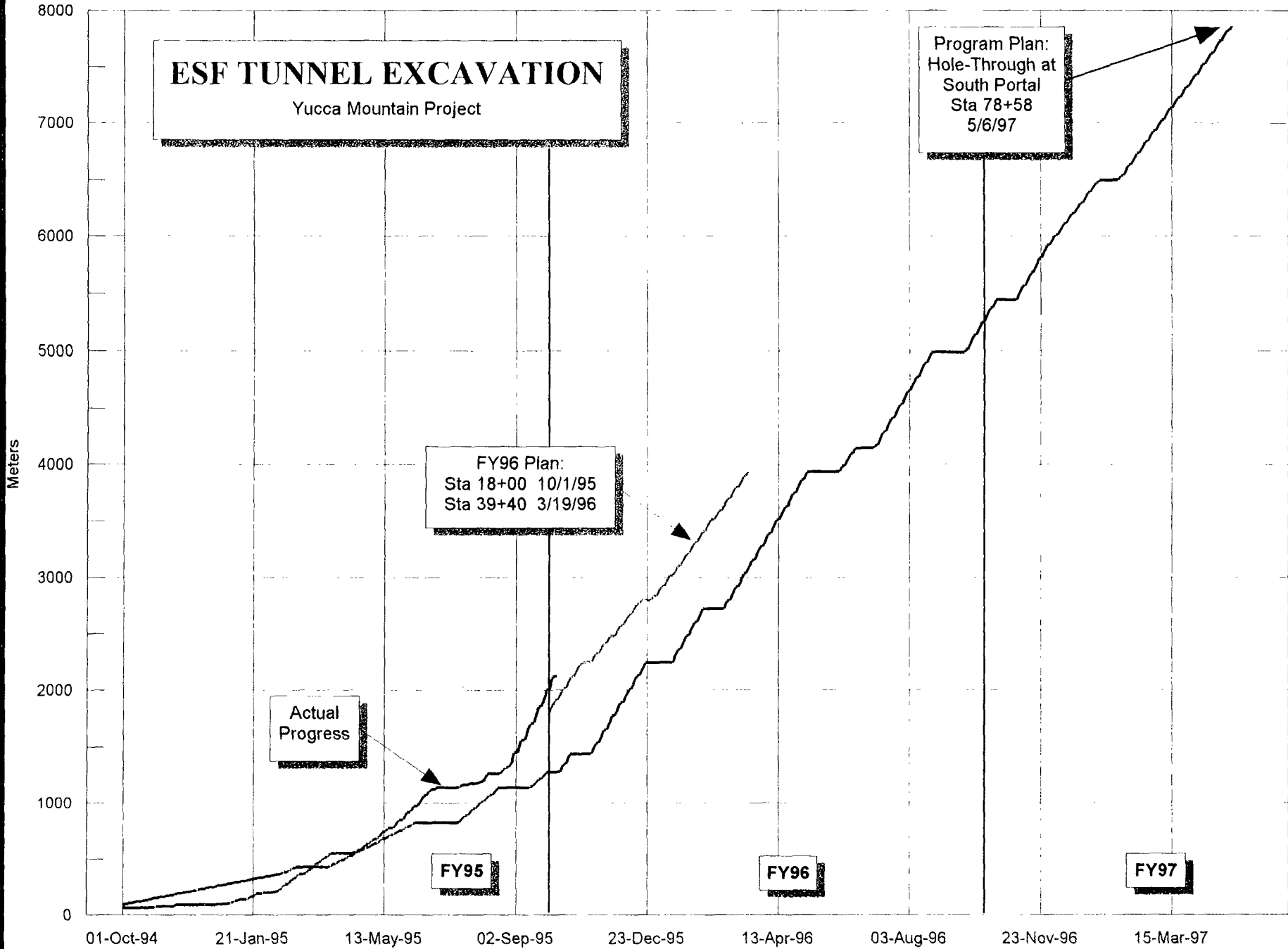
BEST PRODUCTION TO DATE		
	METERS	FEET
SHIFT	23.00	75.46
DAY	50.00	164.04
WEEK	149.40	490.15
MONTH	587.30	1926.81

REV 01 - 10/09/95

CMO

ESF TUNNEL EXCAVATION

Yucca Mountain Project



Program Plan:
Hole-Through at
South Portal
Sta 78+58
5/6/97

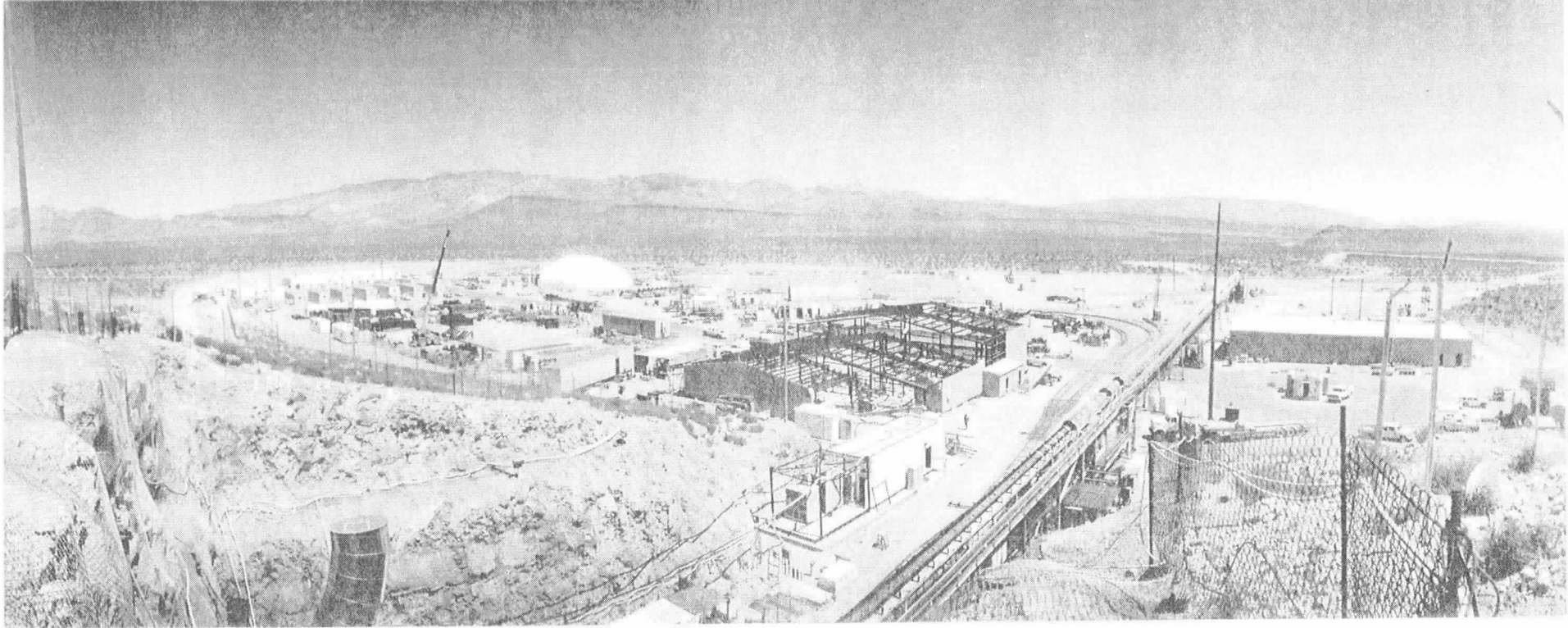
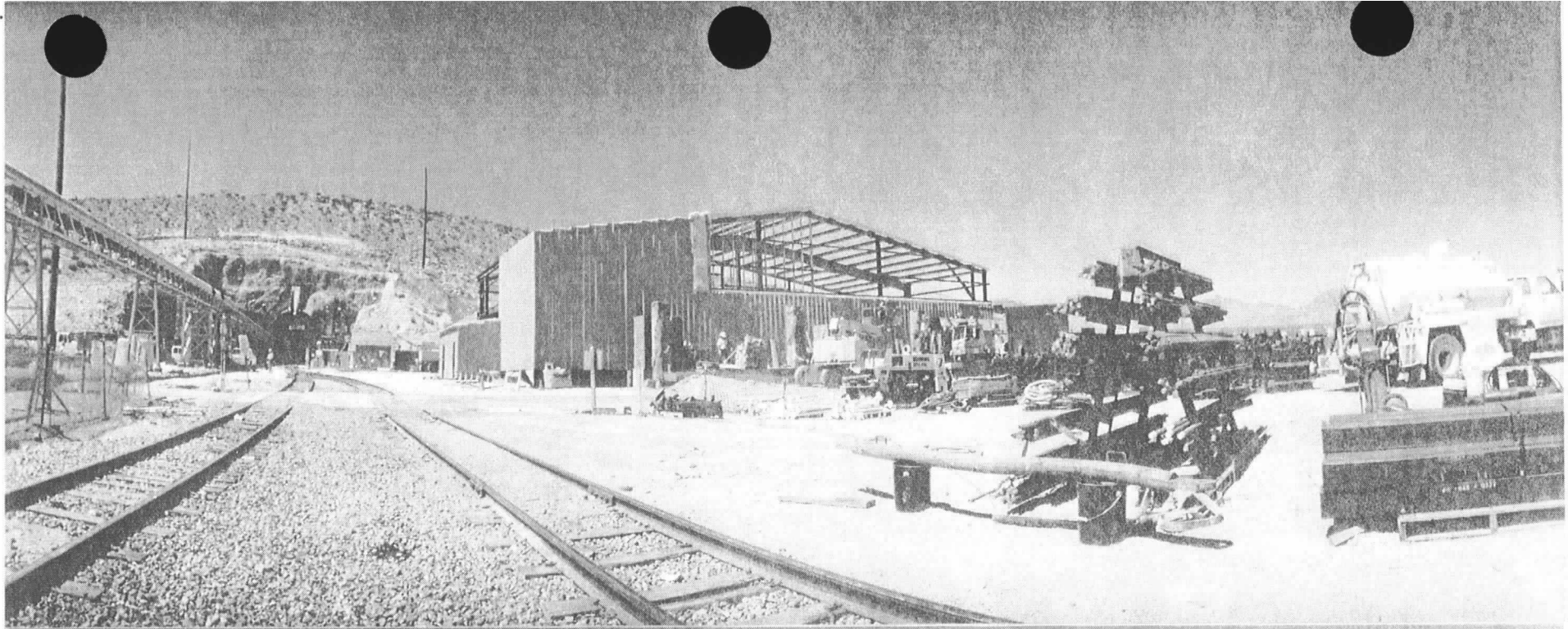
FY96 Plan:
Sta 18+00 10/1/95
Sta 39+40 3/19/96

Actual
Progress

FY95

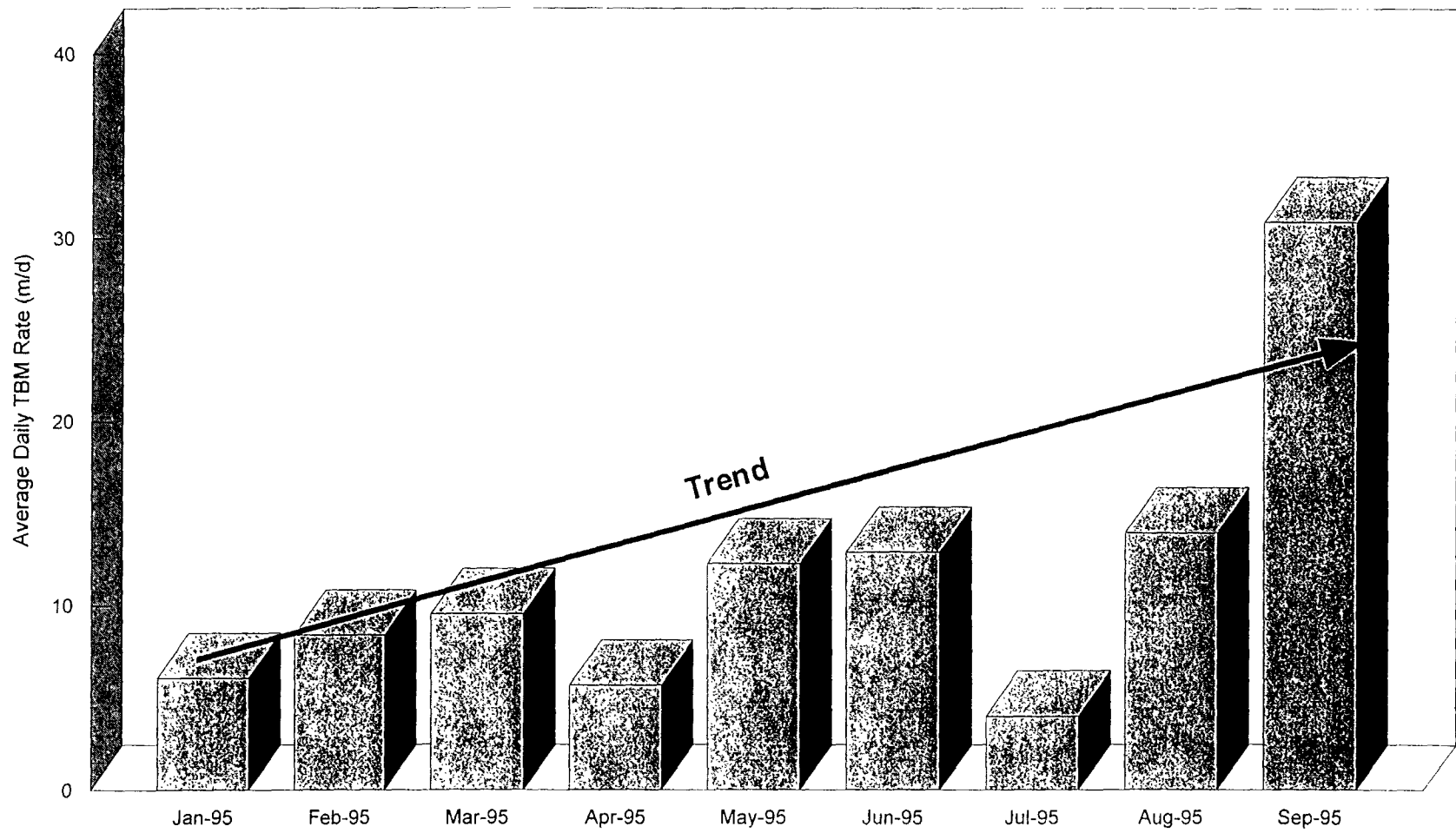
FY96

FY97



TBM Production

Average Rate per TBM Operating Day



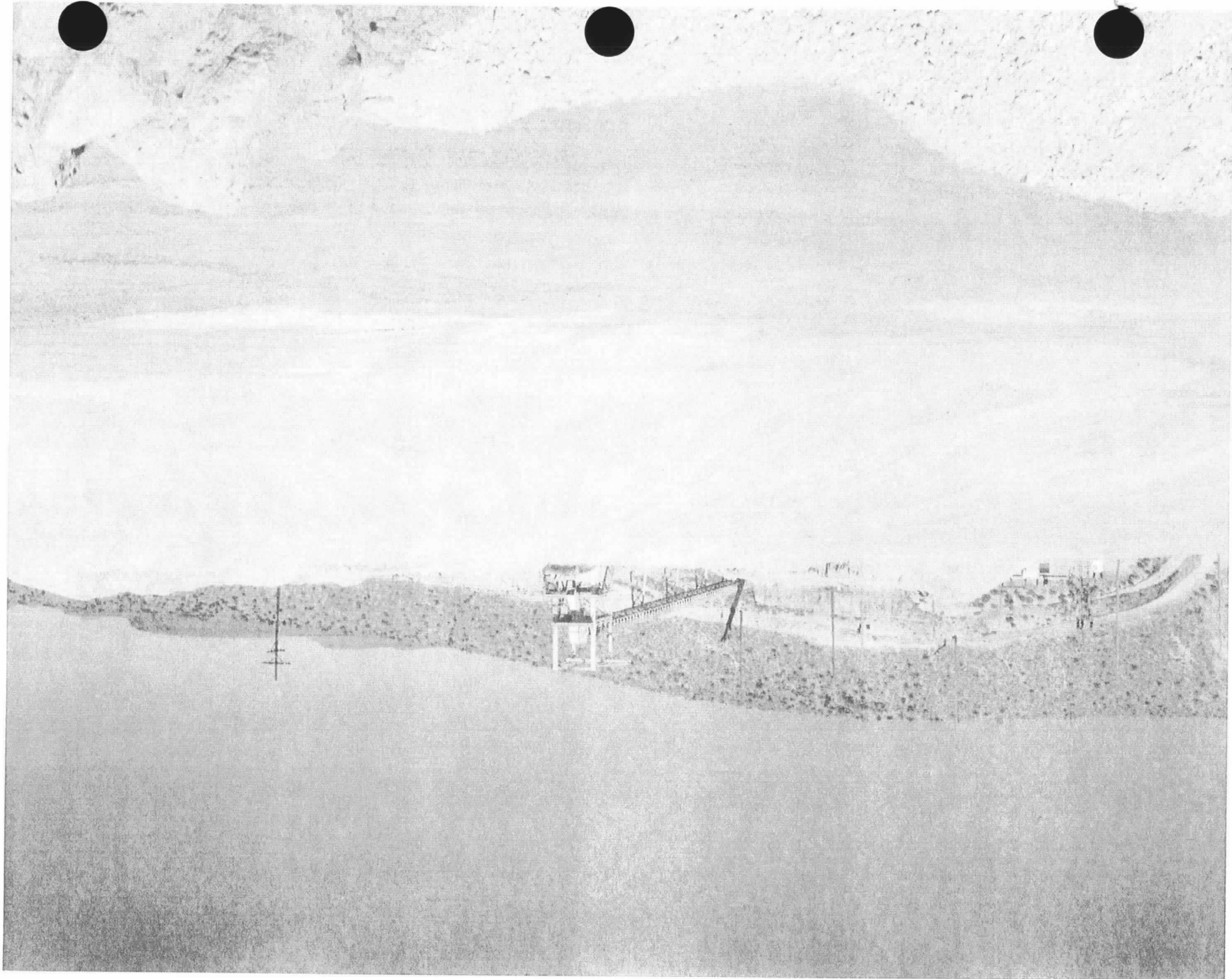
Progress Overview

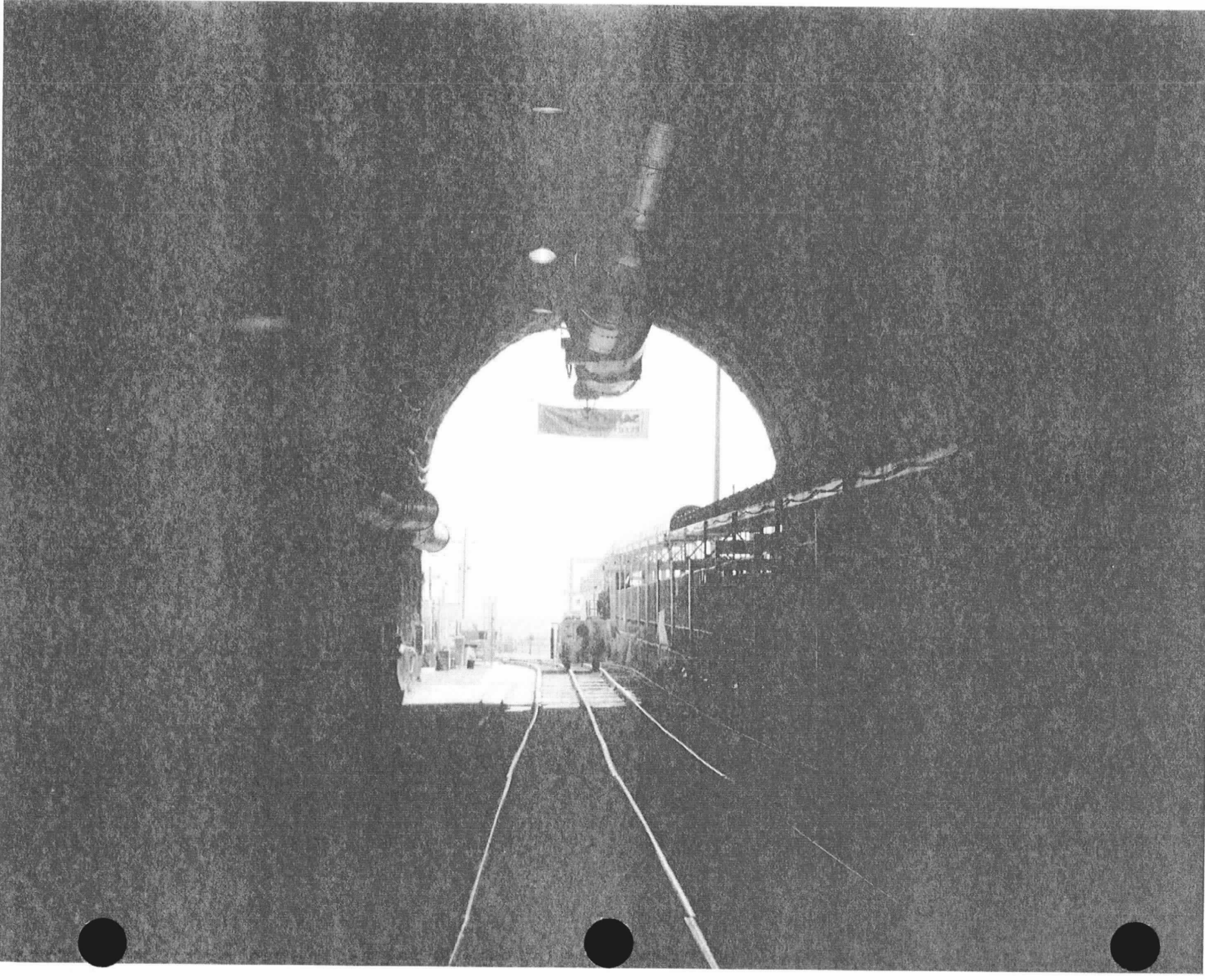
- **TBM Tunneling Operations Update**

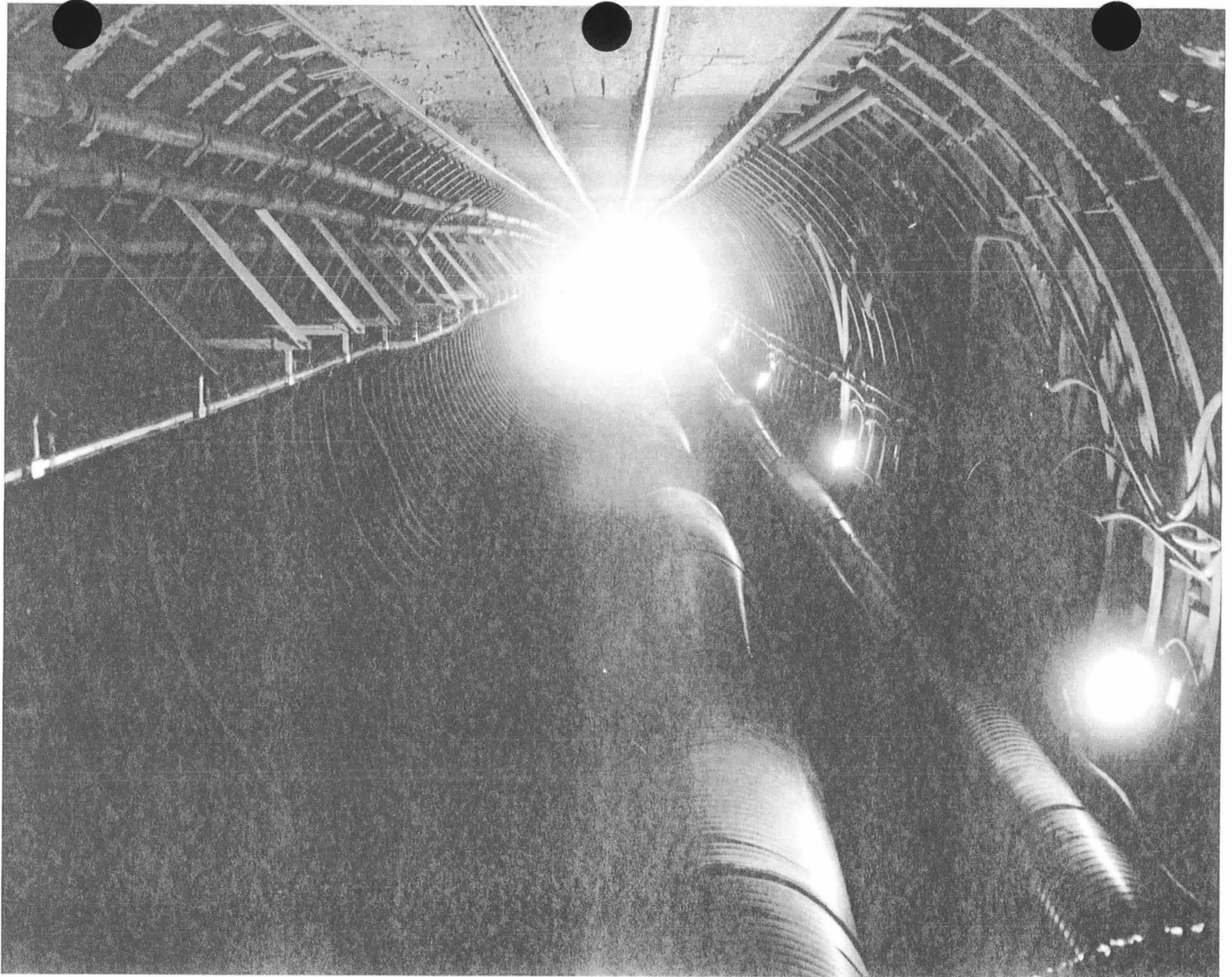
- Present Location, 8:00 am 10/10/95 2152.53 meters (7060 feet)
- Best Production Week, 9/24/95 149.4 meters (490 feet)
- Best Production Day, 9/29/95 50.0 meters (164 feet)
- Best Production Shift, 10/03/95 (Grave) 23 meters (75 feet)
- September's Total Advance 587.3 meters (1926 feet)

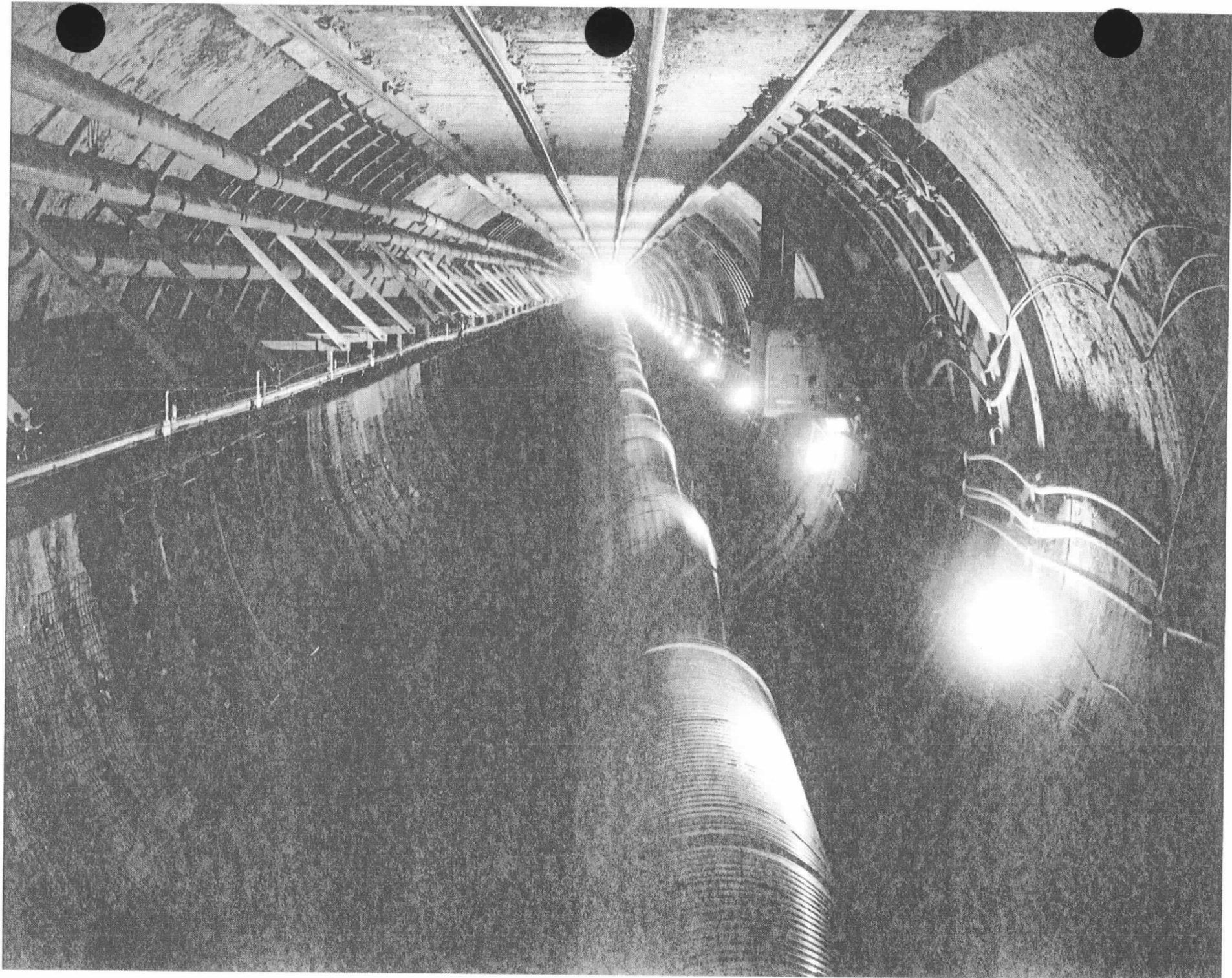
- **Accomplishments**

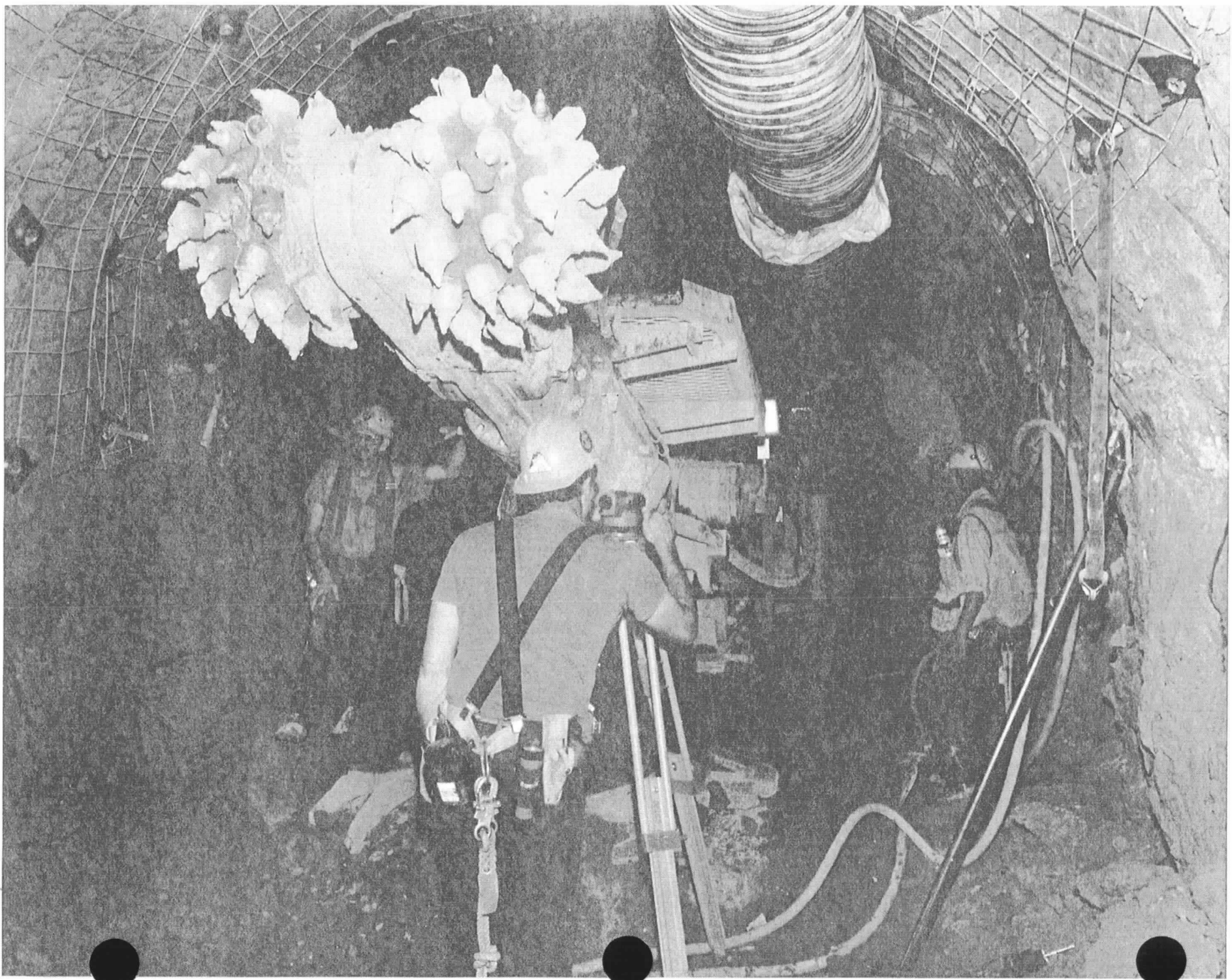
- Station 10 + 60 meters (3477 feet) on June 16, 1995 (55 days ahead of schedule)
- Station 12 + 80 meters (4198 feet) on August 22, 1995 (ahead of schedule)
- Alcove #3 completed August 24, 1995 (ahead of schedule)
- Conveyor start-up on July 26, 1995

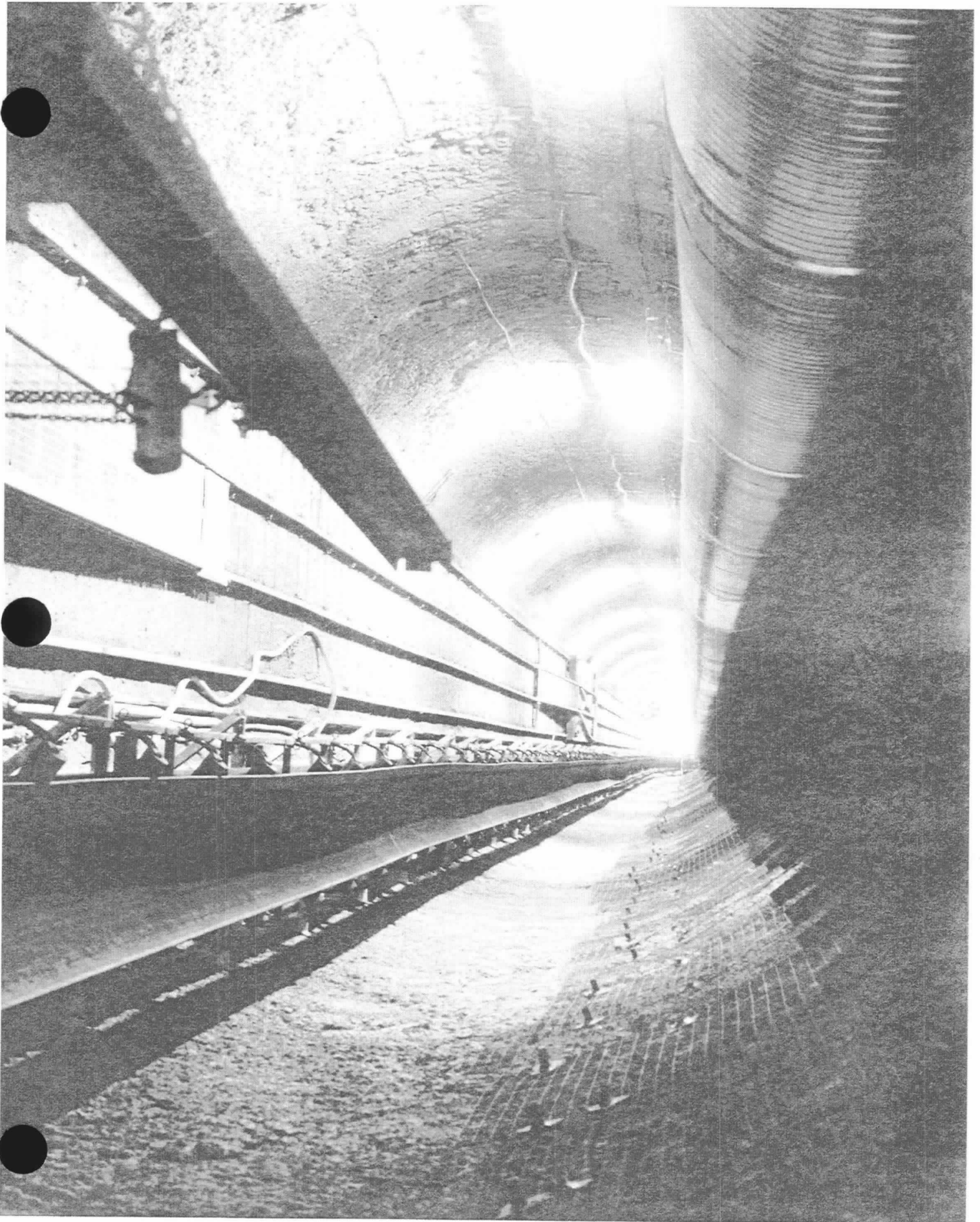


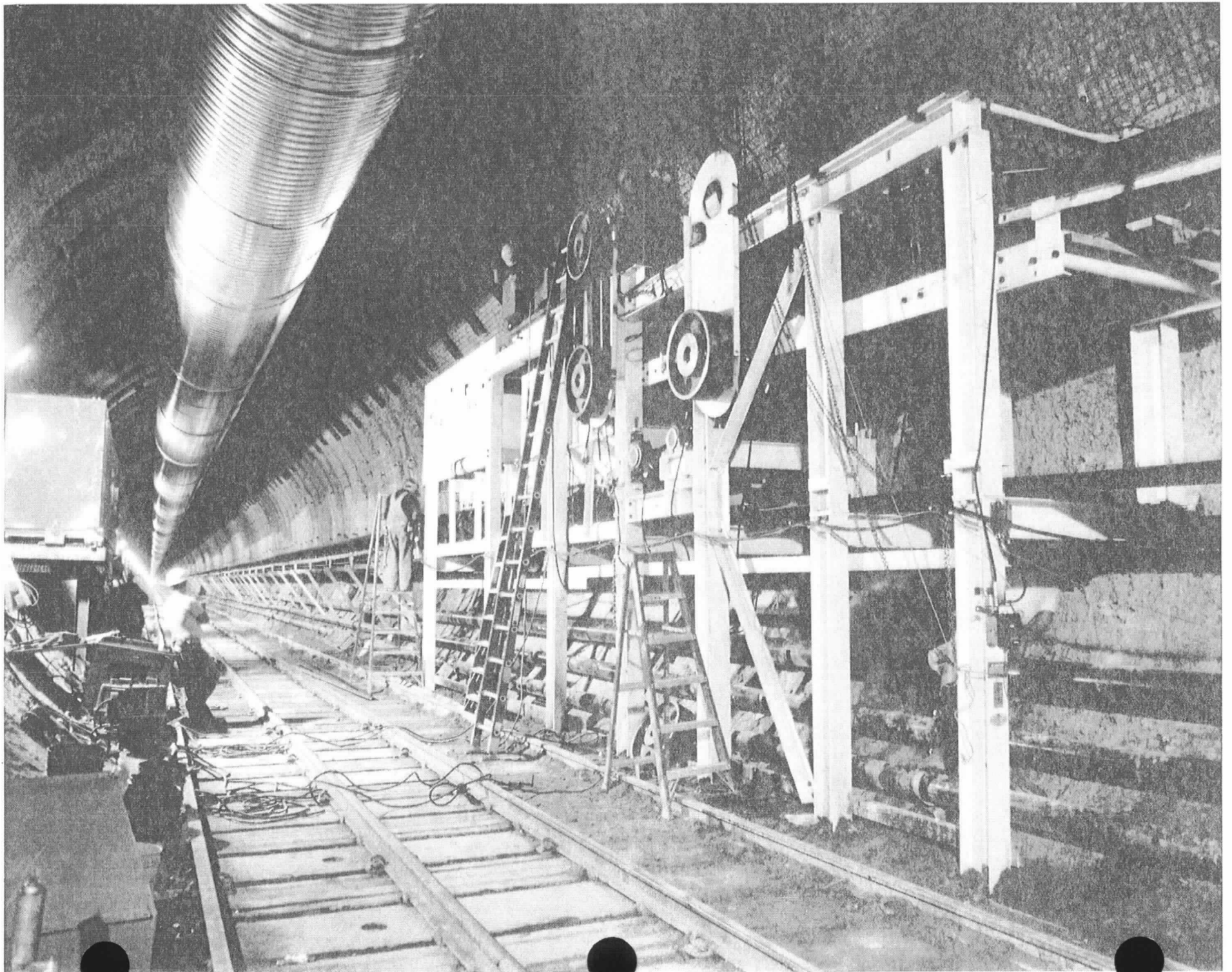












TBM Modifications

- **Installed plates at the forward edge of the bottom gripper - Ski Nose**
 - Prevents the machine from “diving” in soft materials
 - Alleviates some steering problems and tunnel alignment
- **Installed braces and hydraulic rams from horizontal grippers to bottom vertical grippers - Three Shoe Gripper**
 - Helps stabilize the TBM in poor ground conditions
- **Installed shield slot closure plates**
 - Prevents loose rock from falling in closed areas
 - Alleviated hazards to personnel and equipment

Design Review Process Improvements

Internal Reviewers:

DOE/YMSCO

YMSCO/QA

M&O

Test Coordination Office

Construction

External Observers:

NRC

State of Nevada

Affected Counties

All documents are mailed to the observers for review and observations

DOE responds to all comments

Design Review Process Improvements

(Continued)

- **Design review process applied for the review of**
 - **Revised North Ramp Analysis (2C Package) to bound the ESF Loop (8A Package) design**
 - **Plan and profile drawings for main drift**
 - **Alcove #2 and #3 design**

Board of Consultants

- **S. H. Bartholomew, Chairman**
- **Dr. Ronald E. Heuer**
- **Jack Lemley**
- **Larry Snyder**

**First meeting scheduled for October 24-25, 1995
Las Vegas, Nevada**

FY96 Budget and Plan

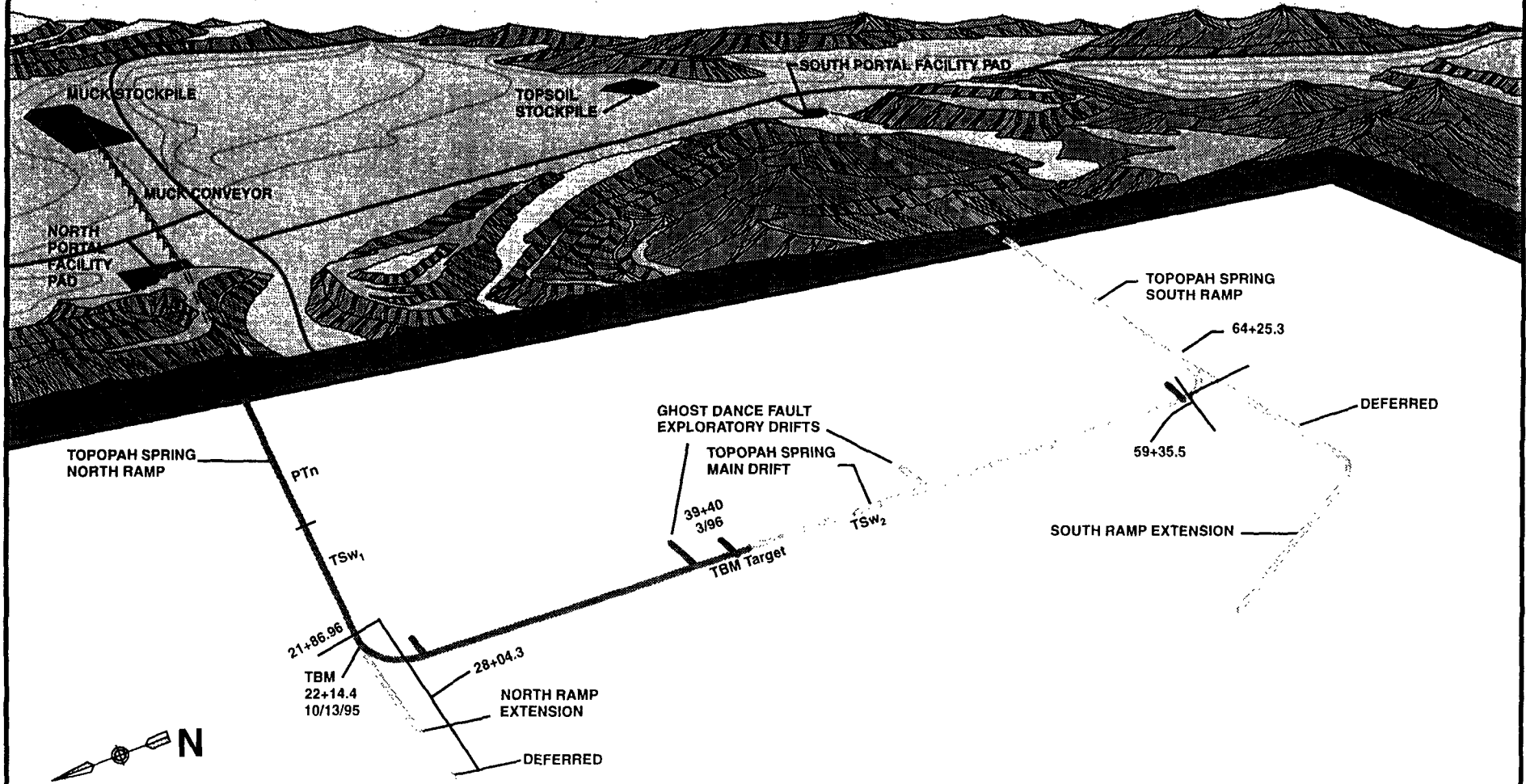
- **ESF budget is \$61.460 Million**
- **Maximize tunnel advance and minimize cost**
 - **Current planning is to proceed to Station 39 + 40 meters (12,923 feet) by March 1996. Decision to cease or continue with further excavation will be determined at the December-January Project Review**
- **Complete design elements essential for TBM excavation and scientific investigations**
 - **Alcove #4, Ghost Dance Fault Alcove #1 and Heater Test Alcove**
- **Complete essential surface facilities required to support TBM excavation**
 - **Change house, waste water, sewer, and compressed air**

FY96 Budget and Plan

(Continued)

- **Defer Calico Hills design/planning**
- **Defer design of ramp extension and south ramp**
- **Defer Ghost Dance Alcove #2**
- **Focus engineering and design efforts to support an “Investment Analysis”**

Exploratory Studies Facility Design



ESF 1996 Excavation Plan

DEFERRED

(CALICO HILLS IS APPROX. 170 METERS BELOW TOPOPAH SPRING- DEFERRED FOR FY 1996)

FY96 Budget & Plan

(Continued)

- **Investment analysis design**
 - **Design supports TSPA needs/requirements**
 - **Design sufficient to support a defensible life-cycle cost estimate**
 - **Design sufficient to support a construction schedule**
 - **Identification of principal risks, issues, and/or concerns remaining and associated potential mitigators**

FY96 ESF Operational Goals

- **Increase FY 96 TBM average production rate to 22 meters (72.2 feet) per day; as compared to the 11 meters (36.1 feet) per day average rate achieved in 1995**
- **Excavate to Station 49 + 00 meters (16,072 feet) by March 1996**
- **Excavate heater test Alcove #1 near Station 28 + 00 meters (9184 feet)**