

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

**PRESENTATION TO
THE NUCLEAR WASTE TECHNICAL REVIEW BOARD**

**SUBJECT: REPOSITORY
BASELINE DESIGN**

PRESENTER: DR. THOMAS O. HUNTER

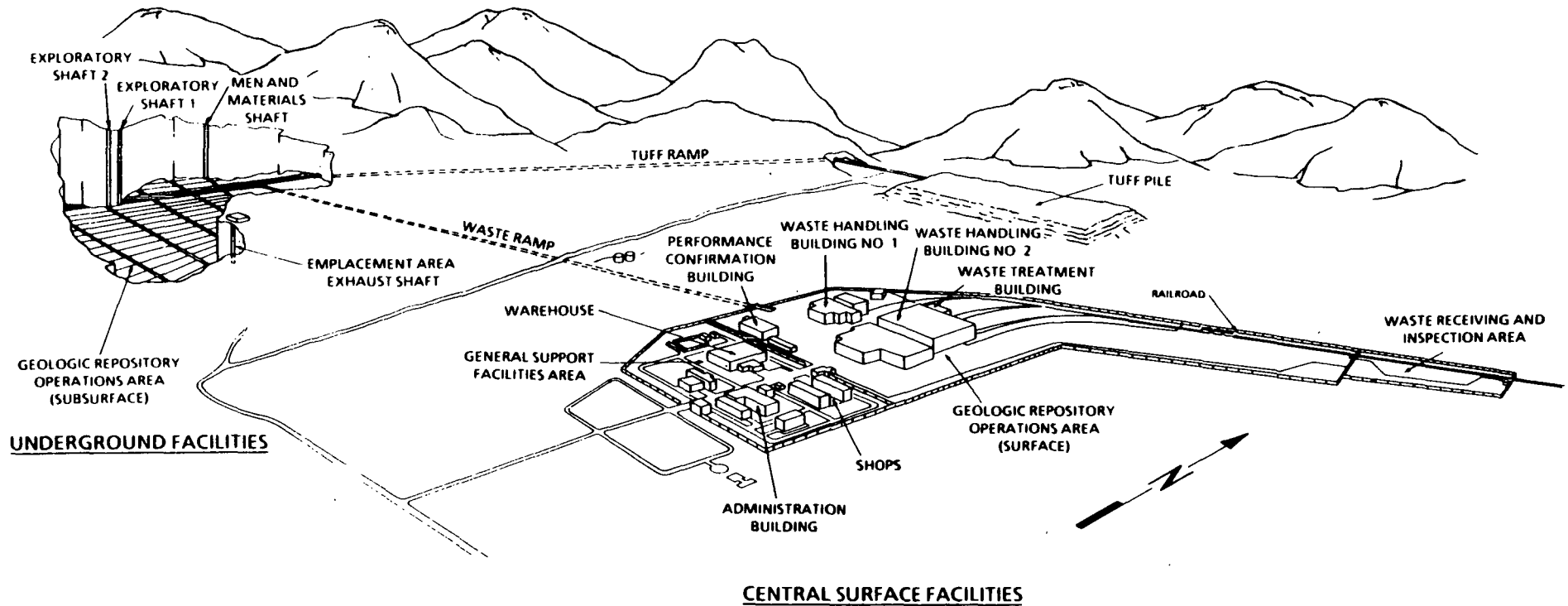
**PRESENTER'S TITLE
AND ORGANIZATION: TECHNICAL PROJECT OFFICER,
SANDIA NATIONAL LABORATORIES
ALBUQUERQUE, NEW MEXICO**

**PRESENTER'S
TELEPHONE NUMBER: (505) 844-9160**

MARCH 19-20, 1990

**PHOTOGRAPH OF
CONCEPTUAL DESIGN REPORT**

PRELIMINARY DRAWING OF REPOSITORY COMPLEX



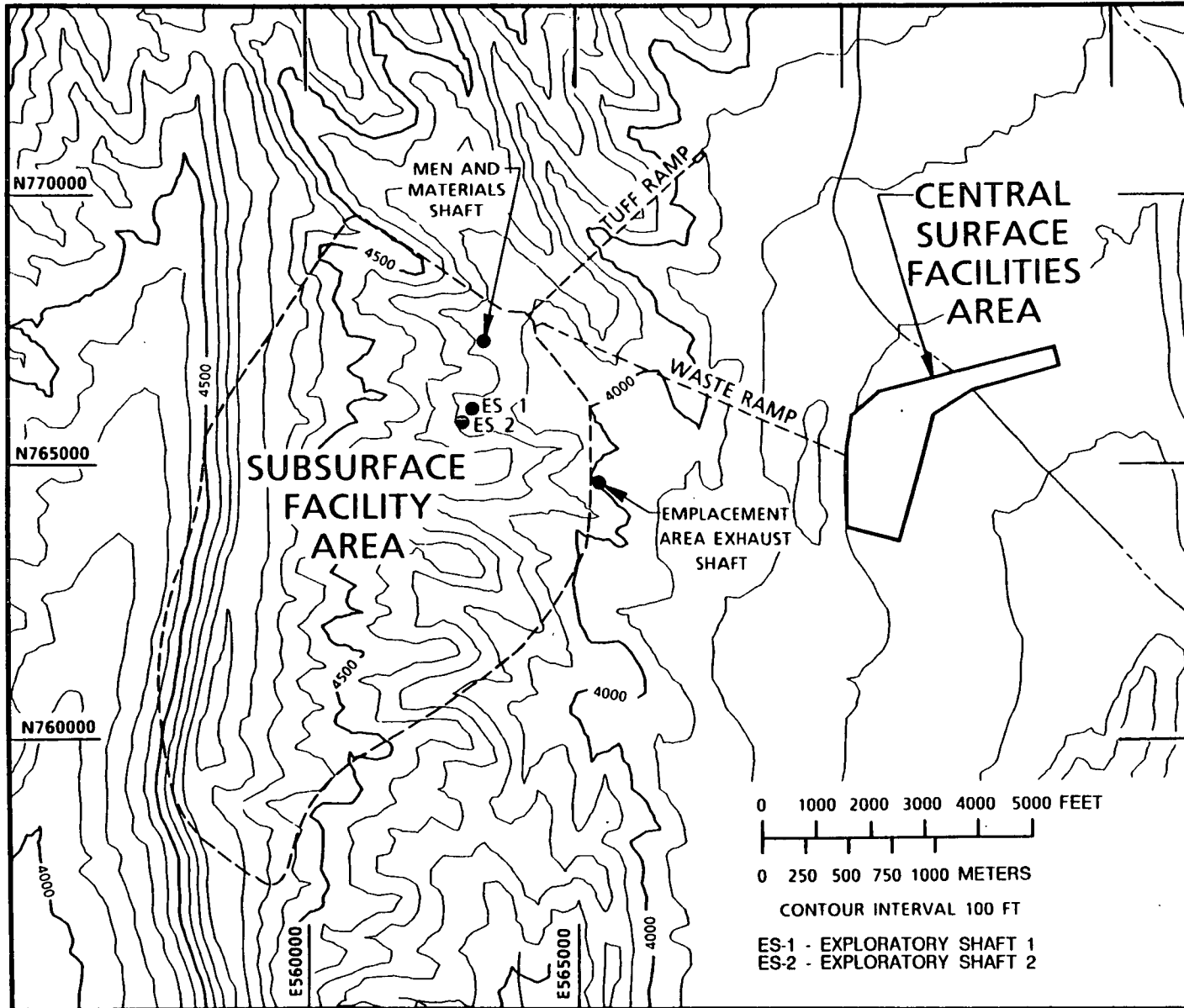
DESIGN BASIS SUMMARY

WASTE PARAMETERS

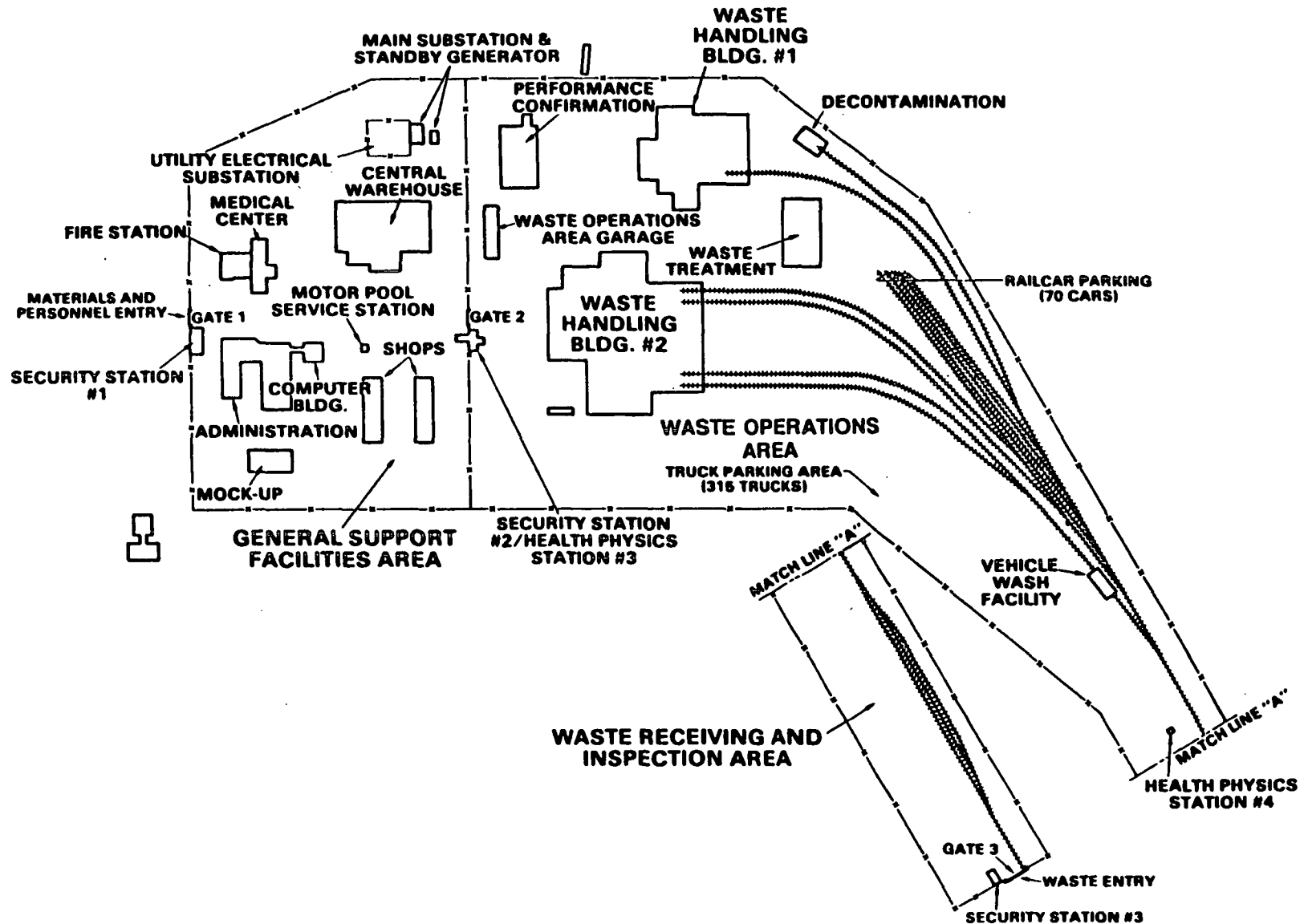
<u>WASTE FORM</u>	<u>REPOSITORY CAPACITY</u>		<u>ASSEMBLIES</u>	<u>CONTAINERS</u>	<u>WATTS/ CONTAINER</u>
	<u>(MTU)</u>				
SPENT FUEL	62,000		215,900	24,600	
PWR	37,200		80,600	15,200	3,000
BWR	24,800		135,300	9,400	2,000
	7,360				
DHLW	640		—	14,720	200
WVHLW			—	300	200

<u>WASTE FORM</u>	<u>SHIPPING CASKS</u>		<u>RECEIPT RATES (MTU/yr)</u>			
	<u>RAIL</u>	<u>TRUCK</u>	<u>YEAR 1,2,3</u>	<u>4</u>	<u>5</u>	<u>6</u>
SPENT FUEL	2,900	47,000	400	900	1,800	3,000
PWR			240	540	1,080	1,800
BWR			160	360	720	1,200
DHLW		—	—	—	—	—
WVHLW			0	0	0	400

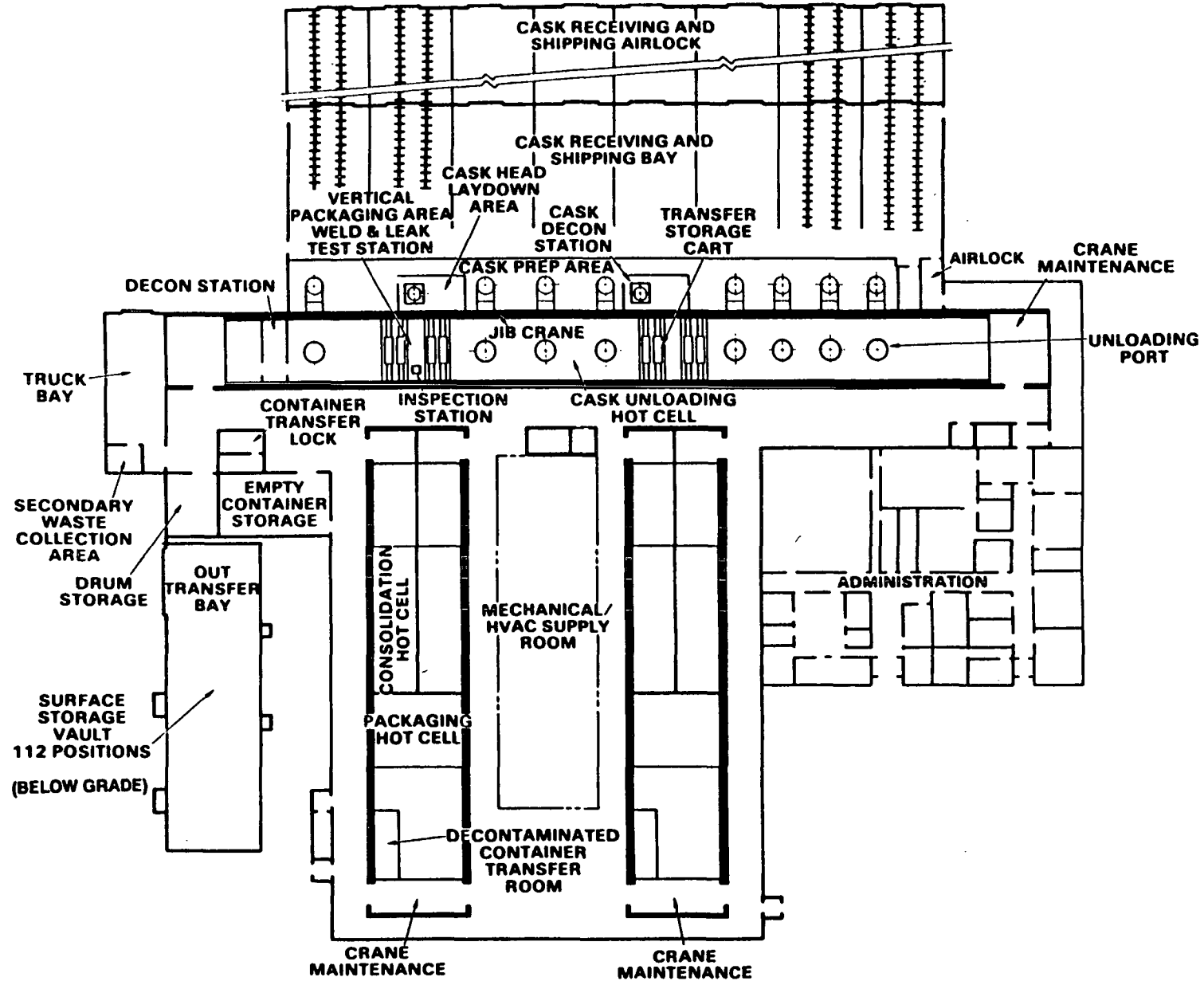
UNDERGROUND FACILITY AREA



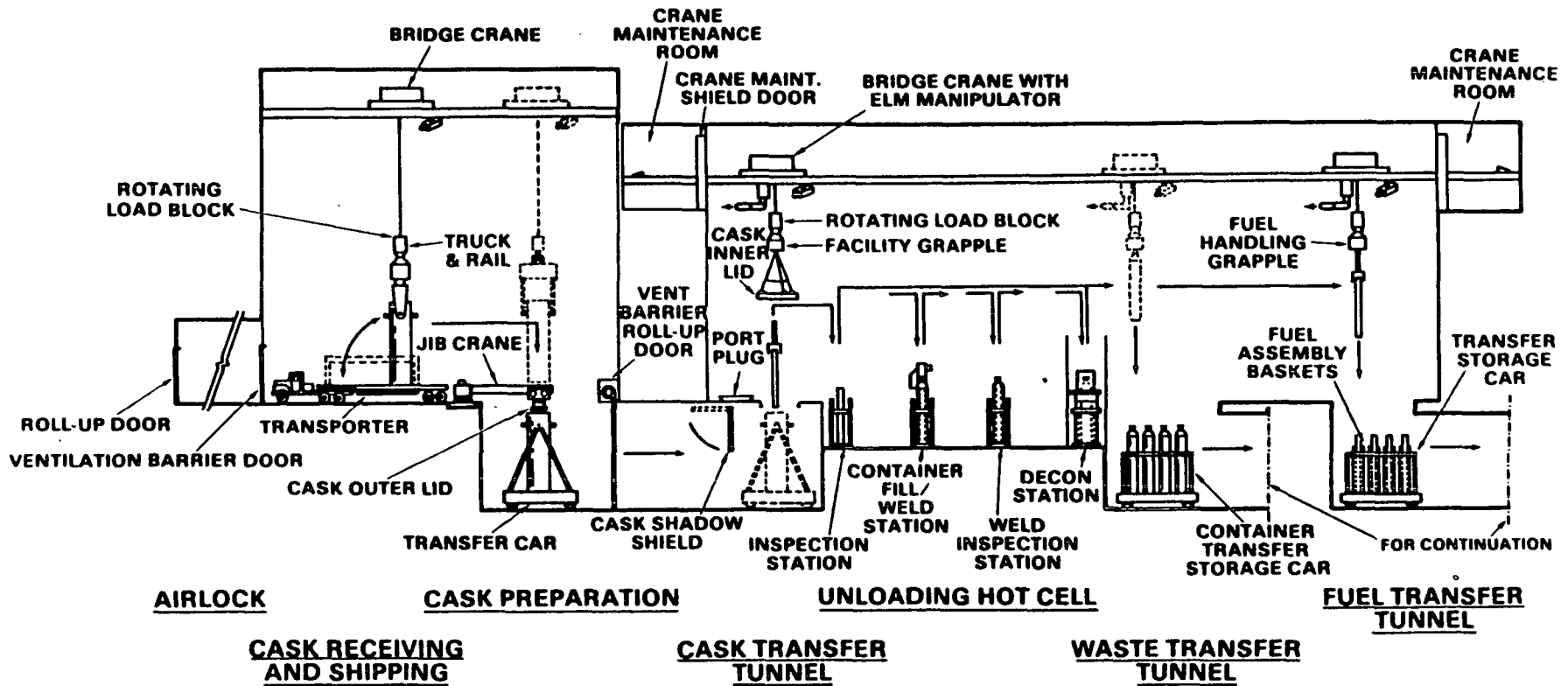
CENTRAL SURFACE FACILITIES AREA



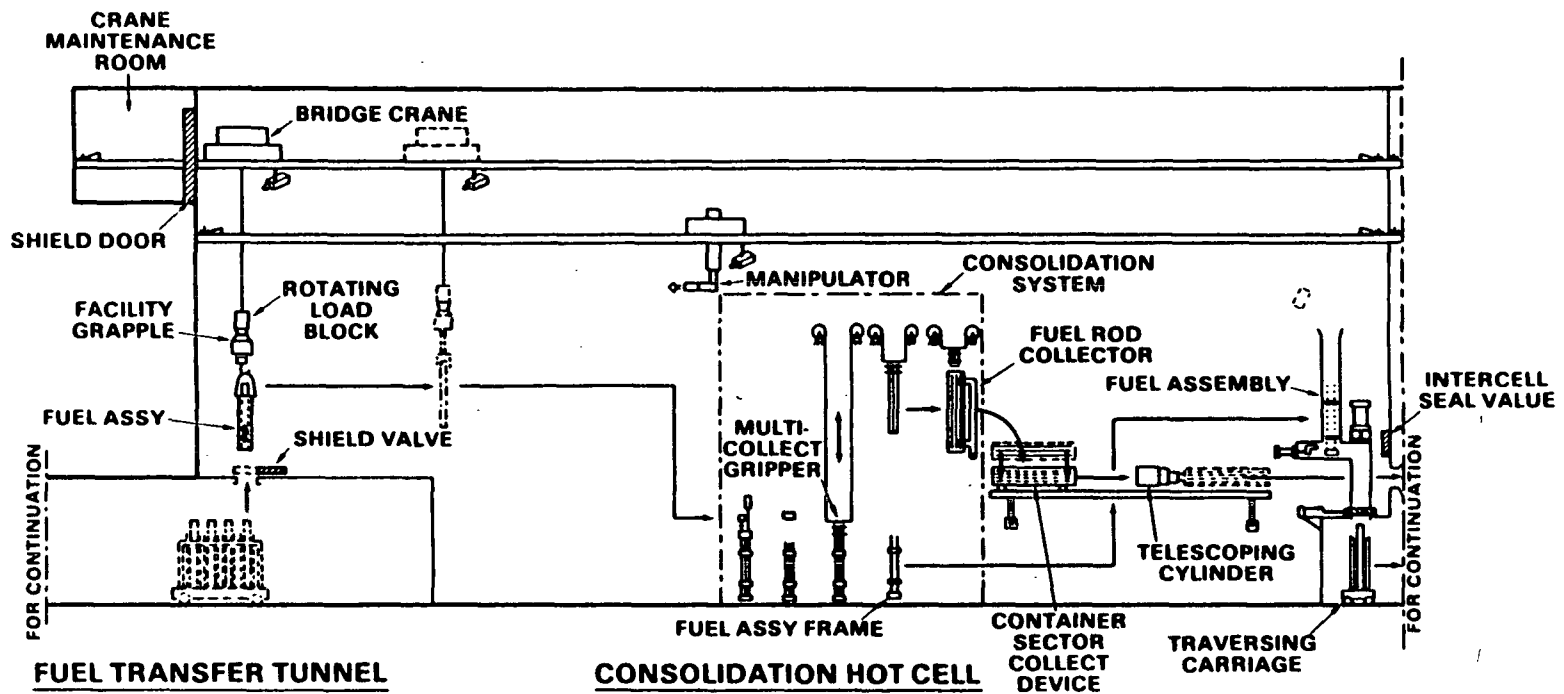
WASTE HANDLING BUILDING



WASTE RECEIVING OPERATIONS



SPENT FUEL CONSOLIDATION OPERATIONS



USABLE AREA FOR NUCLEAR WASTE DISPOSAL IN YUCCA MOUNTAIN

CONSTRAINTS:

● SITING GUIDELINES:

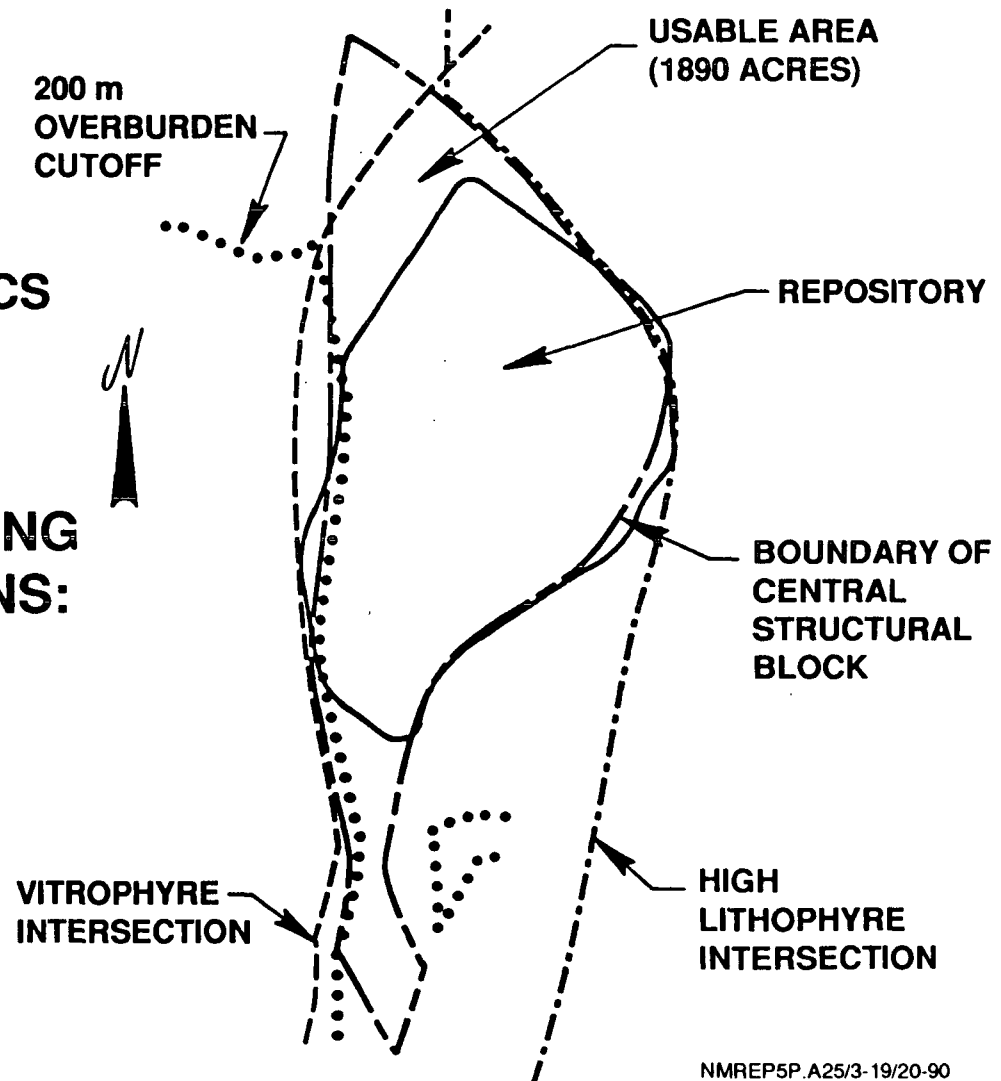
- 200 m OVERBURDEN
- ROCK CHARACTERISTICS
 - * LITHOPHYSAE
 - * VITROPHYRE

● MINING/WASTE HANDLING EQUIPMENT LIMITATIONS:

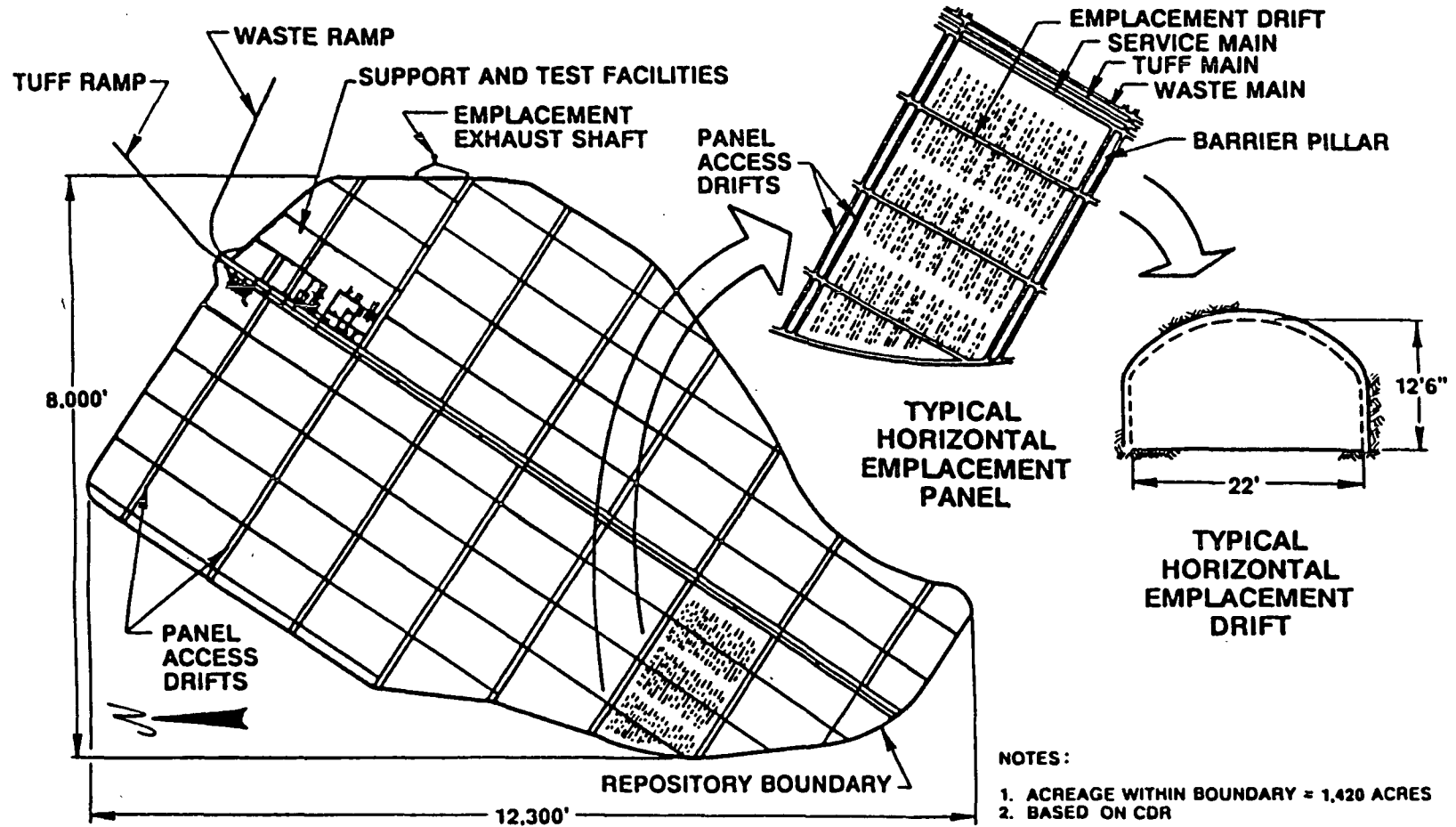
- 10% MAXIMUM GRADE

MODEL:

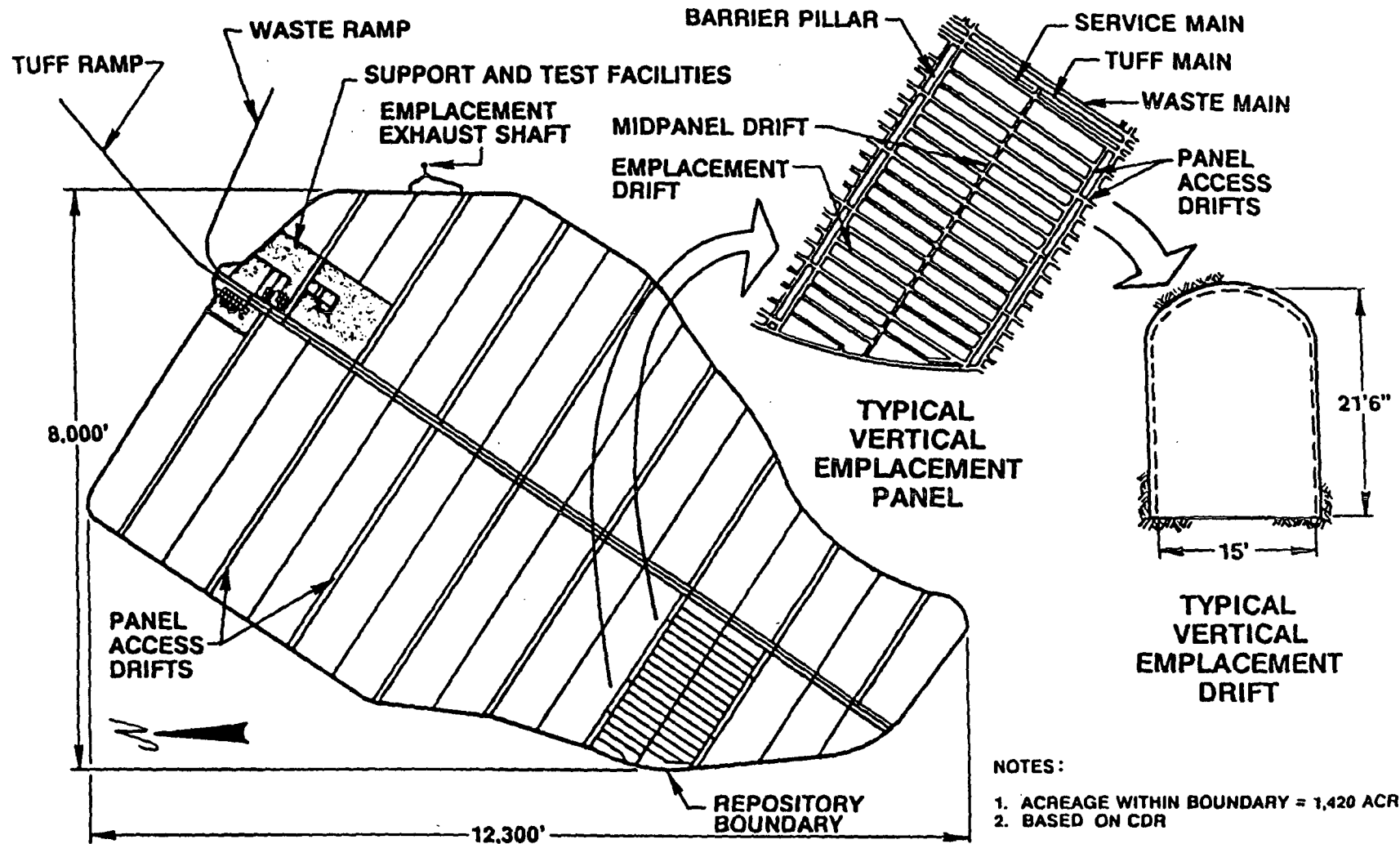
- 3-D GRAPHICS REPRESENTATION OF YUCCA MOUNTAIN



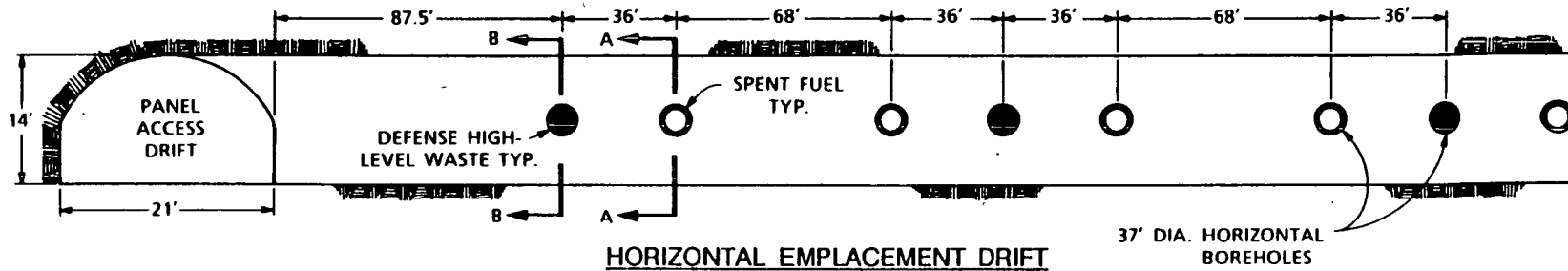
UNDERGROUND DESIGN FOR HORIZONTAL EMPLACEMENT



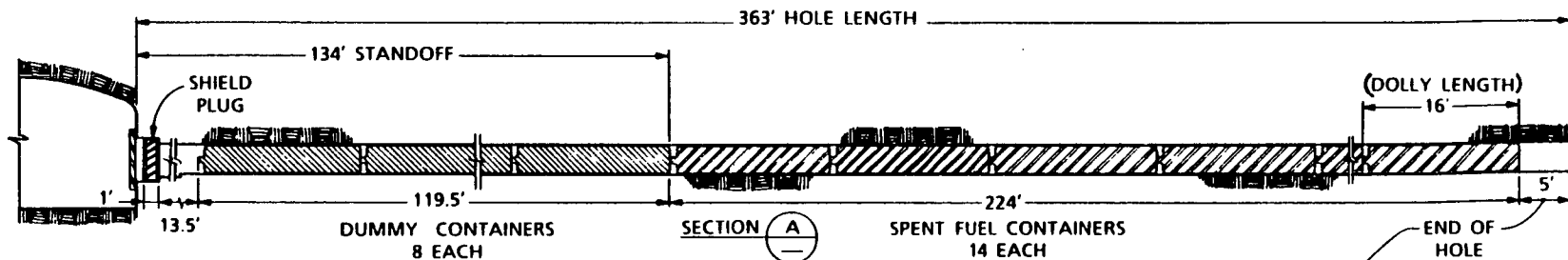
UNDERGROUND DESIGN FOR VERTICAL EMPLACEMENT



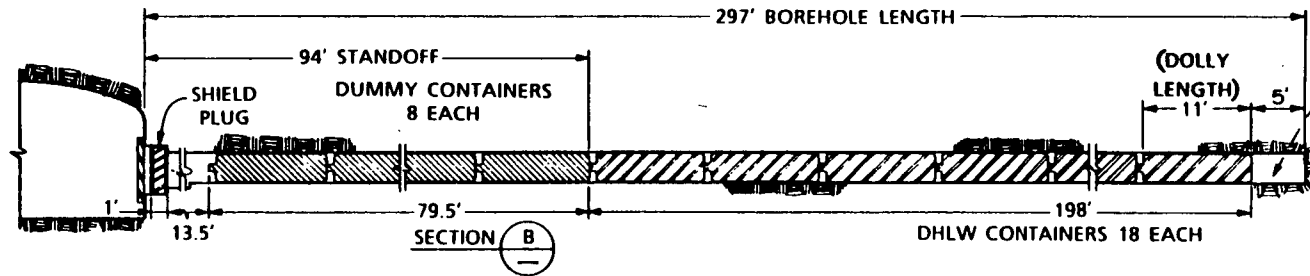
PANEL DETAILS HORIZONTAL EMPLACEMENT



HORIZONTAL EMPLACEMENT DRIFT



HORIZONTAL BOREHOLE DETAIL - SPENT FUEL



HORIZONTAL BOREHOLE DETAIL - DEFENSE HIGH-LEVEL WASTE

- NOTES**
1. DIMENSIONS SHOWN ARE EXCAVATED.
 2. DETAILS BETWEEN BOREHOLE AND CONTAINERS NOT SHOWN.

TYP. - TYPICAL
DIA. - DIAMETER

NOT TO SCALE

PANEL DETAILS -VERTICAL EMPLACEMENT

