

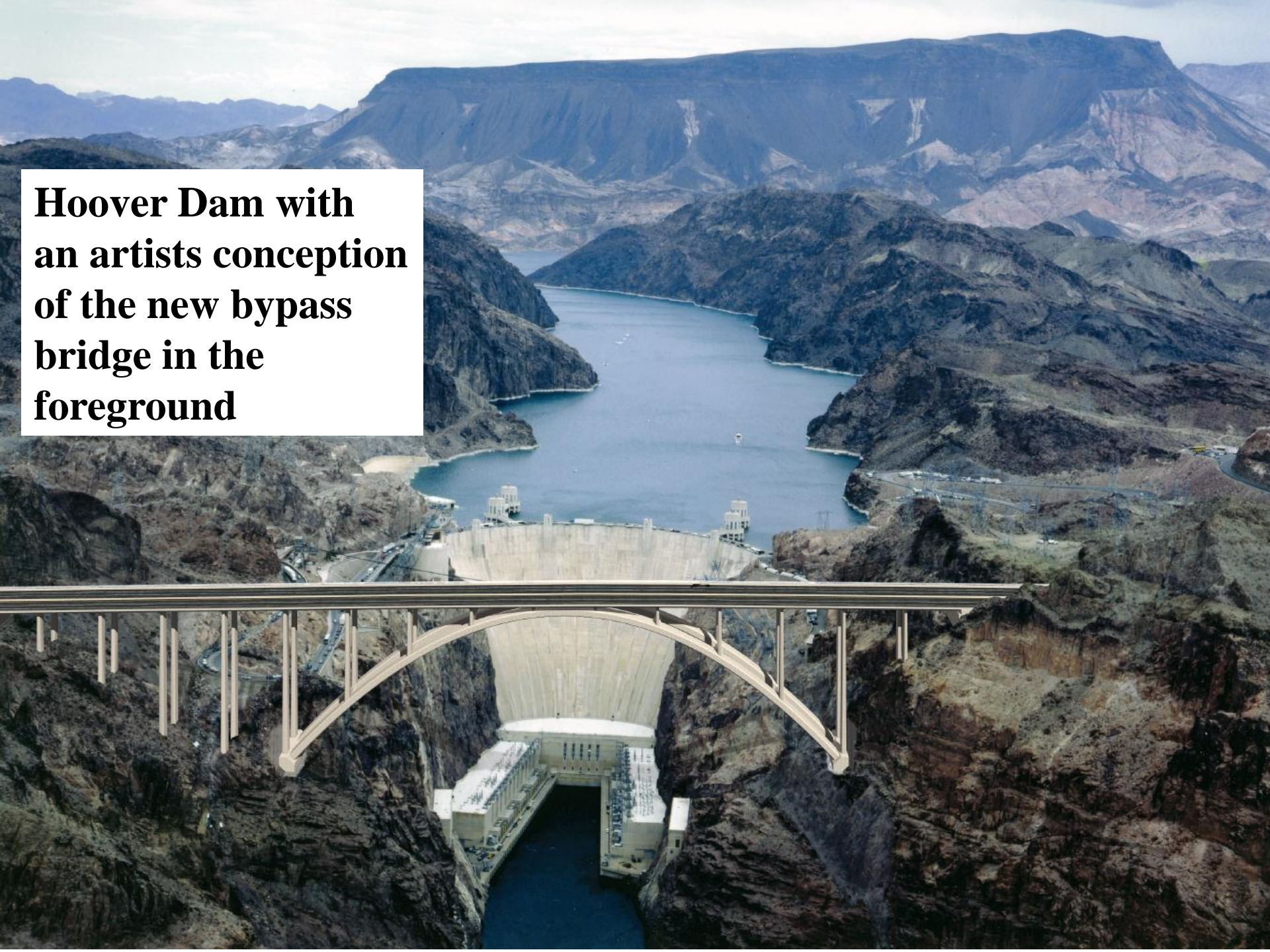
**HOOVER DAM**


**INFORMATION**



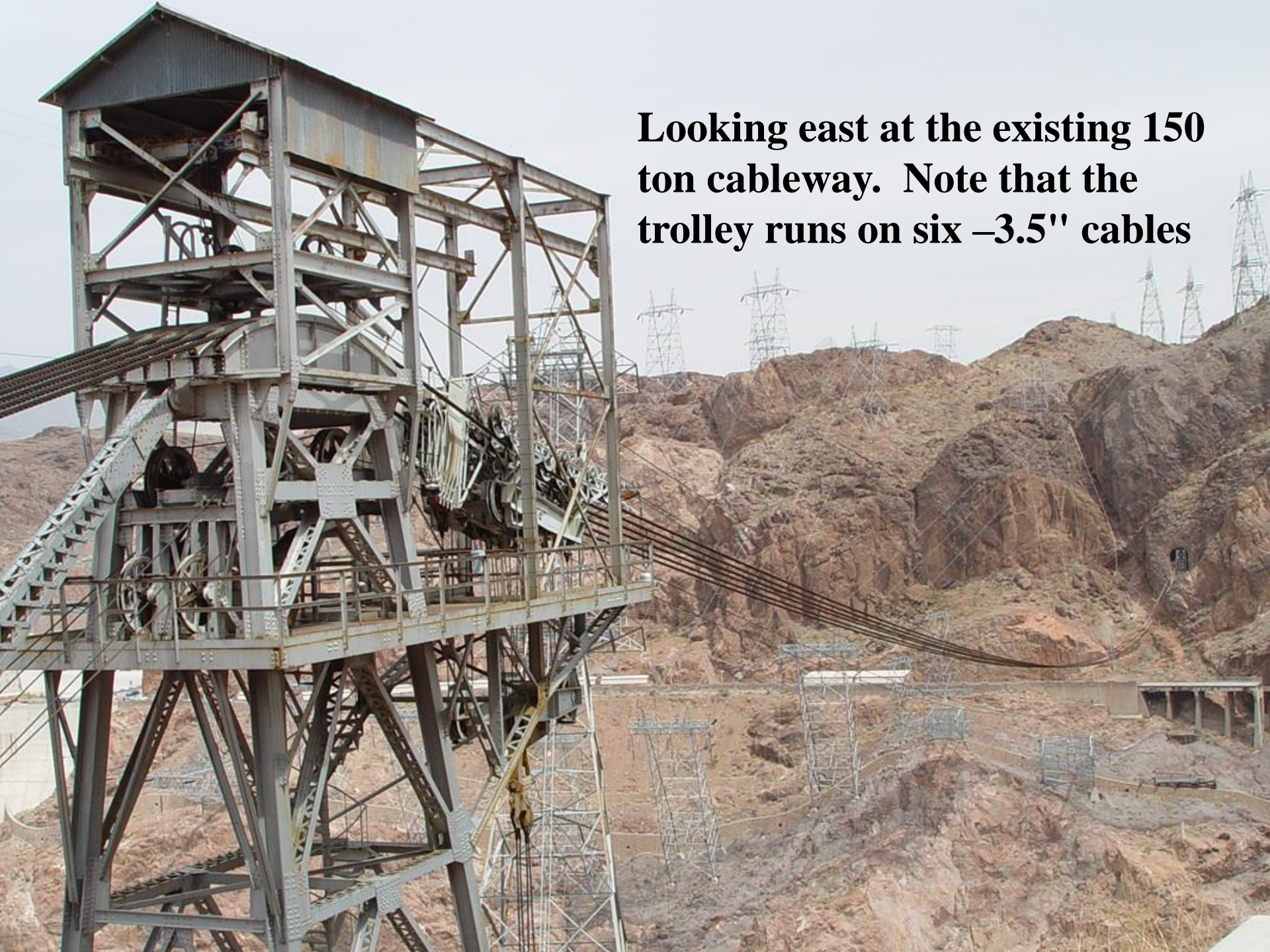


**Hoover Dam with  
an artists conception  
of the new bypass  
bridge in the  
foreground**



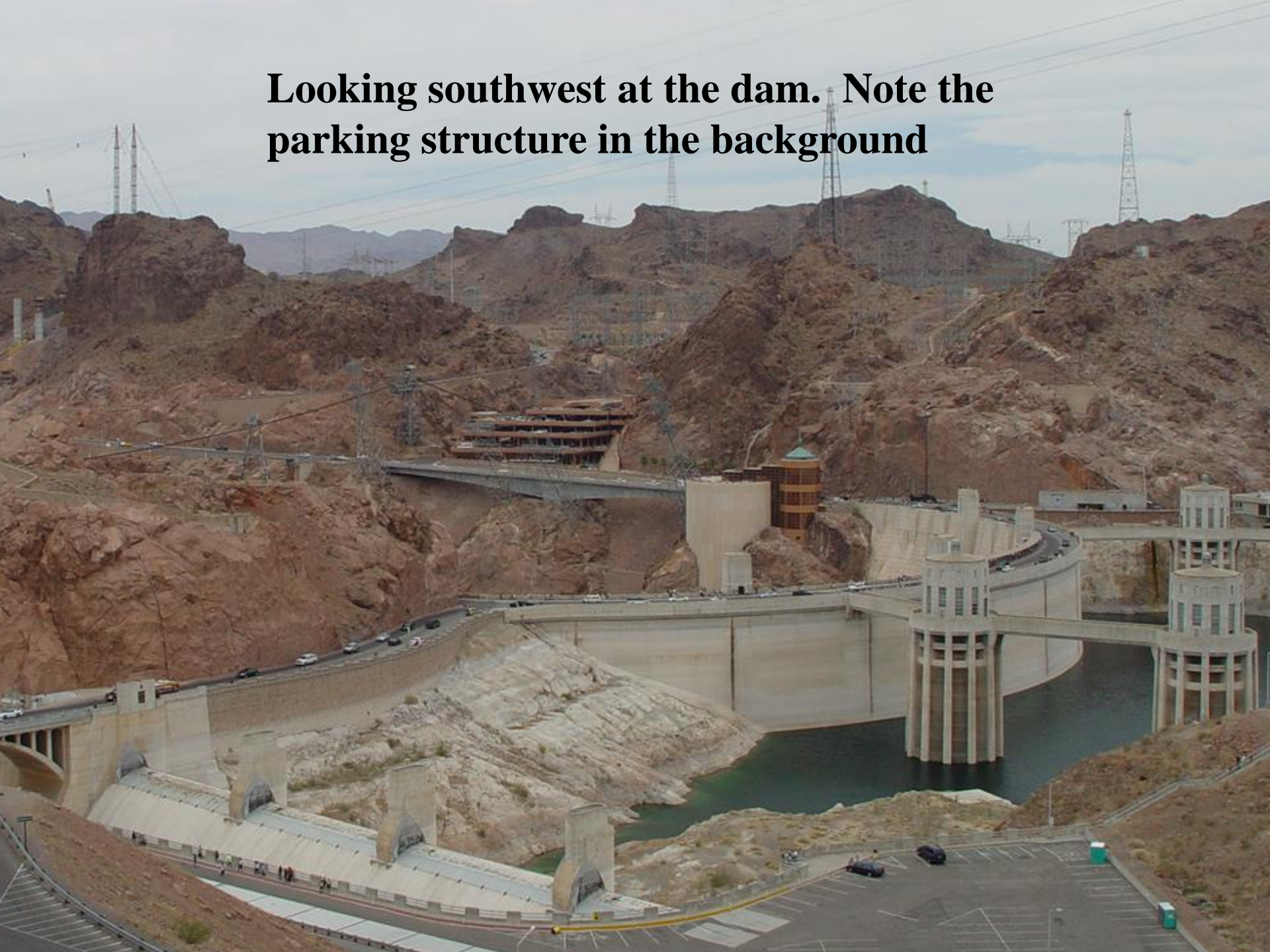
A large, complex steel structure, likely a cableway tower, stands on a rocky, reddish-brown hillside. The structure is made of a lattice of steel beams and has a platform at the top with various mechanical components, including what appears to be a motor or winch. Several thick cables extend from the tower across the sky towards the left. In the background, more cables and smaller structures are visible against a cloudy sky. In the foreground, a road with several cars is visible, and a person wearing sunglasses is partially visible in the bottom right corner.

**Looking south at the existing 150 ton cableway. Note the trolleys for the temporary cableways in the upper background**



**Looking east at the existing 150 ton cableway. Note that the trolley runs on six –3.5" cables**

**Looking southwest at the dam. Note the parking structure in the background**



**Looking west at the dam**









**THE UNITED STATES OF AMERICA  
DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION  
BOULDER CANYON PROJECT  
CONSTRUCTION CONTRACTORS**

**GENERAL CONSTRUCTION**

**SIX COMPANIES, INC.**

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**MACDONALD & KAHN CO., LTD.**

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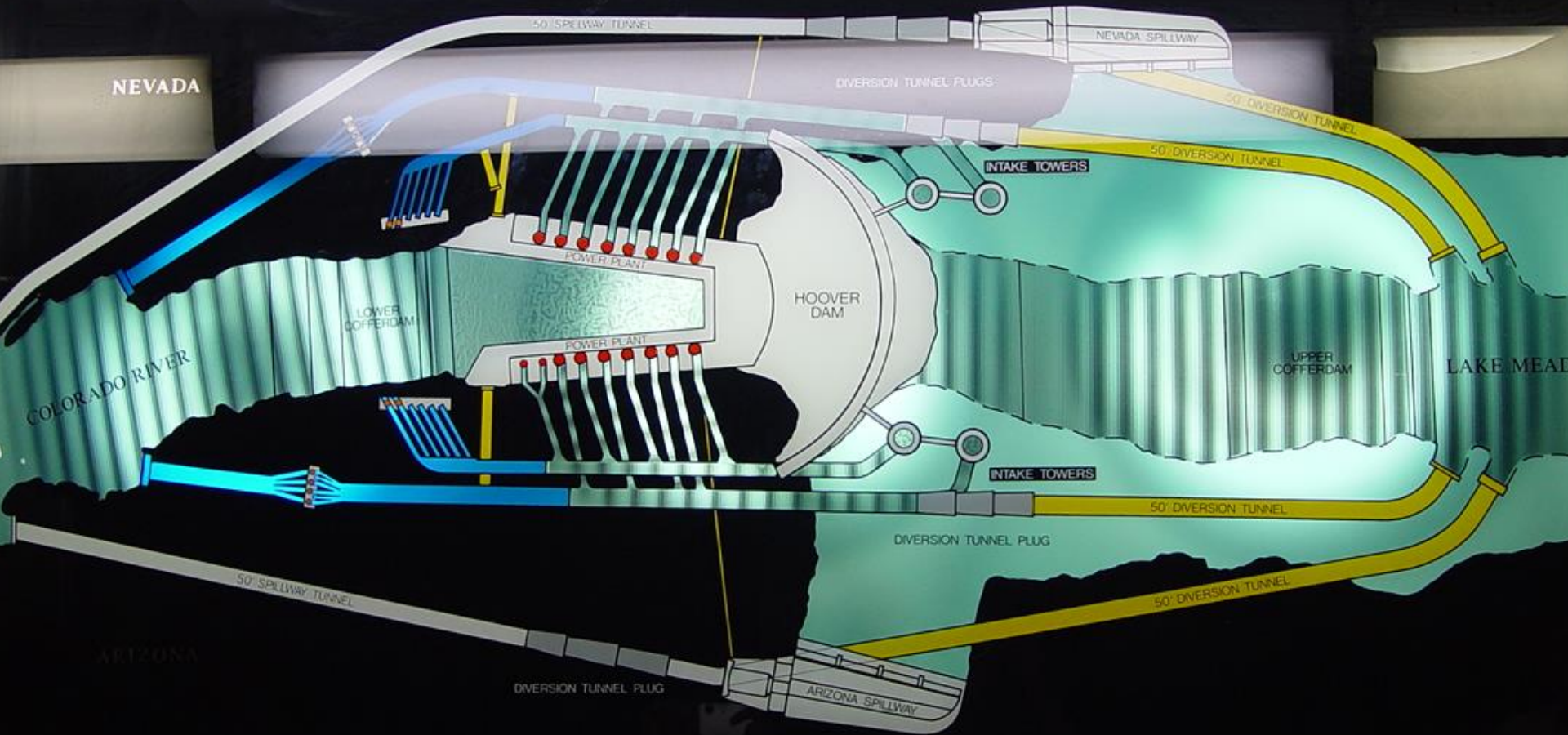
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**Plan view of the piping and tunnels inside the dam**

Crest, 1244 Feet

Arizona Spillway

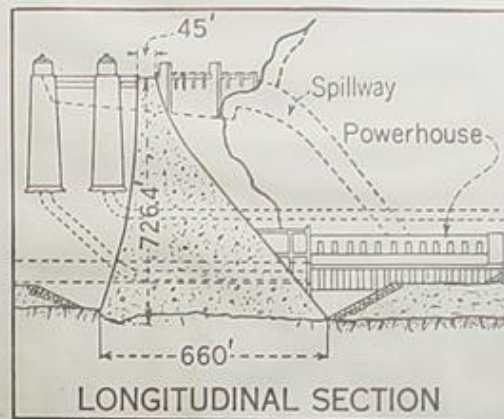
650' x 150' - 170' Deep

Drum Gates, 100' x 16'

Intake Towers  
395' in height

30' Steel  
Penstocks

13' Steel  
Penstocks



LONGITUDINAL SECTION

Maximum depth, 589'

726.4 Feet

Tunnel  
Plug

Tunnel  
Plug

8½' Steel  
Outlet Pipes

6-72" Needle  
Valves

Canyon Wall  
Outlet Works  
209' x 41' x 69'  
6-84" Needle  
Valves

Arizona  
Spillway

Tunnel  
50' Diameter  
2200' in. length

Stoney  
Gate  
50' x 35'

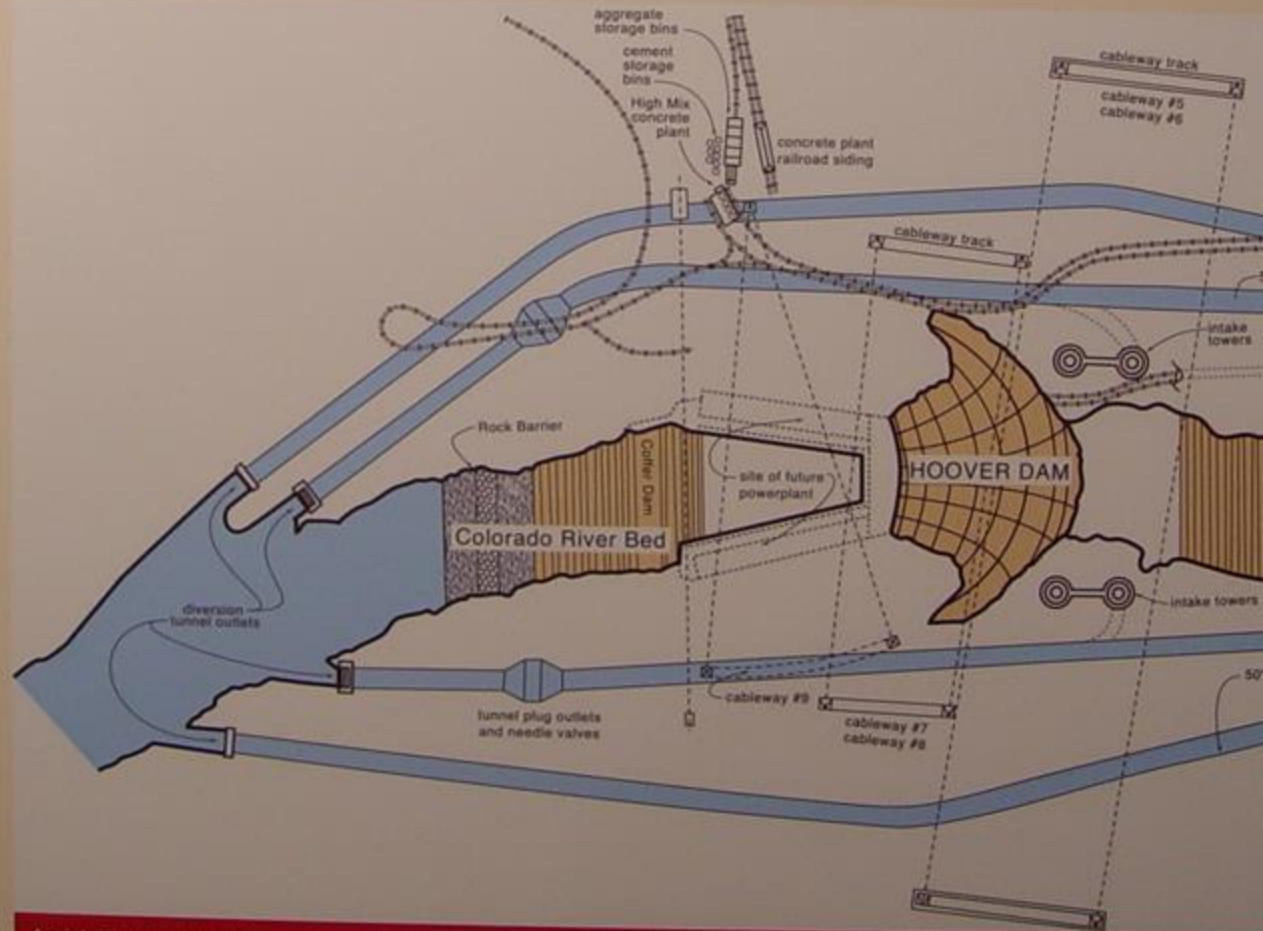
TABLE OF EQUIVALENTS

English Units	Metric Units
8½ (feet)	2.591 (meters)
13'	3.962
16'	4.877
30'	9.144
35'	10.668
41'	12.497
45'	13.716
50'	15.240
69'	21.031
100'	30.480
150'	45.720
170'	51.816
209'	63.703
245'	74.676
395'	120.396
589'	179.527
650'	198.120
660'	201.168
726.4'	221.407
1244'	379.172
2200'	670.561
72" (inches)	1.829 (meters)
84"	2.134

# THE CONSTRUCTION SITE

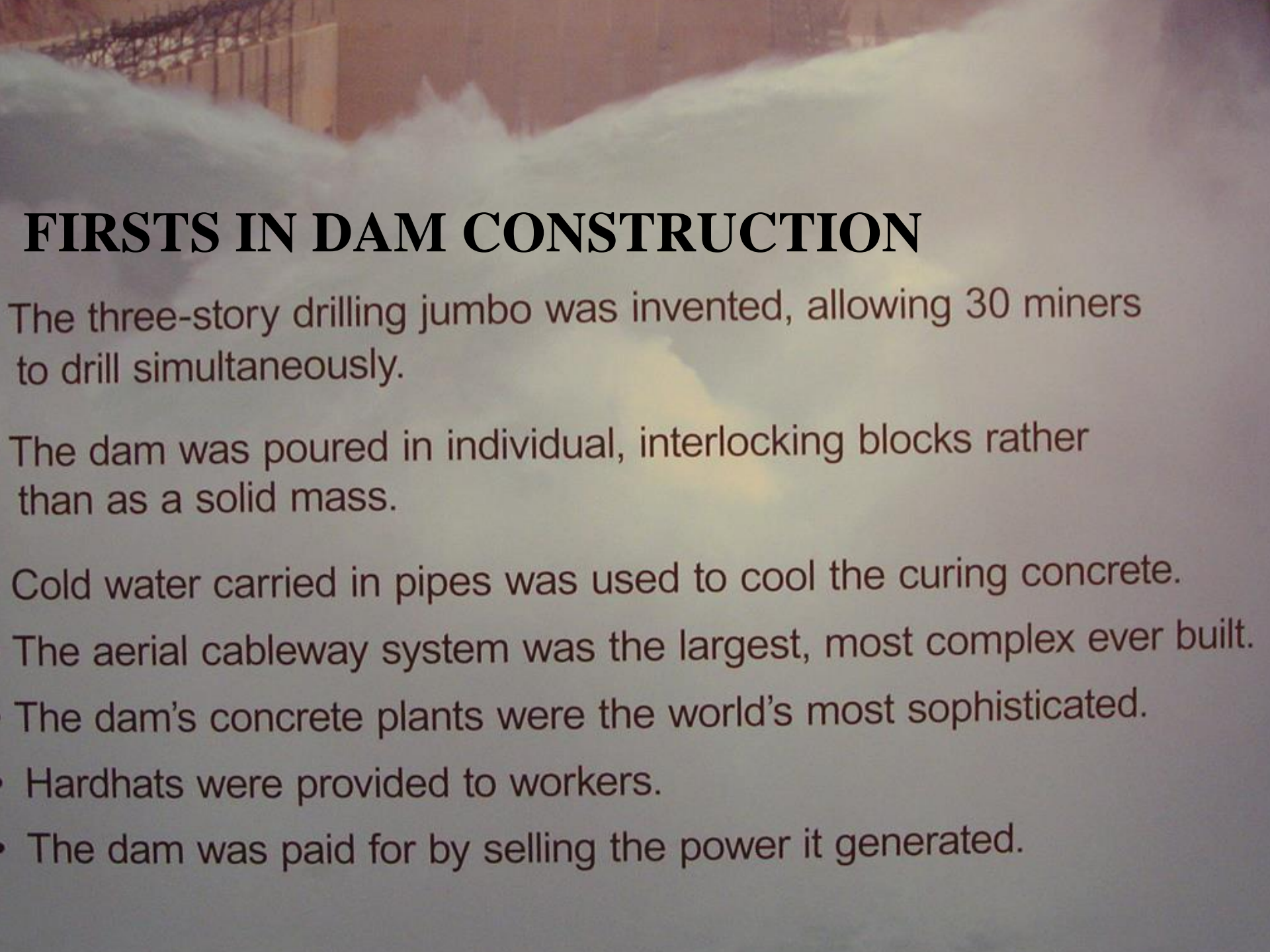
The Hoover Dam construction site filled the bed of the Colorado River, and spread over canyon and desert.

Roads, railroad lines, and the world's most advanced cableway system were among the features that had to be built at the dam site.



Aerial diagram of the Hoover Dam Construction Site





## **FIRSTS IN DAM CONSTRUCTION**

The three-story drilling jumbo was invented, allowing 30 miners to drill simultaneously.

The dam was poured in individual, interlocking blocks rather than as a solid mass.

Cold water carried in pipes was used to cool the curing concrete.

The aerial cableway system was the largest, most complex ever built.

The dam's concrete plants were the world's most sophisticated.

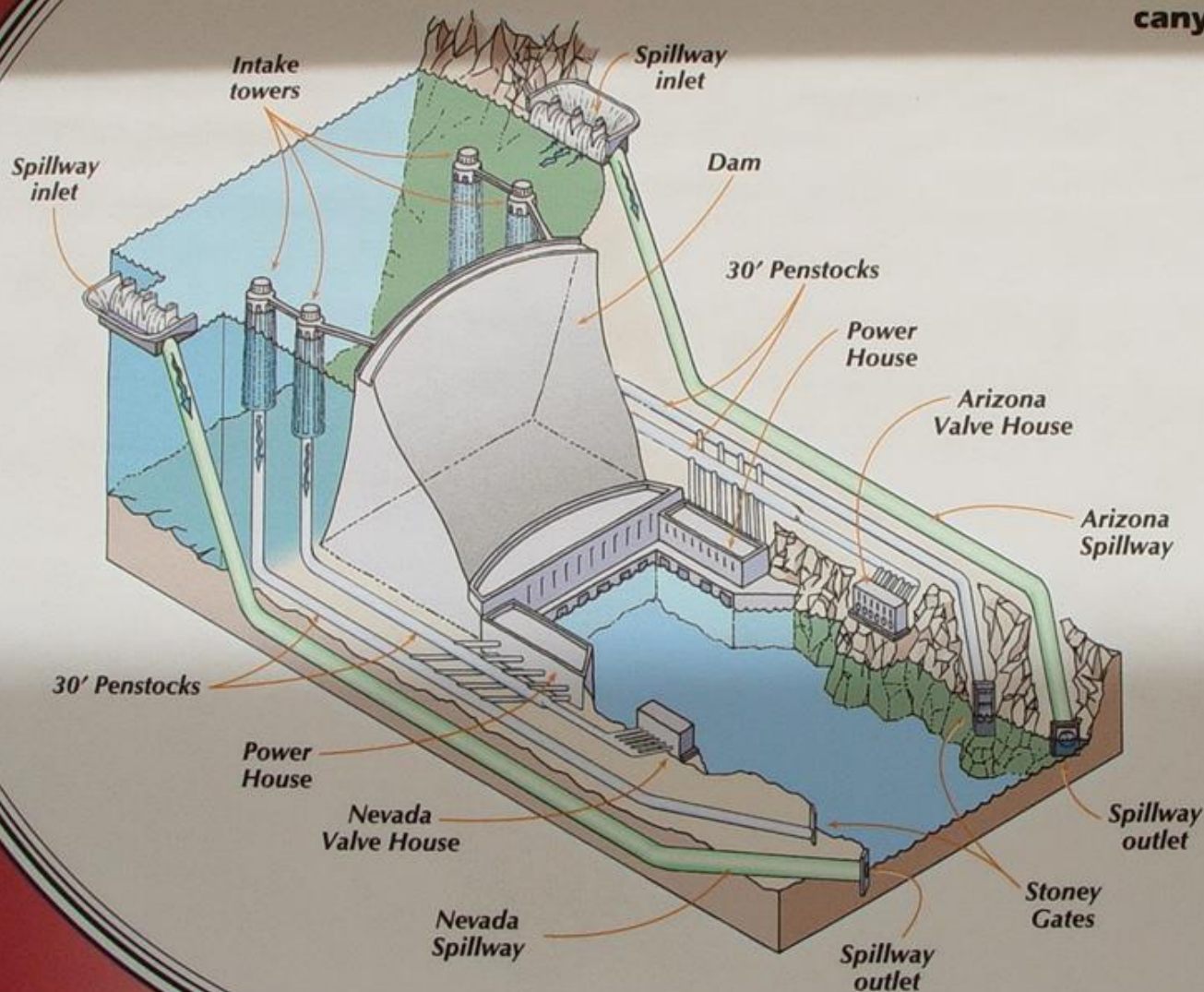
• Hardhats were provided to workers.

• The dam was paid for by selling the power it generated.

B

# BEHIND the CANYON WALLS

There is far more to Hoover Dam than meets the eye. An extensive network of tunnels, pipes and structures lies behind the canyon walls.



Over seven miles of 50' diameter tunnels were dug during Hoover Dam construction. The tunnels alone are so enormous that excavating and lining them with concrete took as much time and cost as constructing the dam itself.

Spillways protect the dam by diverting flood water around the dam. They have only been used twice, in 1941 during testing and in the 1983 flood. Excavating and lining these steep tunnels with concrete was extremely difficult, especially when tunnel temperatures reached 120 degrees.

Three miles of steel penstocks (pipes) ranging from 30 - 8½ feet in diameter carry water from Lake Mead to the turbines that power the generators.

**FINÉ**

