

**ENGINEER'S REPORT
ON THE PROJECTS OF THE
VOLCAN LAND & WATER COMPANY**

H. HAWGOOD

NOVEMBER, 1912

VOL. 2, MAPS

W. G. HENSHAW

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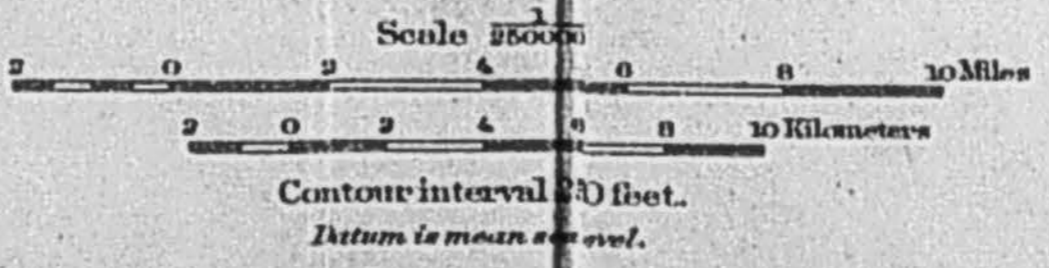
17° 45' R. 6 W. R. 7 W. R. 8 W. 15 R. 5 W. R. 4 W. 15 R. 3 W. (Sheet No. 1) R. 2 W. 117° 00' R. 1 W. R. 1 E. R. 2 E. 45 R. 3 E. R. 4 E. 116° 30'



C
O
C
E
A
N

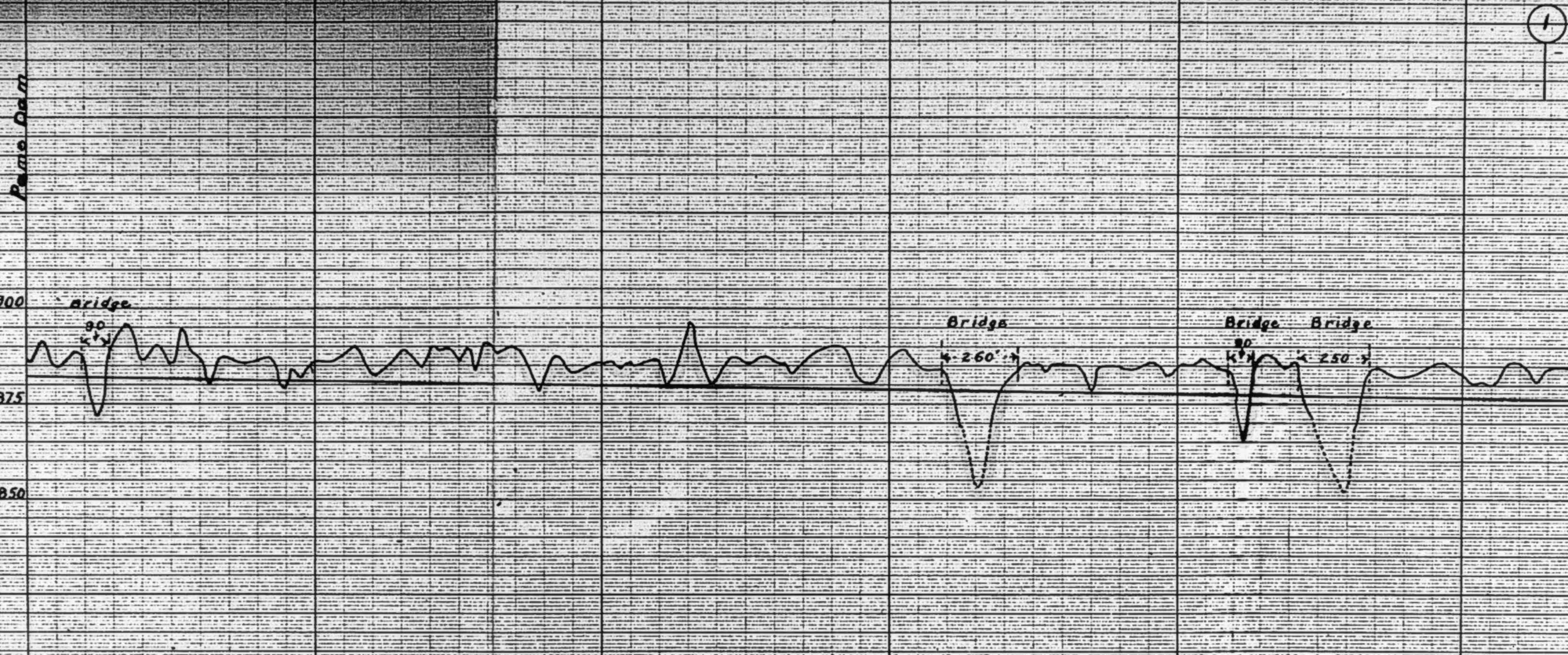


32° 30' 117° 45' ENGRAVED JAN. 1904 BY U.S.G.S. 39
Topography by U.S. Geological Survey.
Reduced from the nine atlas sheets covering this area.
Surveyed in 1891 and 1898-1902.

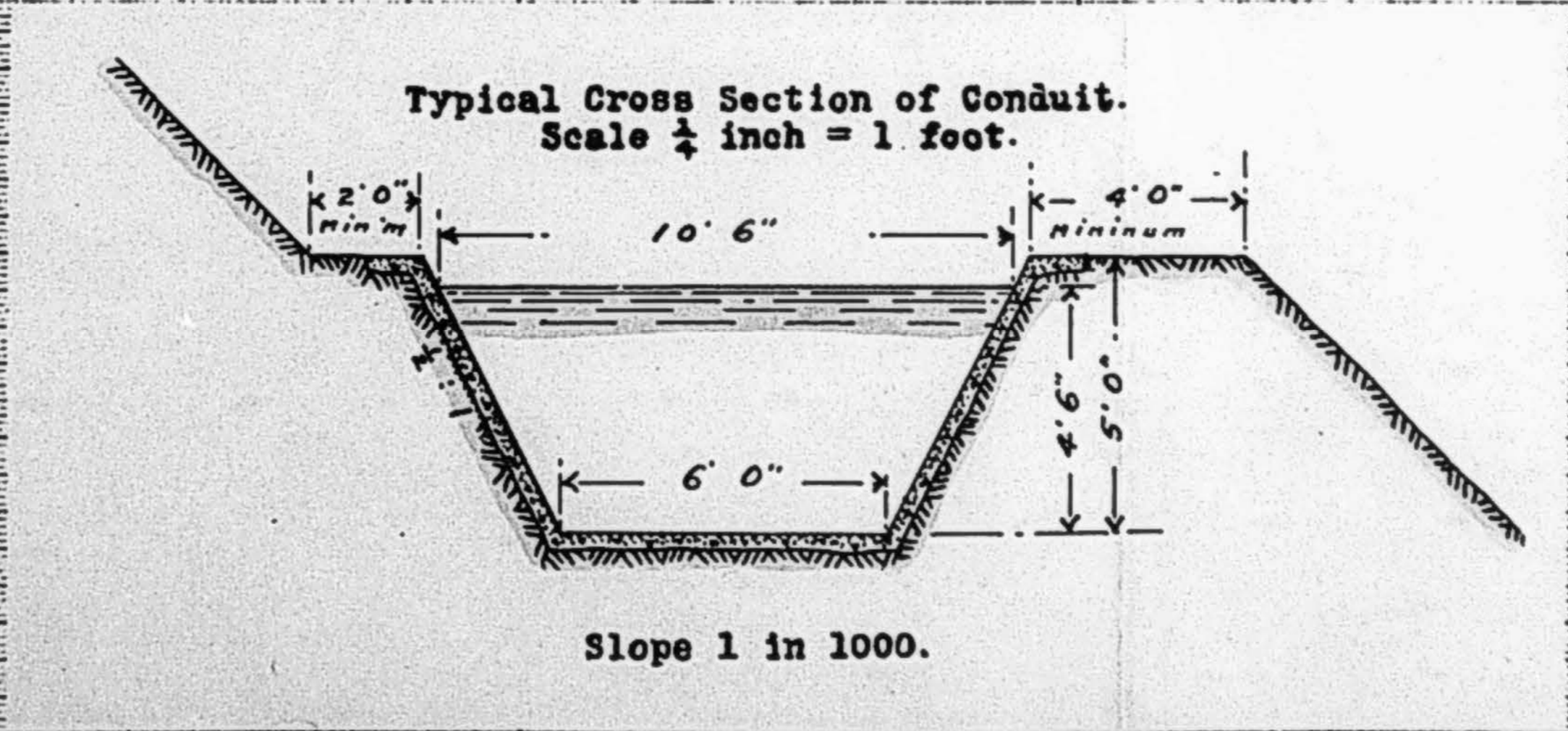


116° 30' 32° 30' Edition of June 1904, reprinted June 1909.

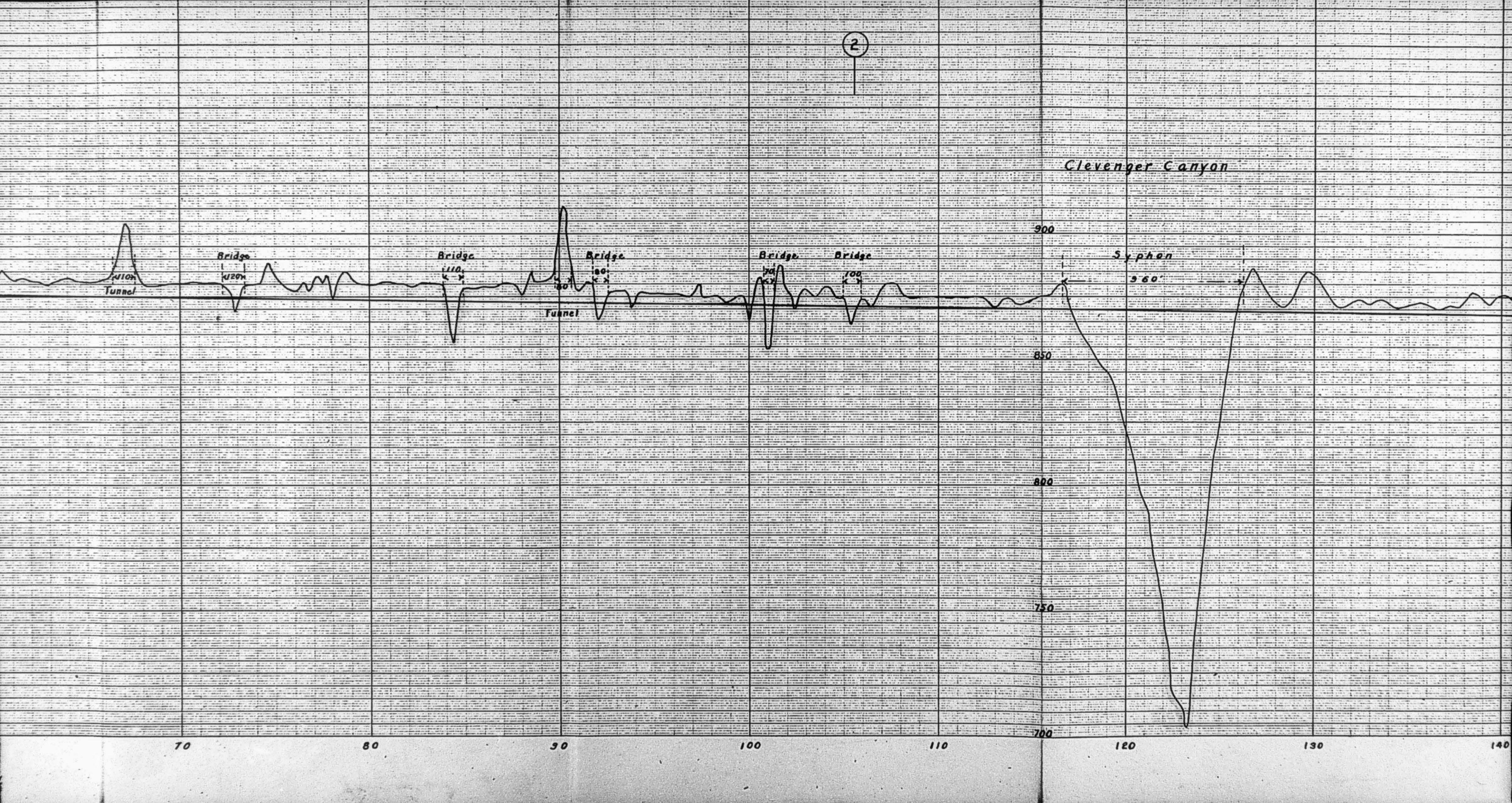
Grimes-Stossforth Stationery Co.
AGENTS
SOUTHERN CALIFORNIA
SHEET NO. 2



VOLCAN LAND & WATER COMPANY.
 Profile of Conduit between Pamo and San Clemente Reservoirs.
 H. Hawgood, September, 1912.



0 10 20 30 40 50 60



3

4

Bridge

150
K

Bridge

40
K

3 Bridges

40
K

50
K

20
K

Bridge

40
K

Bridge

50
K

Bridge

40
K

T

140

150

160

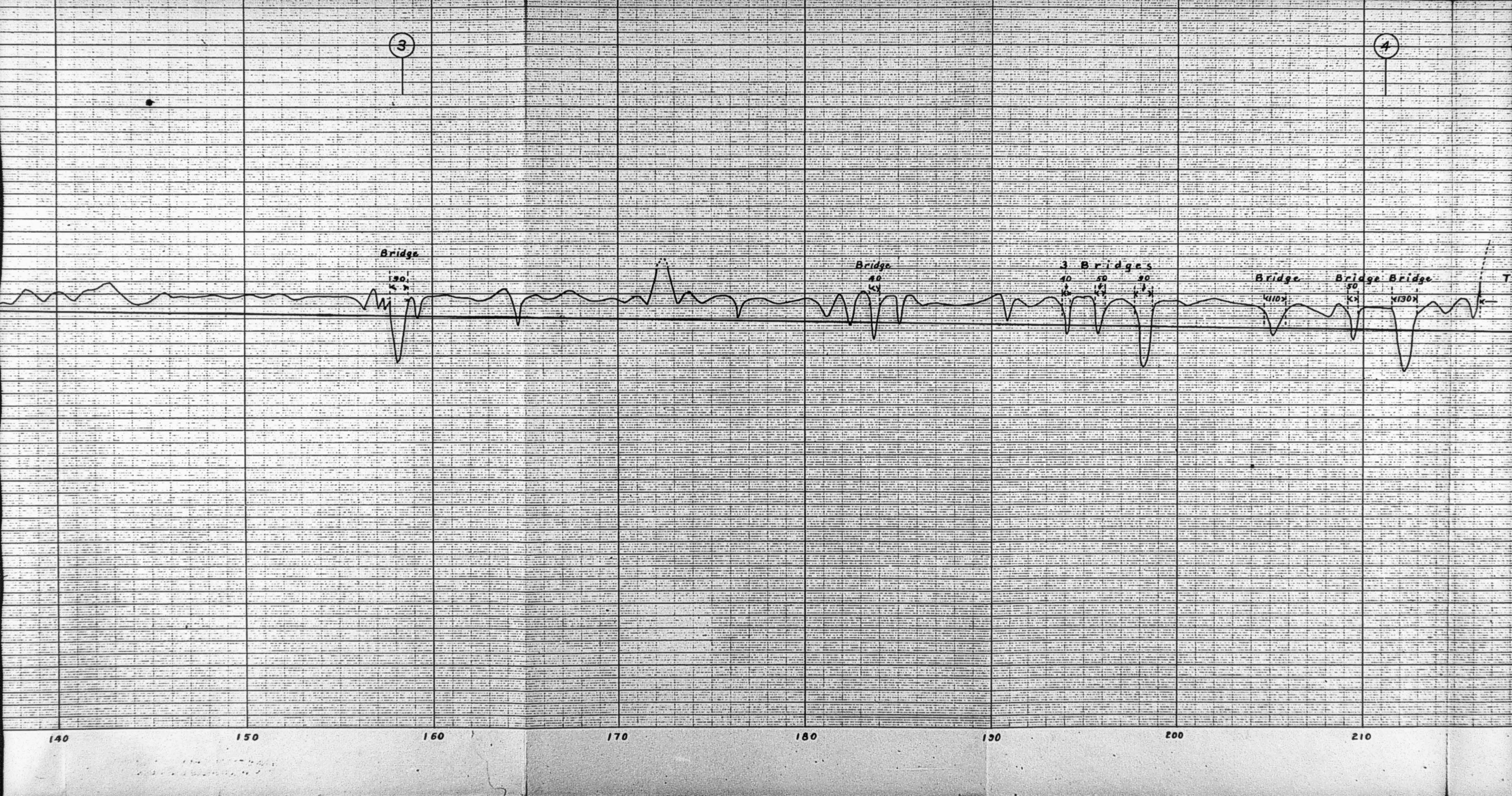
170

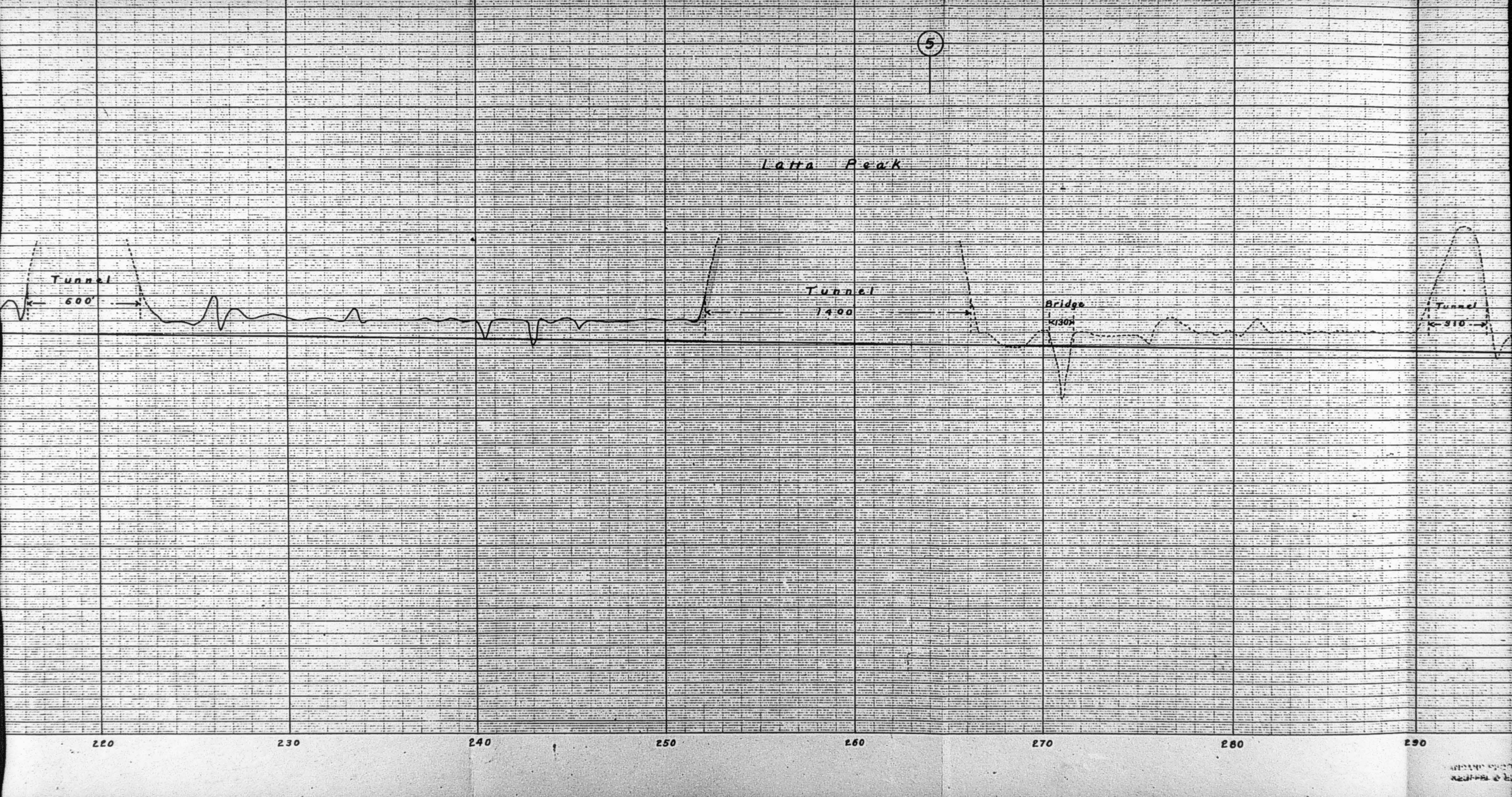
180

190

200

210





5

Latta Peak

Tunnel

600'

Tunnel

1400

Bridge

1300'

Tunnel

910'

220

230

240

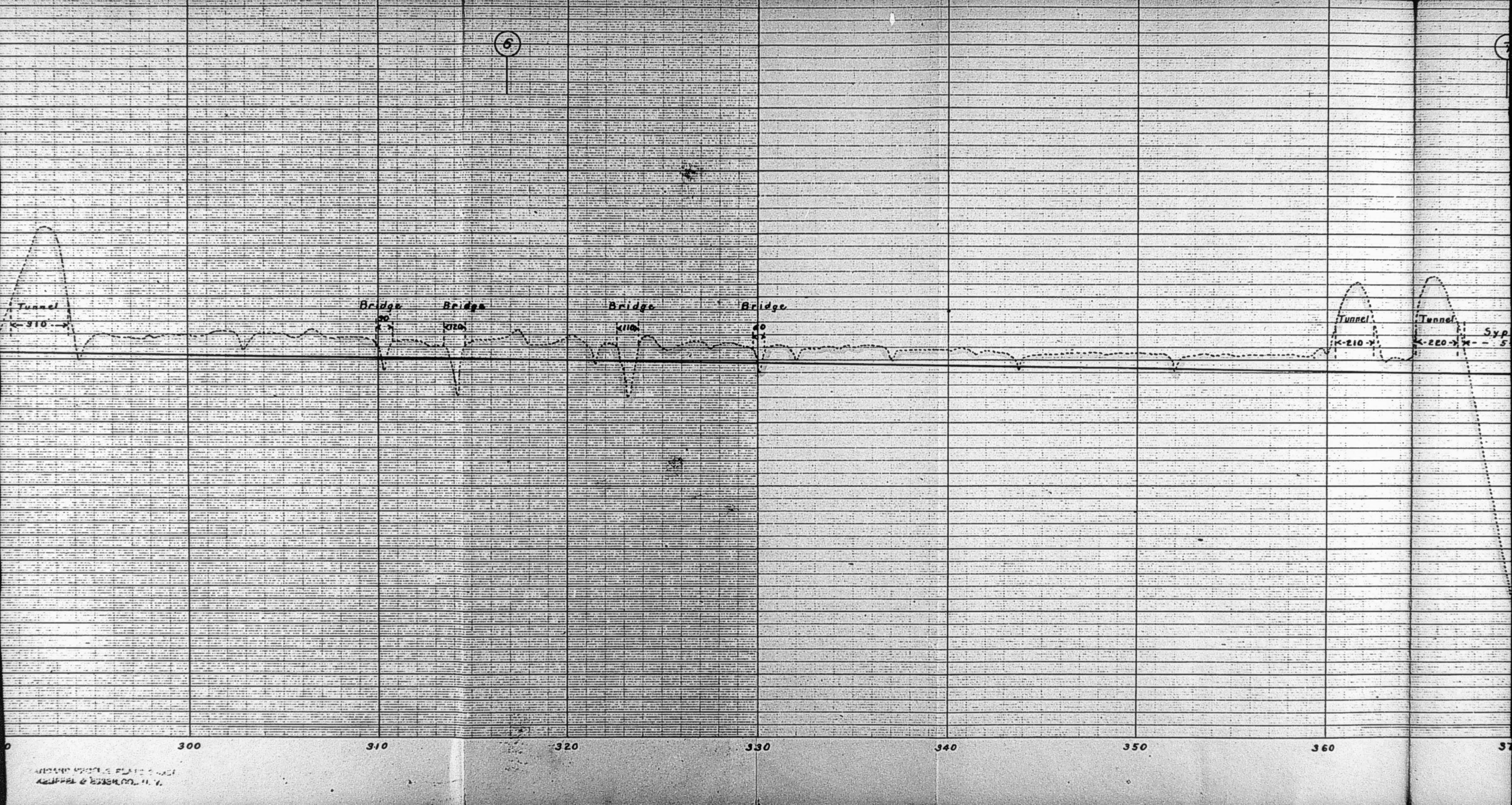
250

260

270

280

290



6

7

Tunnel
← 310 →

Bridge
30

Bridge
20

Bridge
10

Bridge
40

Tunnel
← 210 →

Tunnel
← 220 →

Syp

300

310

320

330

340

350

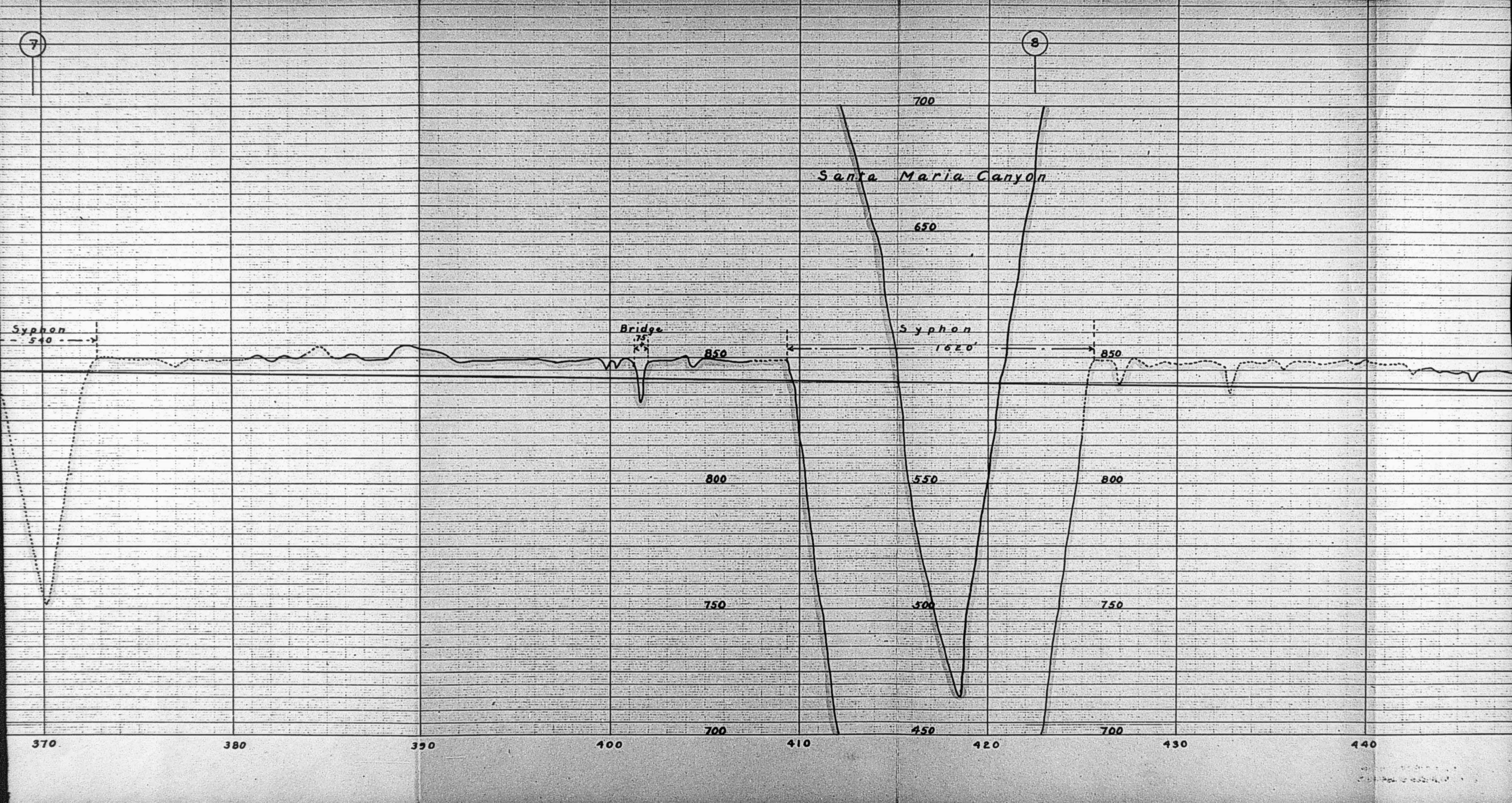
360

370

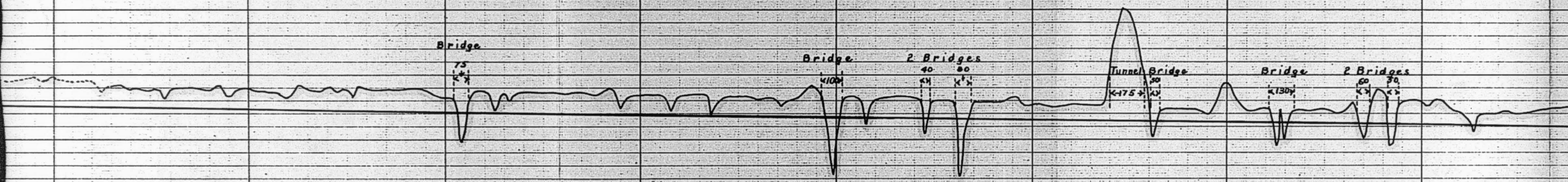
AMERICAN ENGINEERING COMPANY
NEW YORK, N. Y.

7

8



9



440 450 460 470 480 490 500 510

Handwritten notes at the bottom left corner.

Handwritten marks at the bottom right corner, including a checkmark and a symbol resembling the number 7.

10

11

edges

Tunnel

Syphon

360

1010

510

520

530

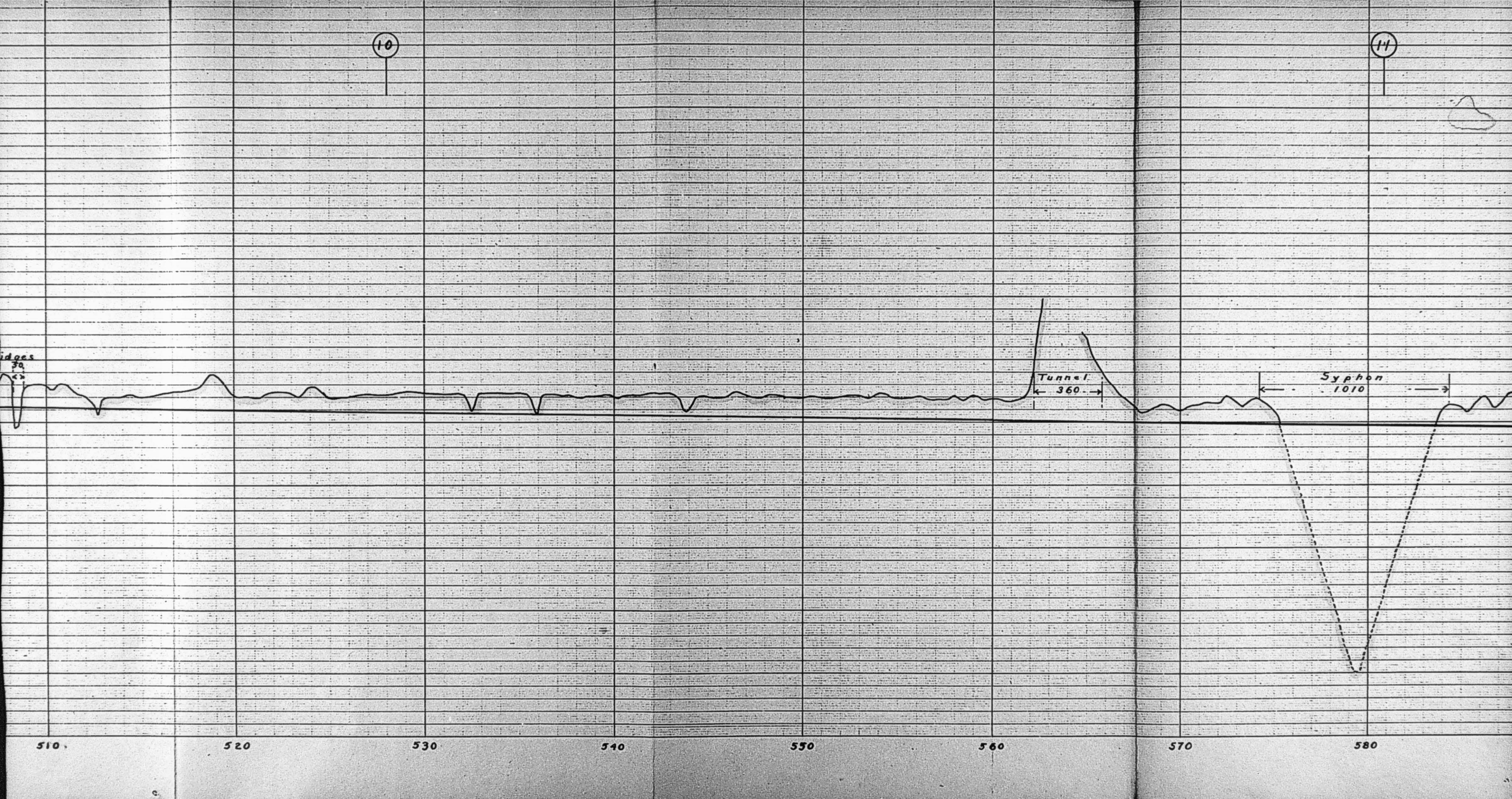
540

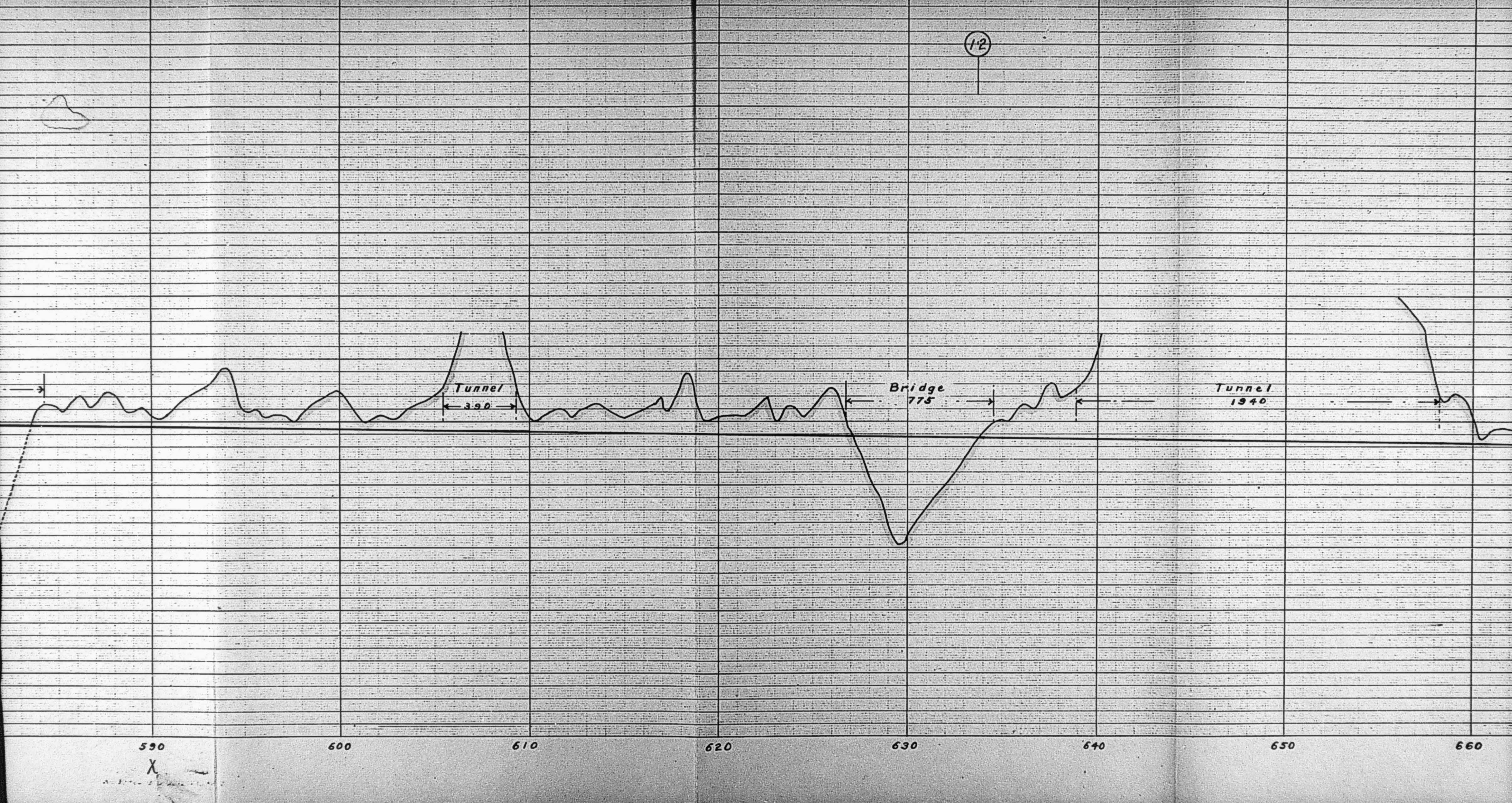
550

560

570

580





12

Tunnel

3.90

Bridge

7.75

Tunnel

19.40

590

600

610

620

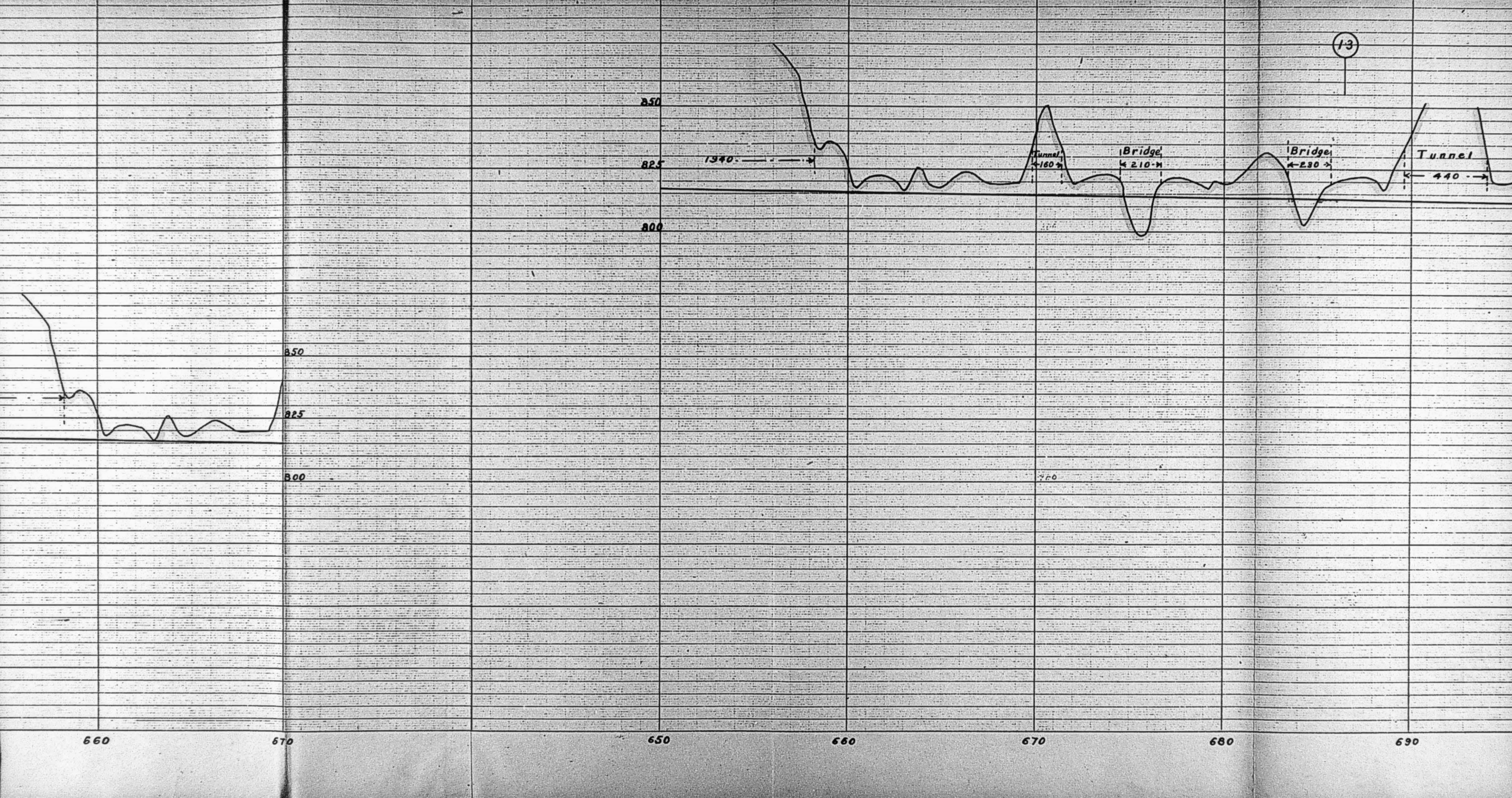
630

640

650

660

X



13

850

825

800

850

825

800

1940

Tunnel
← 160 →

Bridge
← 210 →

Bridge
← 230 →

Tunnel
← 440 →

750

660

670

650

660

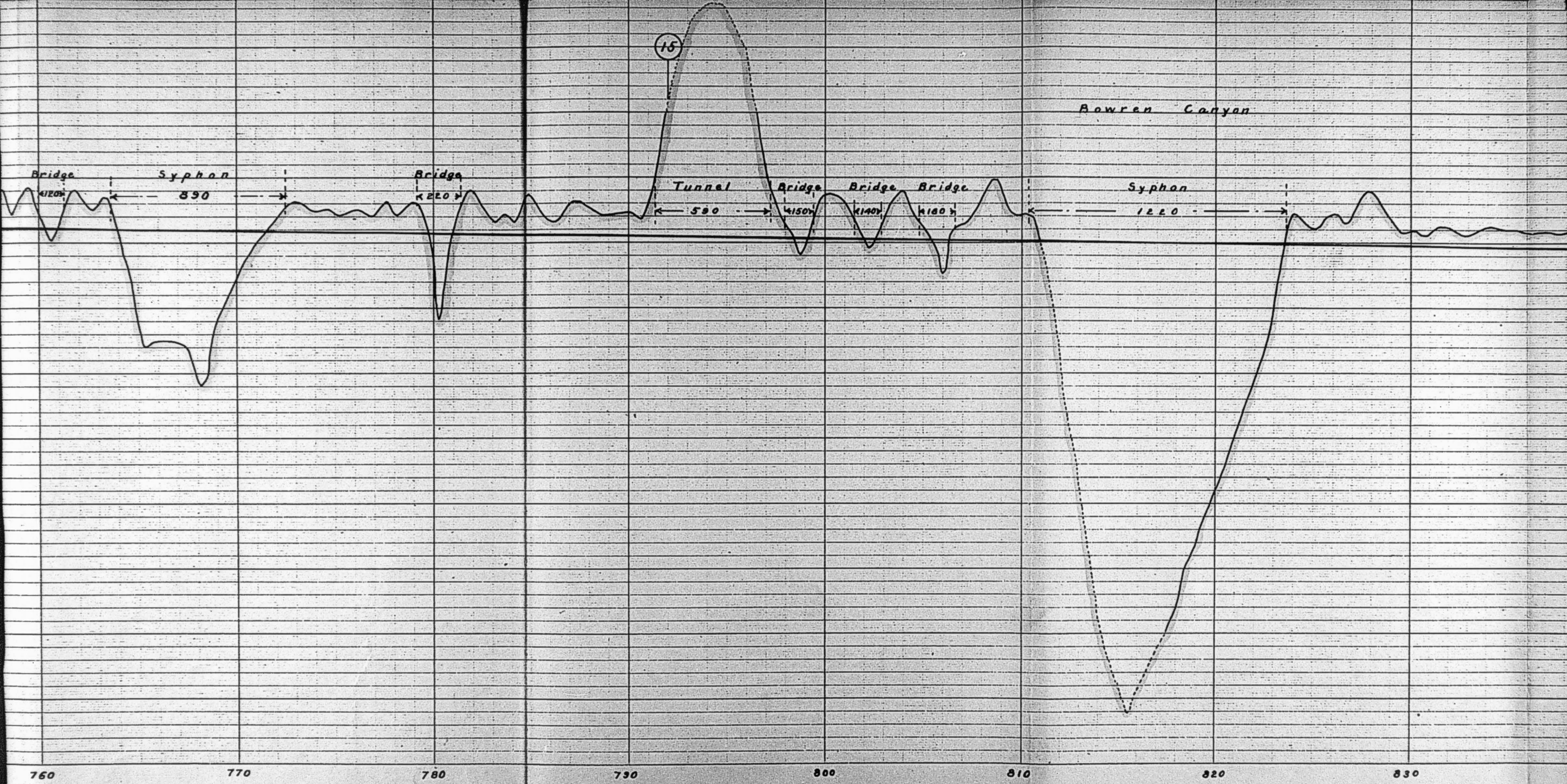
670

680

690

Carter Canyon





760 770 780 790 800 810 820 830

16

17

Bridge

← 310 →

Bridge

← 190 →

840

850

860

870

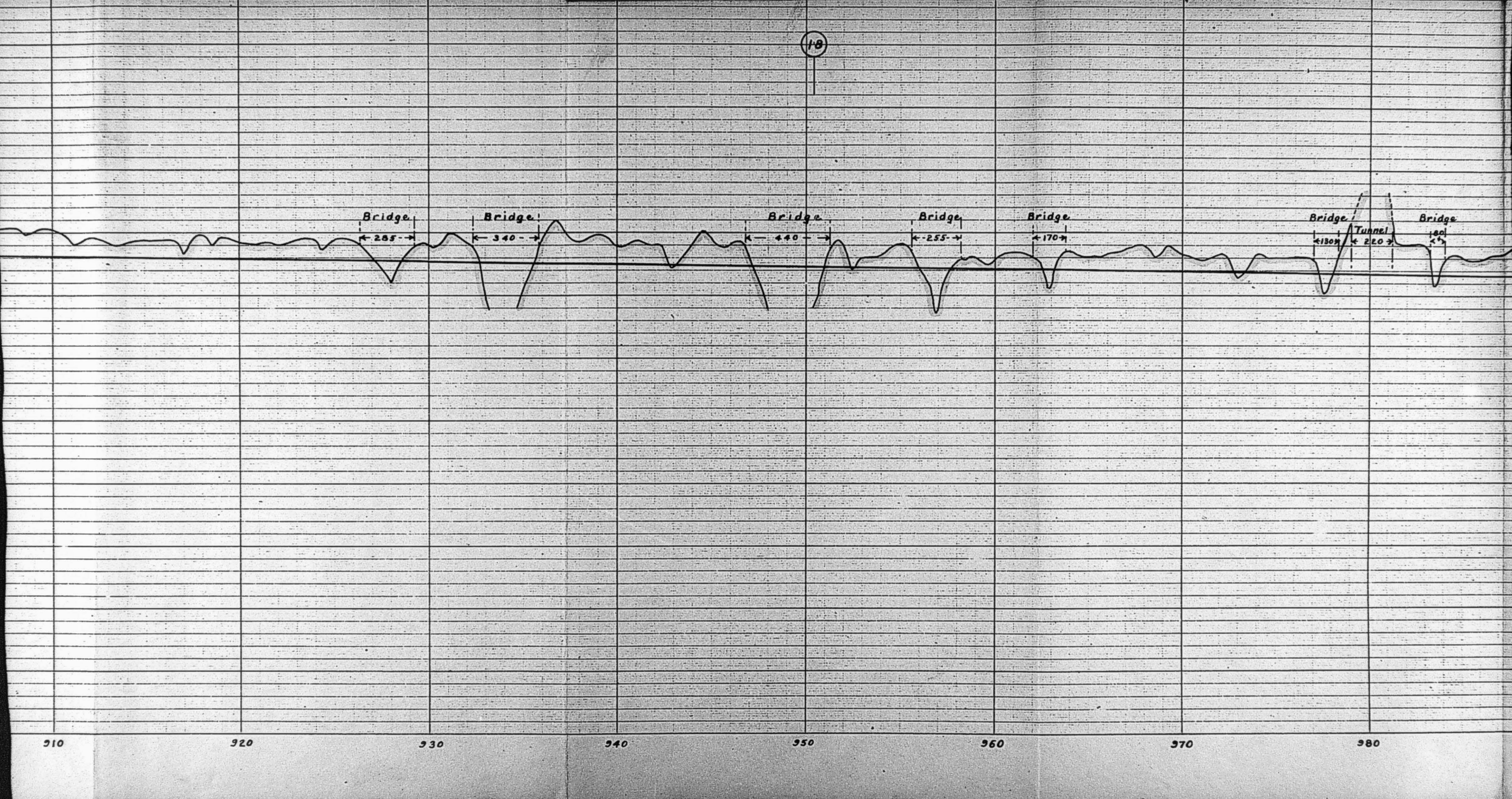
880

890

900

910

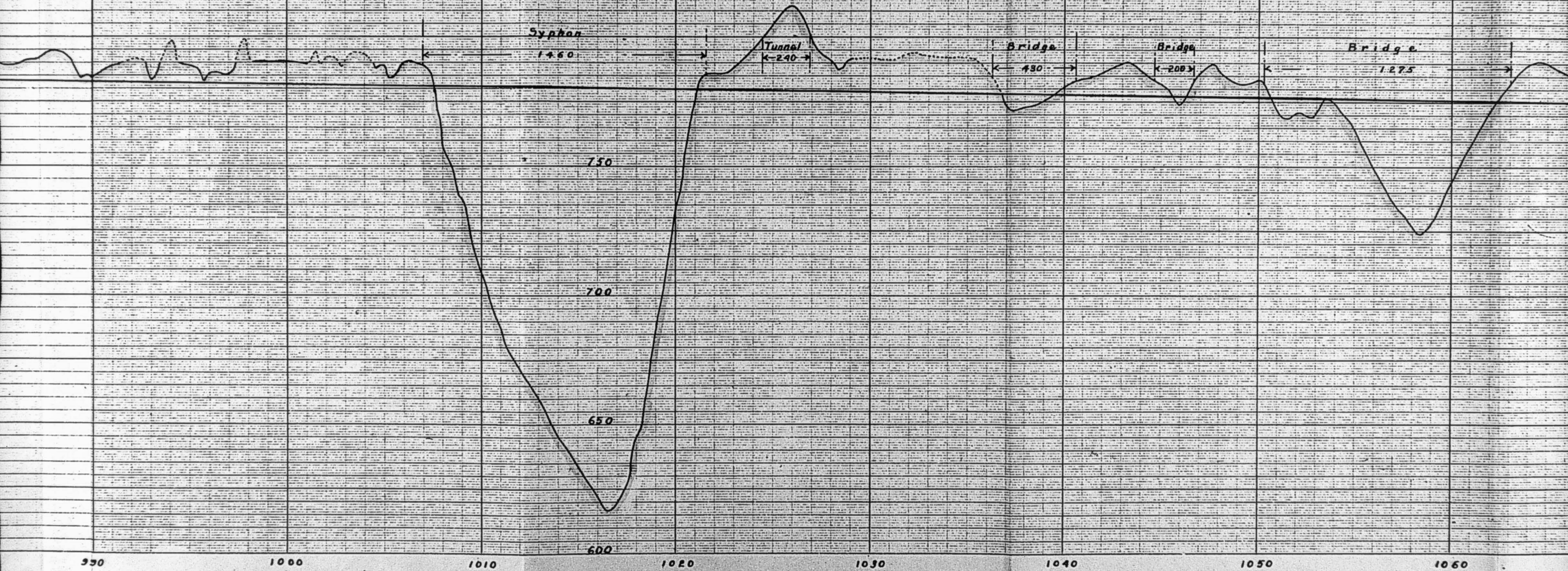




19

20

Rattlesnake Canyon

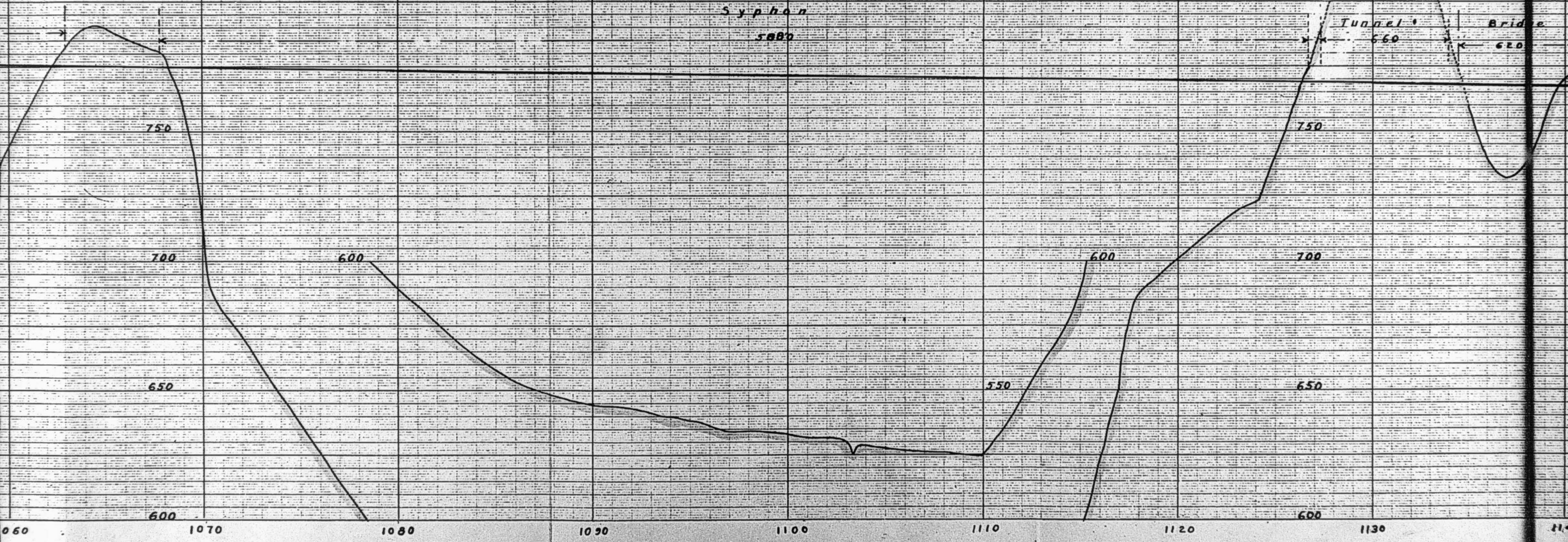


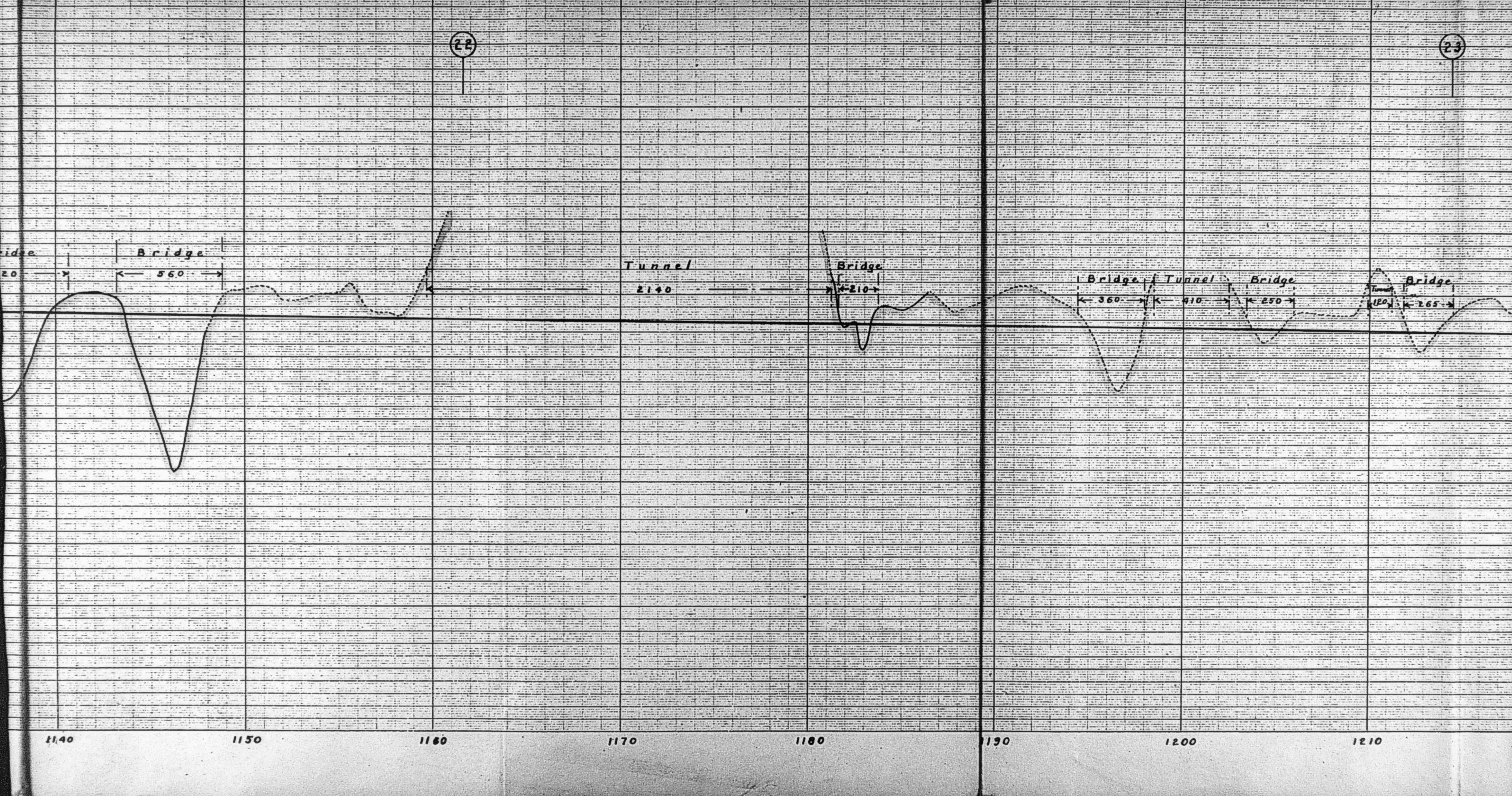
Poway Valley

Syphon
5880

Tunnel
560

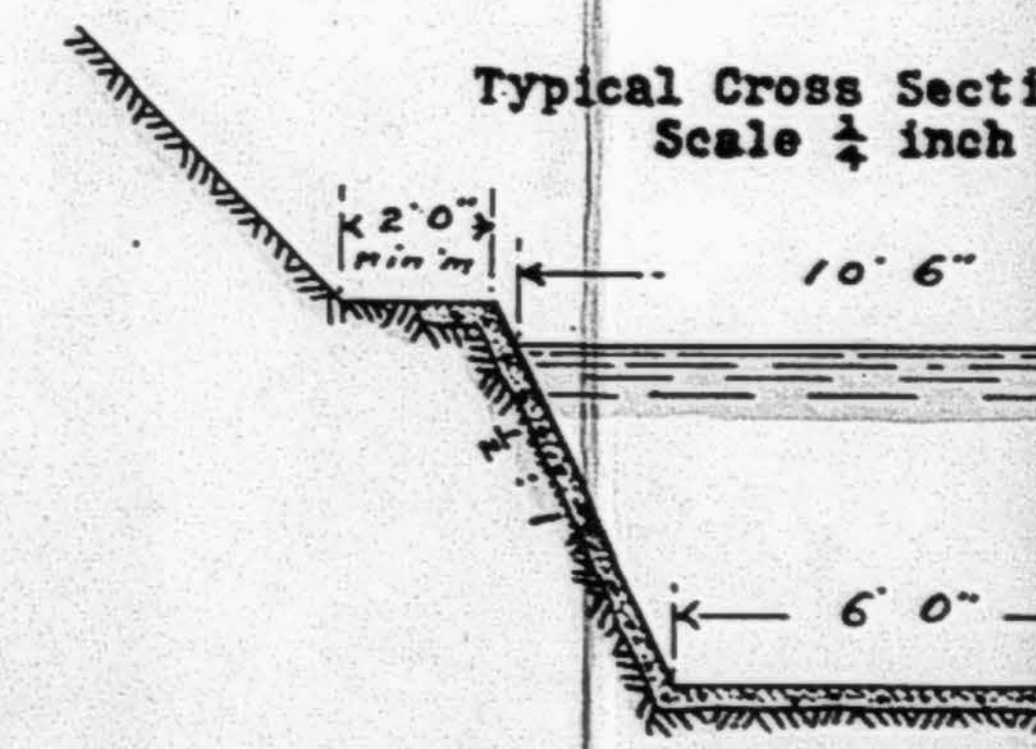
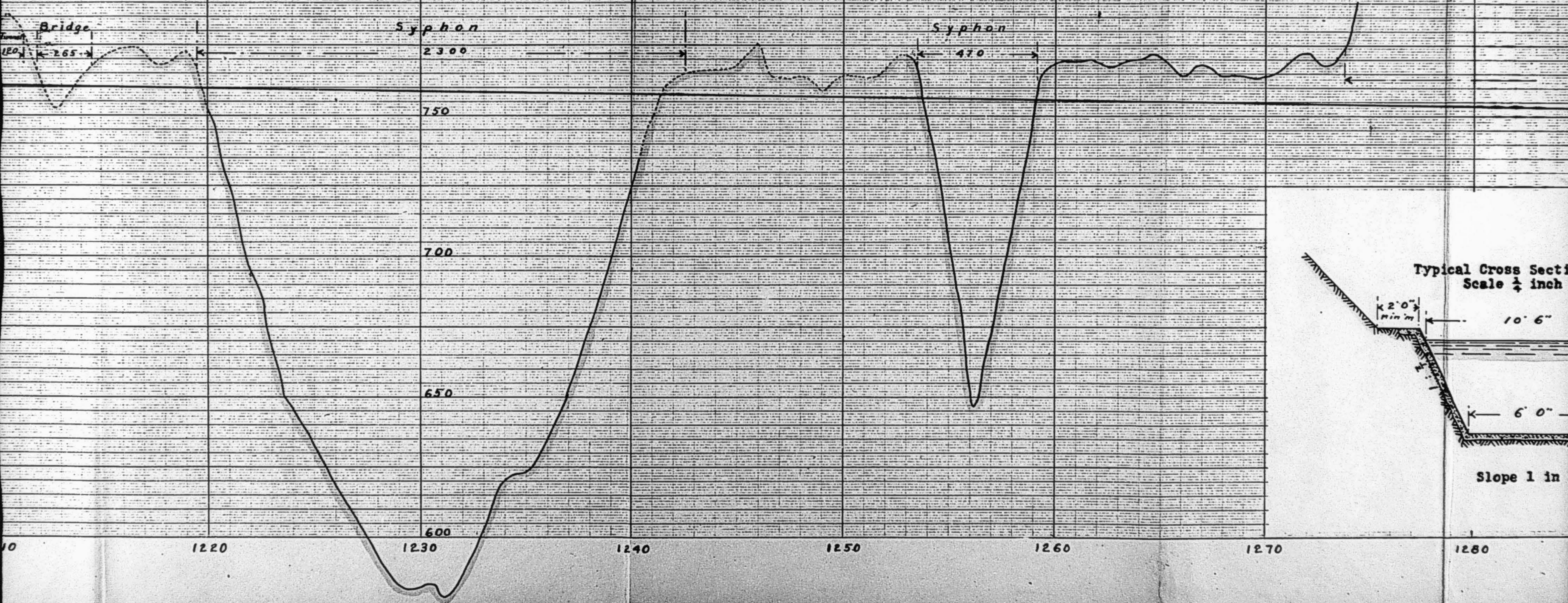
Bridge
620





23

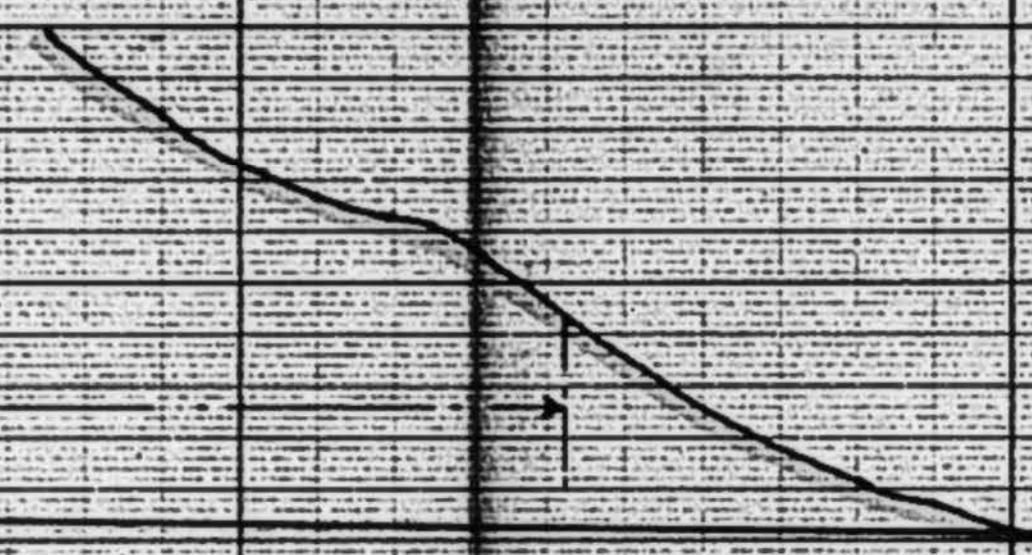
24



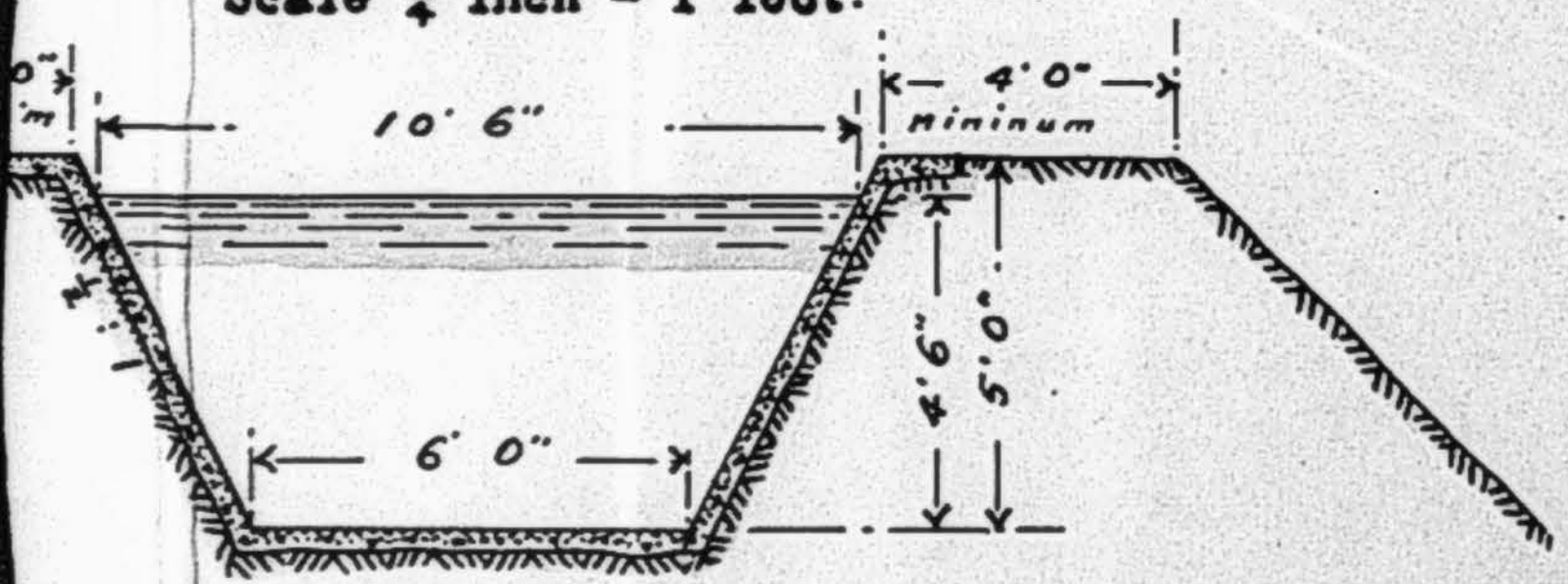
Slope 1 in 1

San Clemente Canyon

Tunnel
3040



Typical Cross Section of Conduit.
Scale $\frac{1}{4}$ inch = 1 foot.



VOLCAN LAND & WATER COMPANY.
Profile of Conduit between Pamo and San Clemente Reservoirs.
H. Hawgood, September, 1912.

1280

1290

1300

1310

Warner Reservoir

Outline

2700

2650

2600

Tunnel

Bridge

Bridge

2 Bridges

Tunnel

1

640

290

190

120

160

150

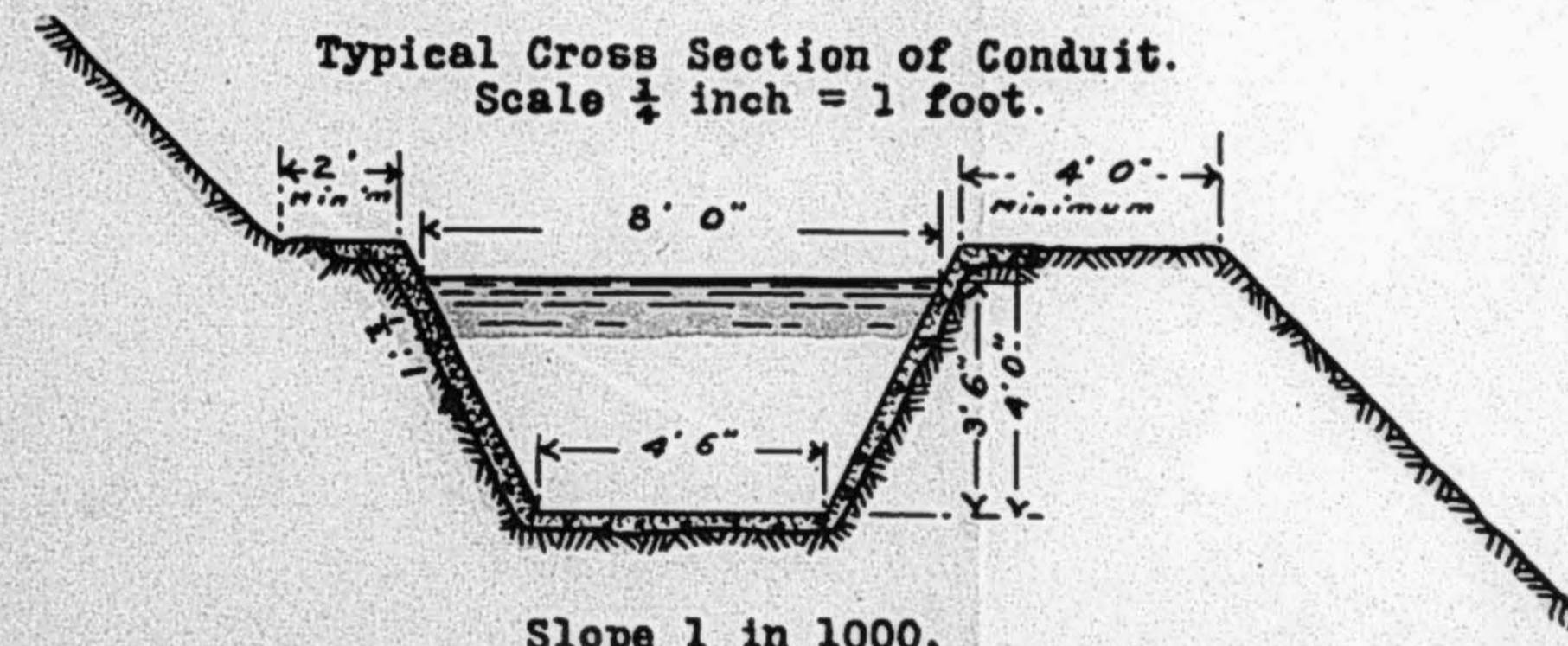
VOLCAN LAND & WATER COMPANY.

Profile of Conduit from Warner Reservoir to Pine Mountain Forebay.

H. Hawgood, September, 1912.

Typical Cross Section of Conduit.

Scale $\frac{1}{4}$ inch = 1 foot.



Slope 1 in 1000.

0

10

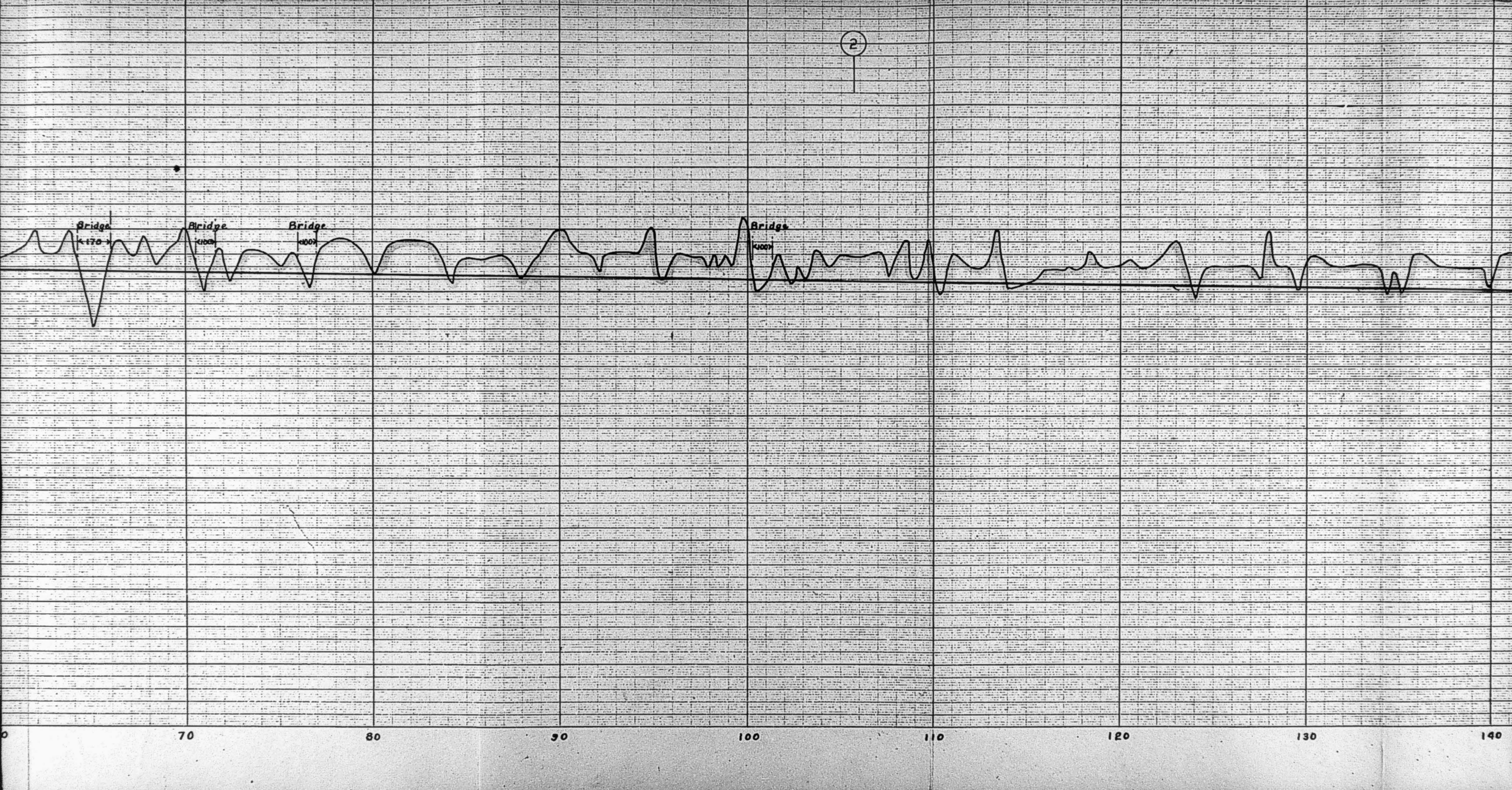
20

30

40

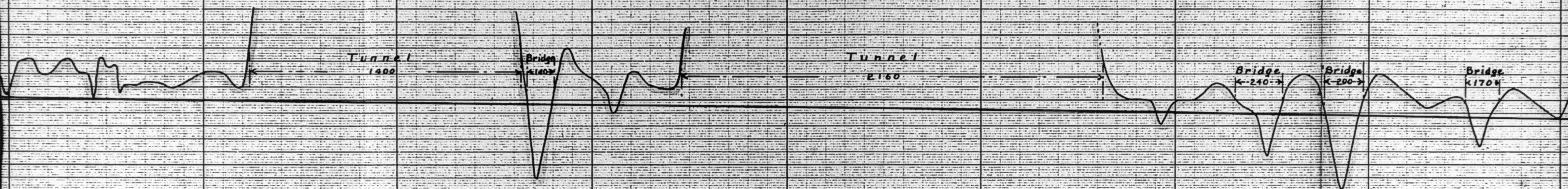
50

60



3

4



Tunnel
1400

Bridge
1400

Tunnel
2150

Bridge
K-240

Bridge
K-200

Bridge
K1704

140

150

160

170

180

190

200

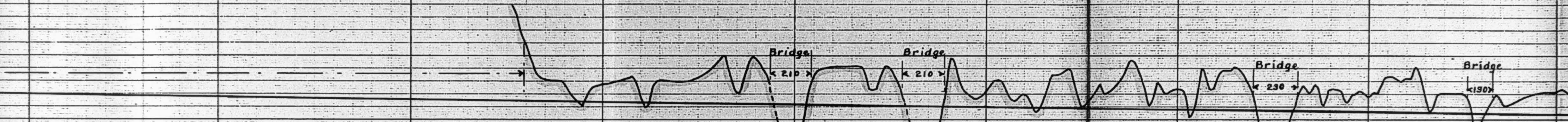
210

220



6

7



300

310

320

330

340

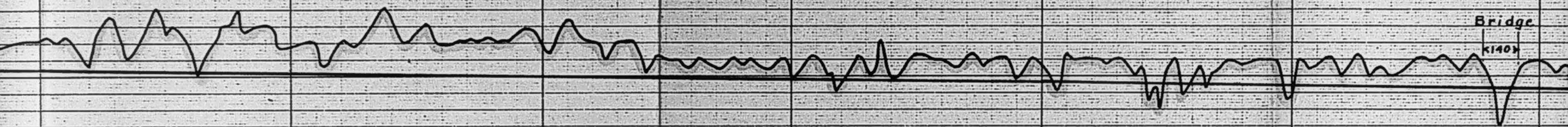
350

360

370

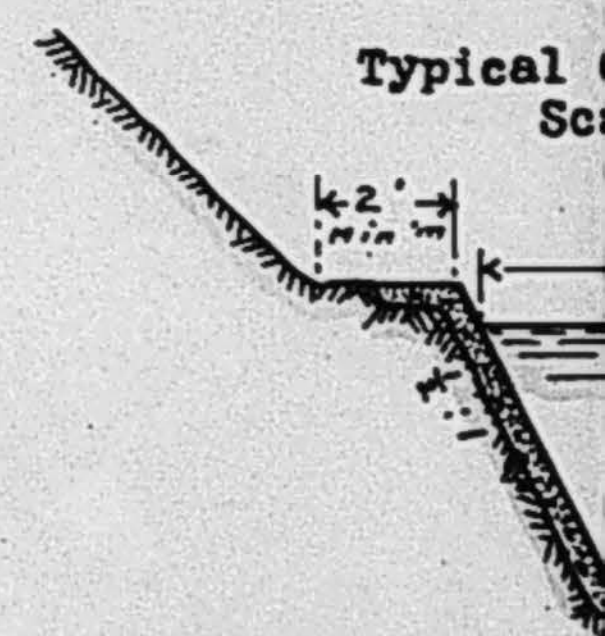
380

Ⓟ



Bridge

K140



Typical Section

2

380

390

400

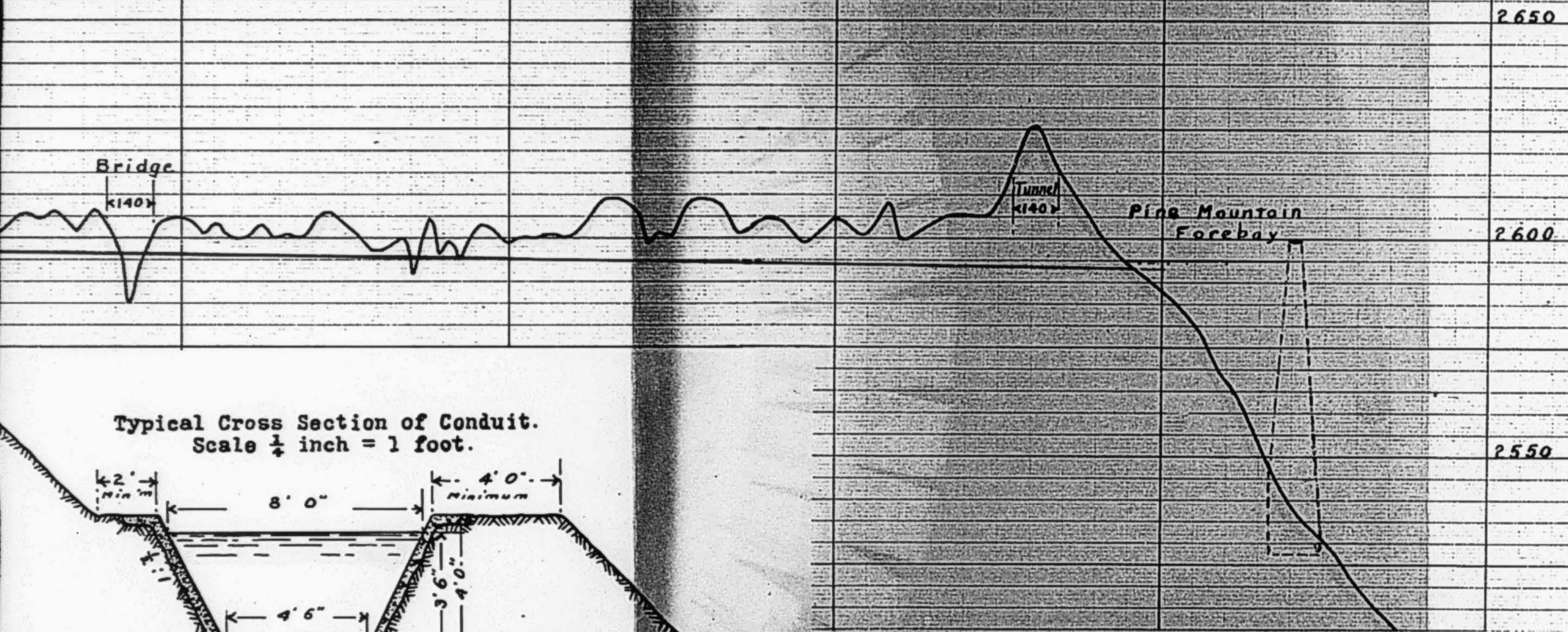
410

420

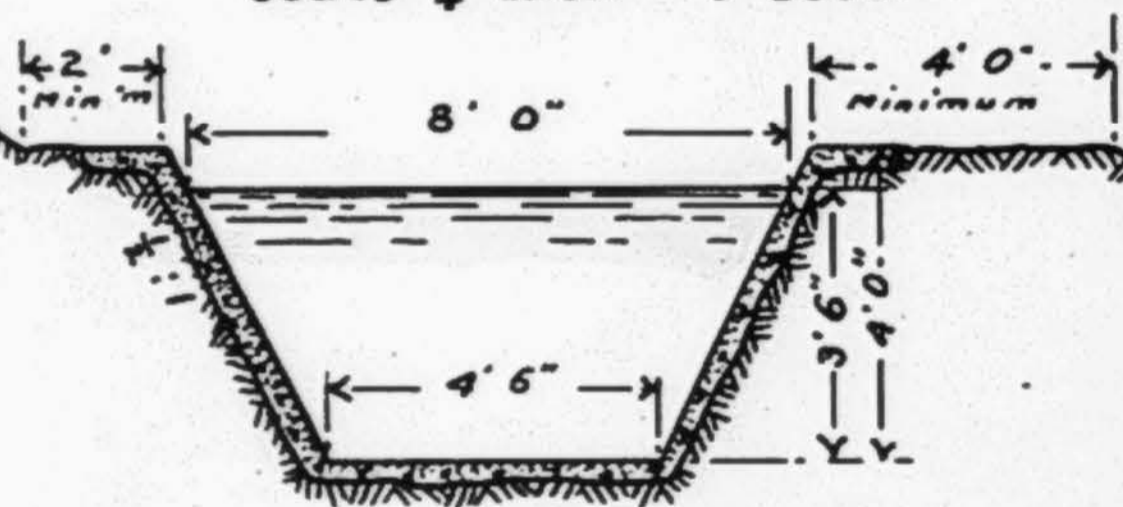
430

440

9



Typical Cross Section of Conduit.
Scale $\frac{1}{4}$ inch = 1 foot.



Slope 1 in 1000.

VOLCAN LAND & WATER COMPANY.
Profile of Conduit from Warner Reservoir to Pine Mountain Forebay.
H. Hawgood, September, 1912.

440

450

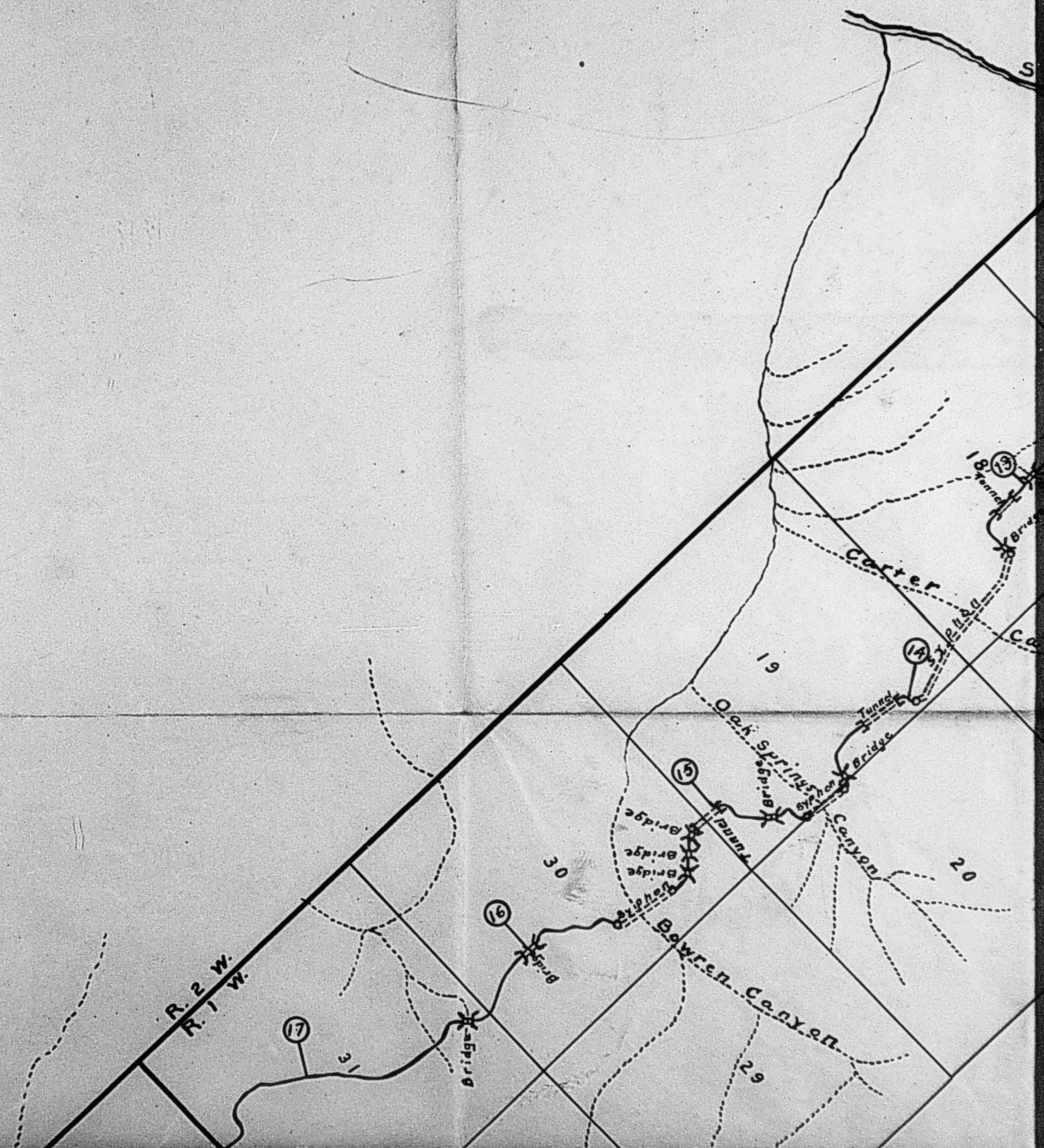
460

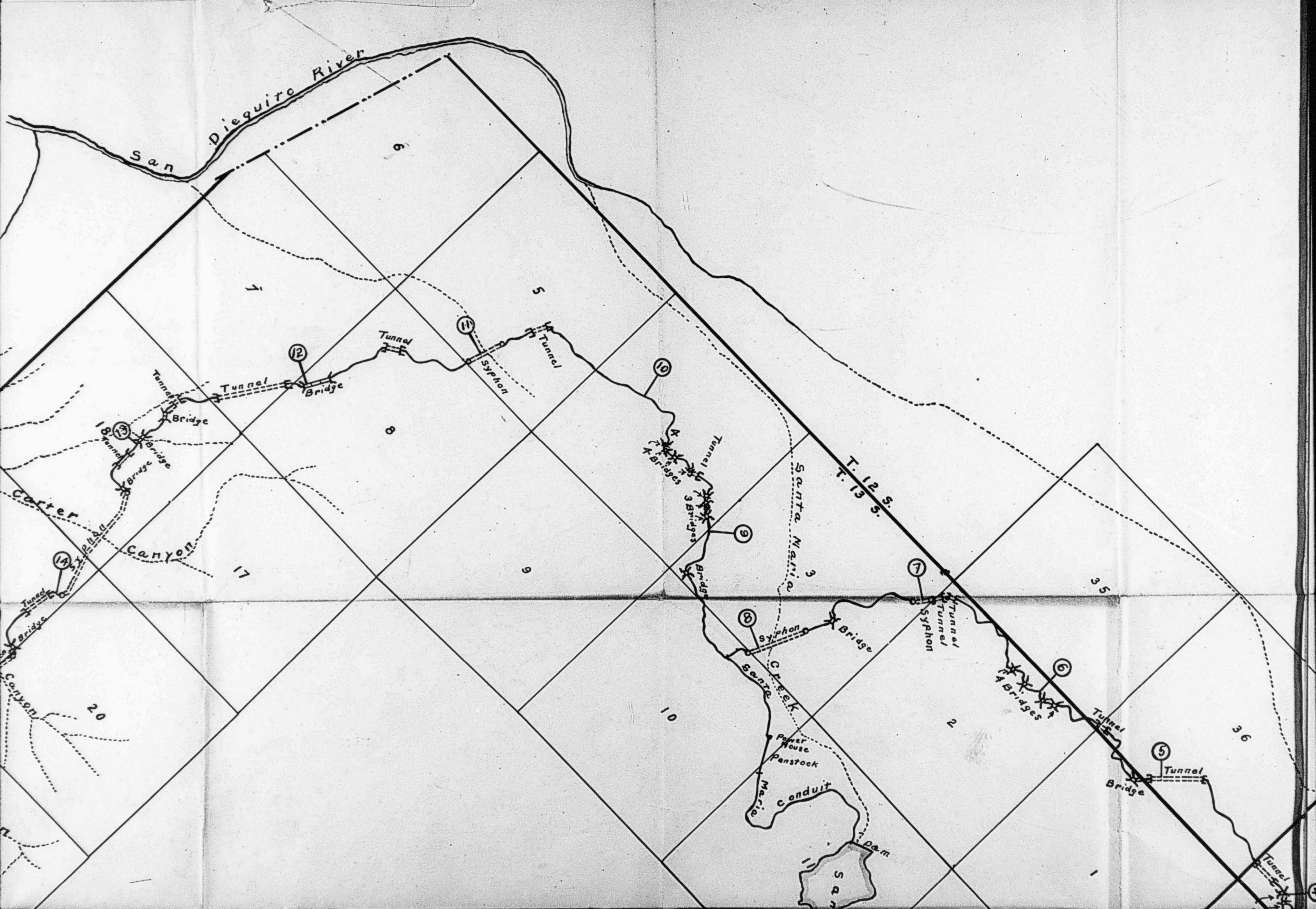
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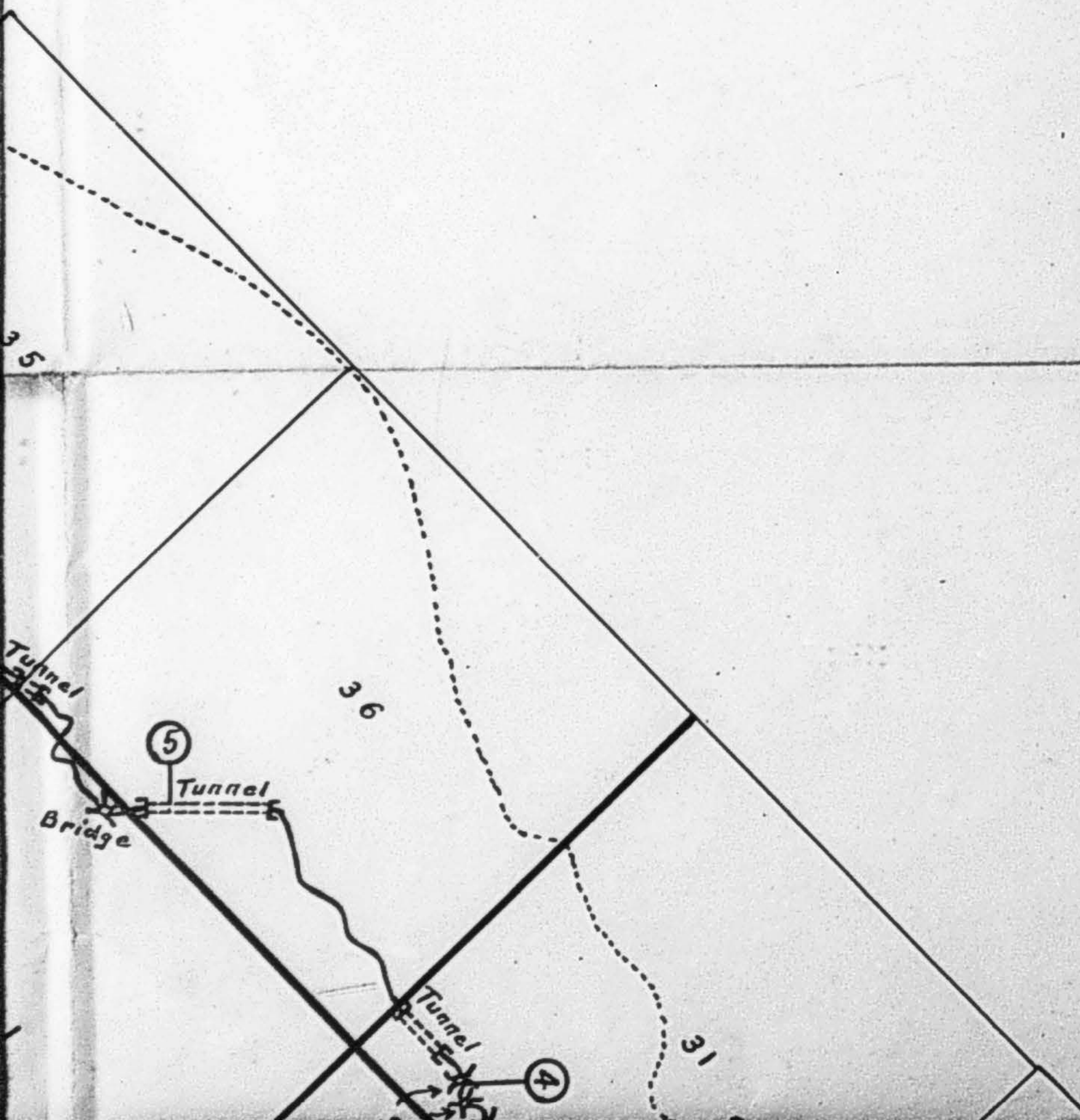
Map showing Project
of the
VOLCAN LAND & WATER COMPANY.
From Warner Reservoir to San Clemente Reservoir.

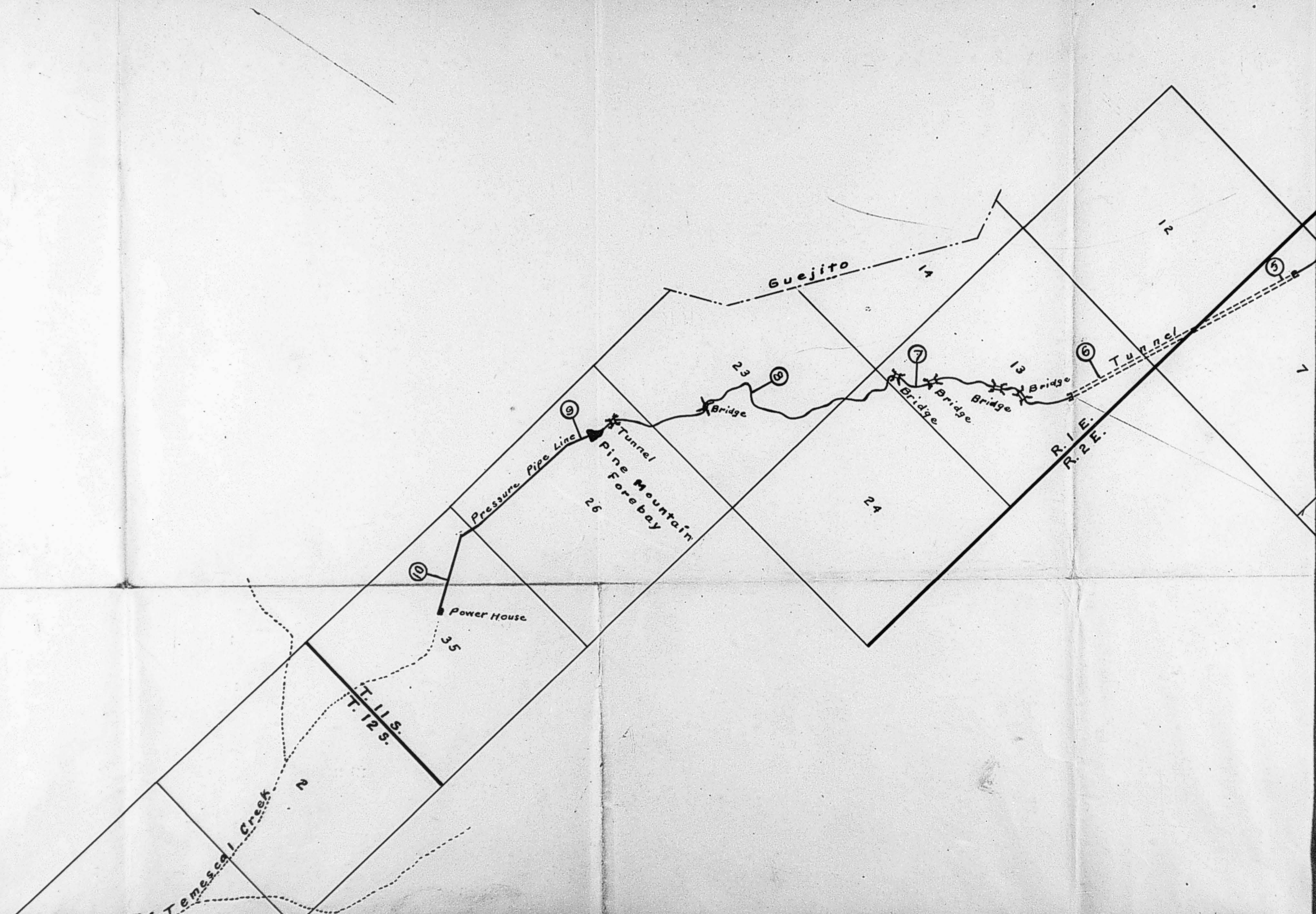
Scale 1 inch = 2,000 feet.

H. Hawgood, September, 1912.









Guejito

14

12

5

Tunnel

23

8

Bridge

7

Bridge

Bridge

13

Bridge

6

R. I. E.
R. P. E.

Pressure Pipe Line

9

Tunnel
Pine Mountain
Pine Forebay

26

10

Power House

5

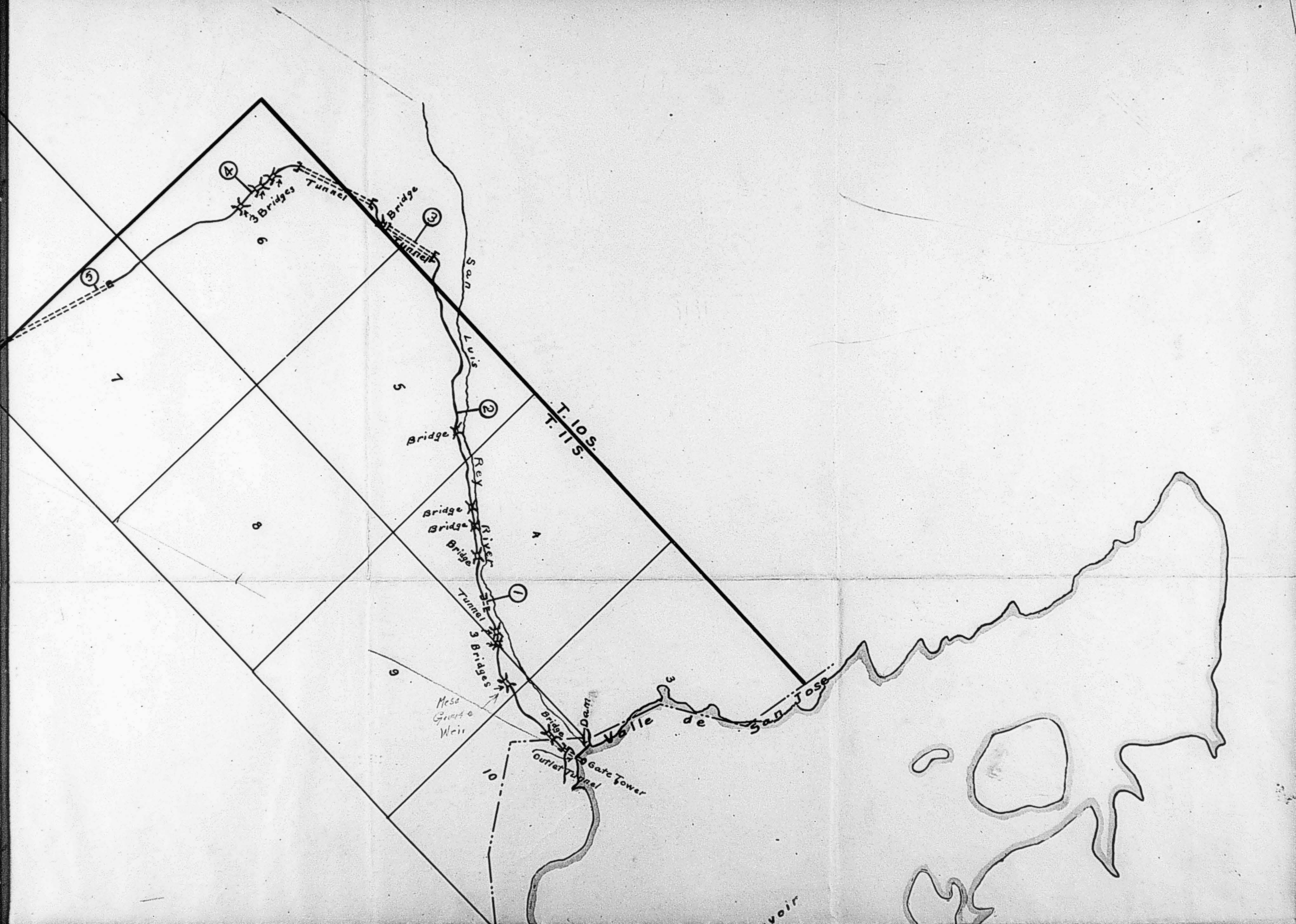
T. 11 S.
T. 12 S.

Temescal Creek

N

24

7



④

3 Bridges
Tunnel

③

Bridge

San Luis River

②

Bridge

T. 10 S.
T. 11 S.

Bridge

Rex River

Bridge

Bridge

Bridge

①

Tunnel

3 Bridges

Mesa Grande Weir

⑤

Bridge

Dam

Gate Tower

Outlet Tunnel

Valle de San Jose

San Jose

voir

7

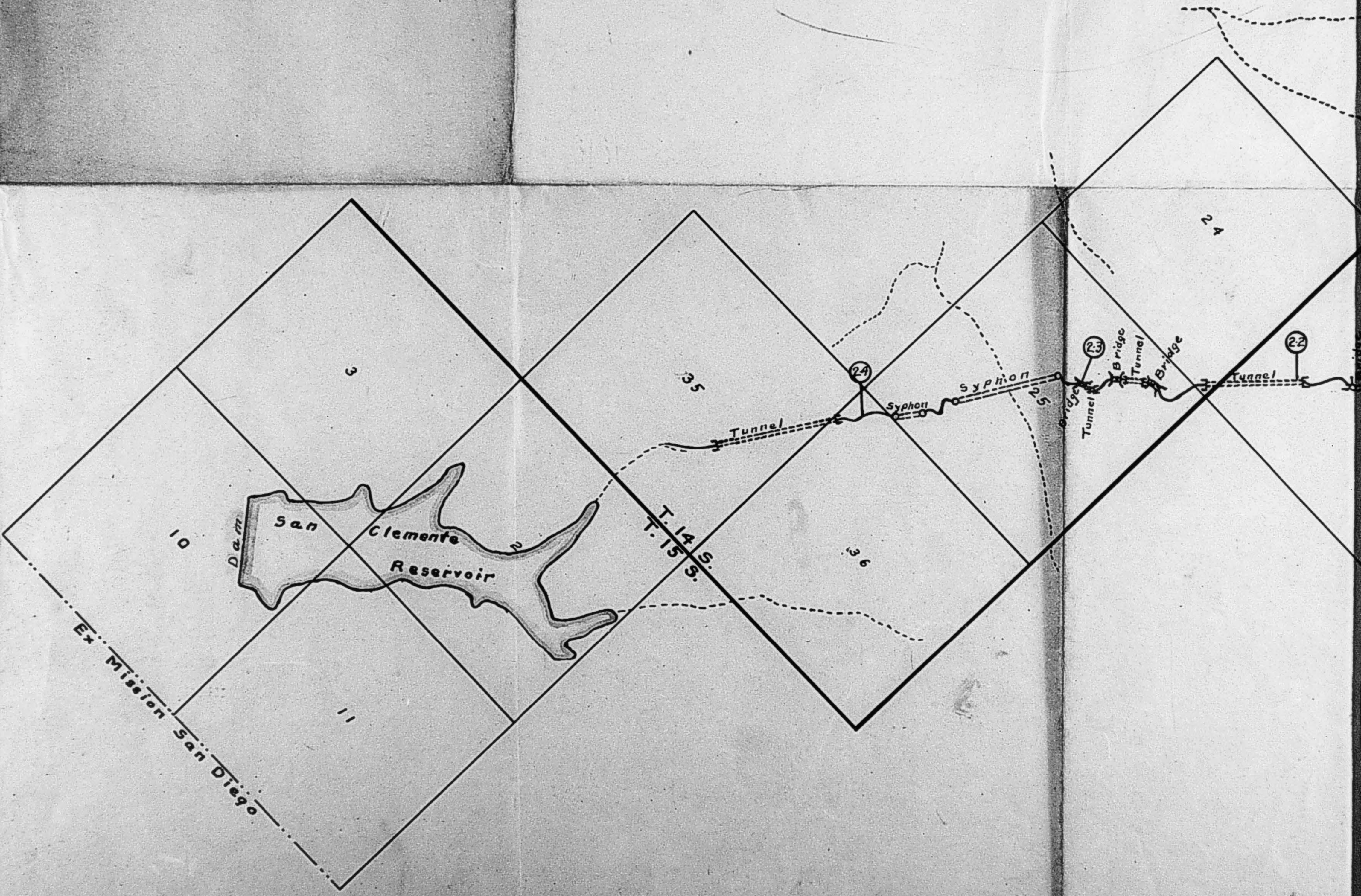
8

4

5

9

10



San Clemente Reservoir

Dam

Tunnel

Syphon

Syphon

Tunnel

Bridge

Tunnel

Bridge

Tunnel

Ex Mission San Diego

10

35

35

36

24

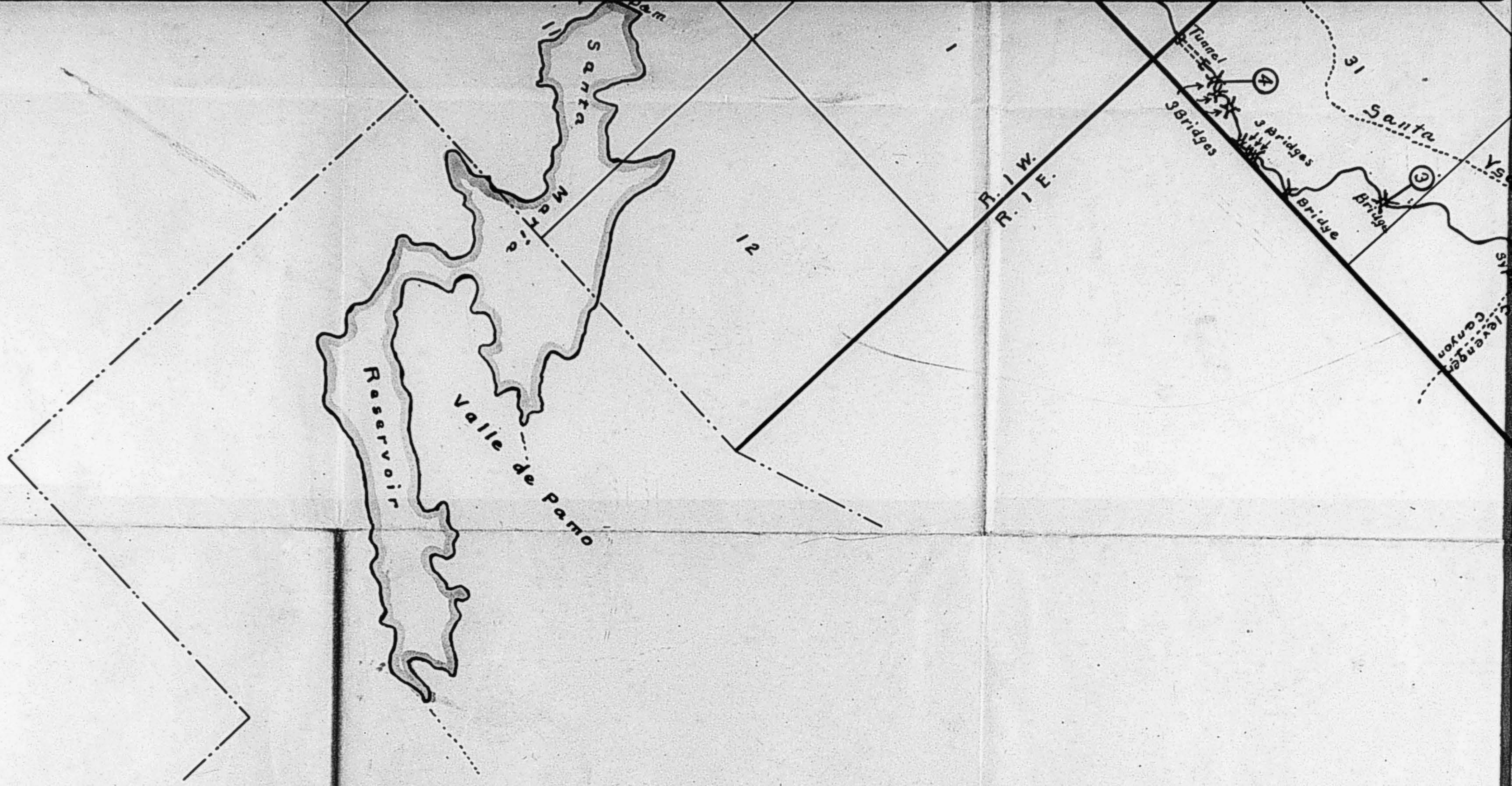
22

23

T. 14 S.
T. 15 S.



Pamo-Linda Vista Project.



ect.

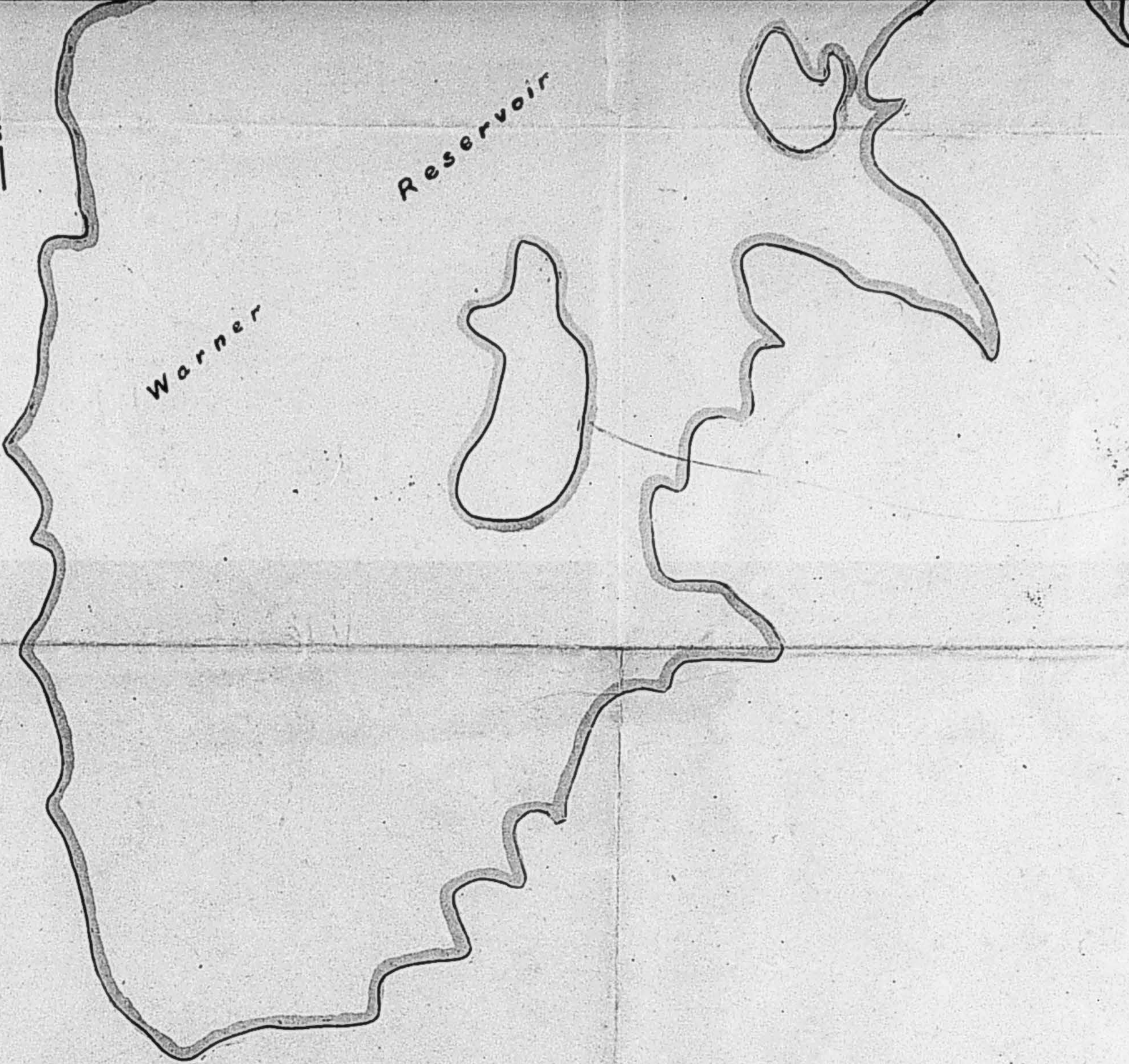
Tempe

Warner-Pamona Project

To Sutherland Reservoir
Site Approx. 4 Miles →

C

Map showing Project
of the
VOLCAN LAND & WATER CO
From Warner Reservoir to San Clemente
Scale 1 inch = 2,000 feet.
H. Hawgood, September, 1912.



Map showing Project
of the
CANAL & WATER COMPANY
from Warner Reservoir to San Clemente Reservoir.
Scale 1 inch = 2,000 feet.
H. Hawgood, September, 1912.

Ed Fletcher Papers

1870-1955

MSS.81

Box: 38 Folder: 1

Business Records - Reports - Hawgood, H - "Engineer's Report on the Projects of the Volcan Land and Water Co."



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