

Live Oak

SURFACE

10 ft. - Platform of logs

Marks of gravel, charcoal,
etc. every 10 ft.

52'-0"

TIDE LEVEL

Platform of logs on
which level 10'-0"

PLAN SHOWING A PART OF THE WORK
DONE IN OAK ISLAND, N.S. PREVIOUS
TO THE YEAR 1795 A.D.

CONSTRUCTED FROM DATA OBTAINED
IN SEVERAL ATTEMPTS TO RECOVER
TREASURE THEREFROM

PRIOR TO JULY 1, 1950

Formation is
hard, blue
clay, from
the surface
to 110 ft.
below which
is very hard
brown marl.

90'-0" Flat stone with characters cut in it.

OAK BOXES AND CHARRELS - TWO
BOXES WERE BURIED THROUGH
EACH 22" DEEP HOLE, AND FULL
OF "METAL IN PIECES"

98'-0"

104'-0"

111'-0"

TUNNEL TO EAST LAIN SHORE
FILLED WITH BEACH STONES

Money pit
is filled
with puddled
blue clay
from:
130 to 151ft.
and from
160 to 171 ft.

WOOD PLATFORM AND
STRONG BEAMS

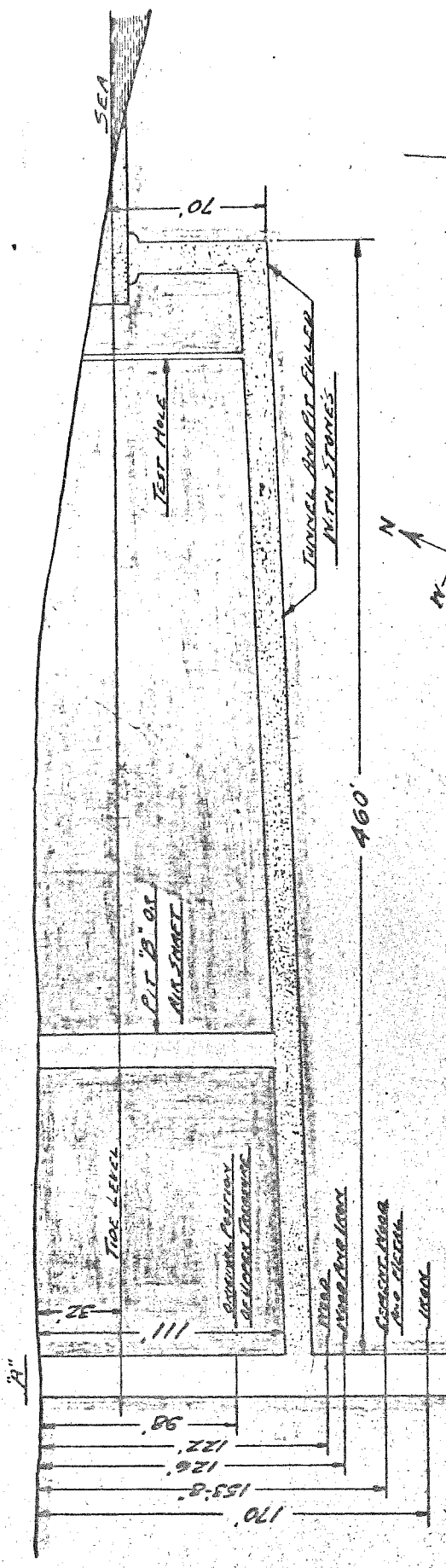
THIS SPACE NOT FILLED

159'-0"

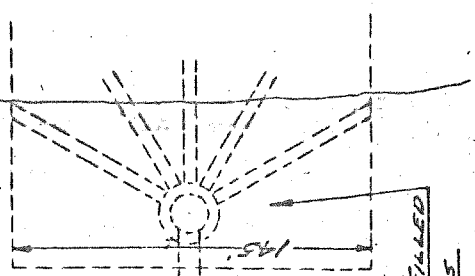
OAK BOX ENCLOSED IN CEMENT, WITH
DEPTH 4'-6" - BOX FULL OF "METAL
IN PIECES" - PIECE OF PARCHMENT
RECOVERED FROM THIS BOX.

170'-0"

IRON - NOT DRILLED THROUGH



ELEVATION



CUT OUT AND FILLED WITH STONES

PLAN

PLAN SHOWING TEST HOLES NEAR SHORE AND ORIGINAL WORK AT CAY ISLAND, N.S.

OAK ISLAND - NOVA SCOTIA EXPLORATION

1896 surface has
subsided an estimated
8 feet.

Log of Hole
drilled in 1896

Below 1896
Surface
Below 1931-57
Surface

Drillset on
Platform
in 1896 Shaft

98' 90'

128' 120'

Iron, stopped
casing but
drill could
pass.
This iron
was found to be
an Anchor
Fluke.

153' 145'

Parchment
found in
cuttings
and top of
box of loose
metal

171' 163'

Iron Plate

Total
Depth

J.W. Lewis
May 1, 1957

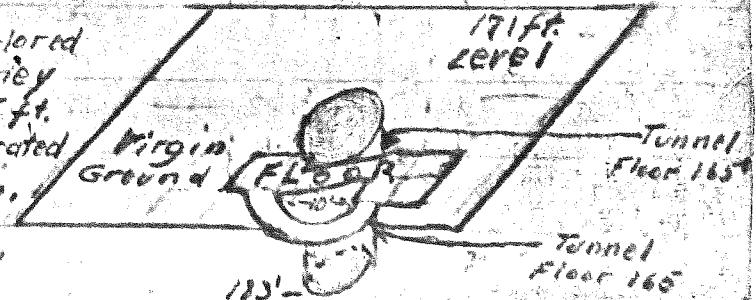
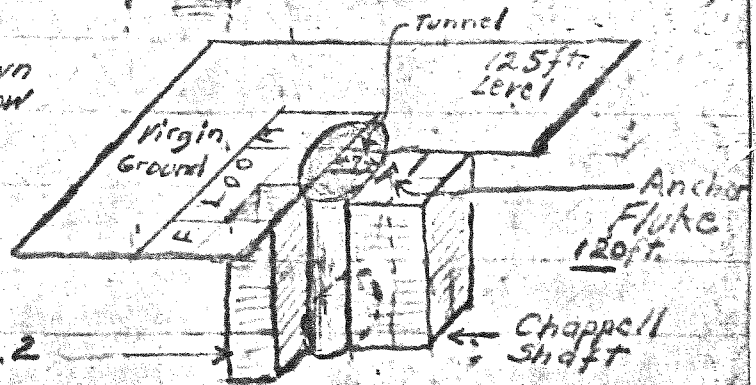
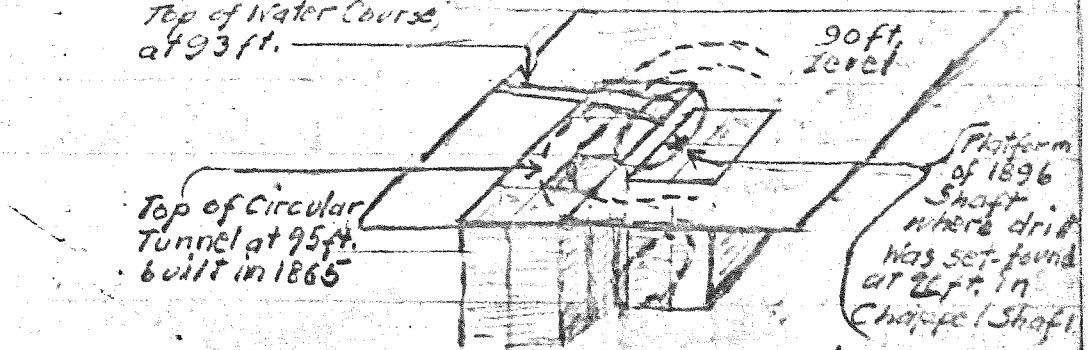
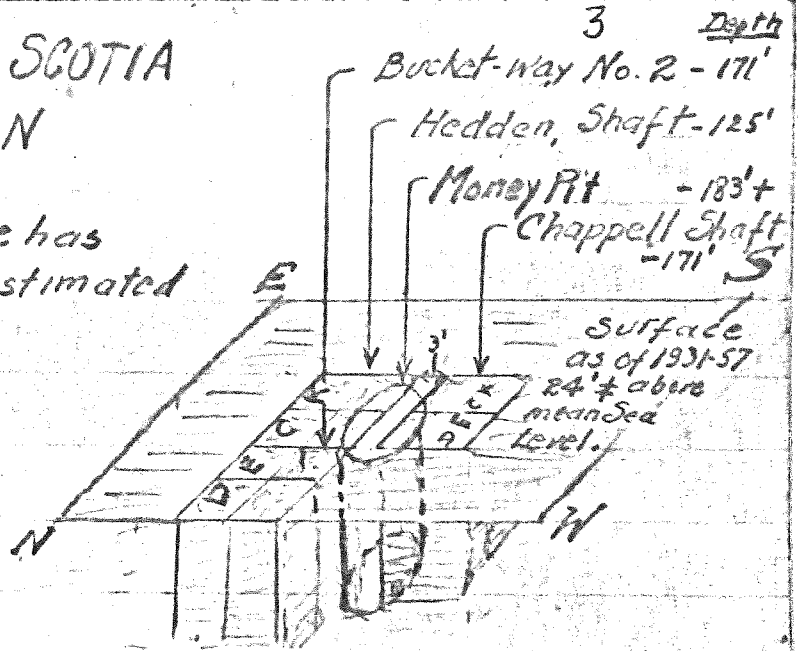
Top of Water Course,
at 93 ft.

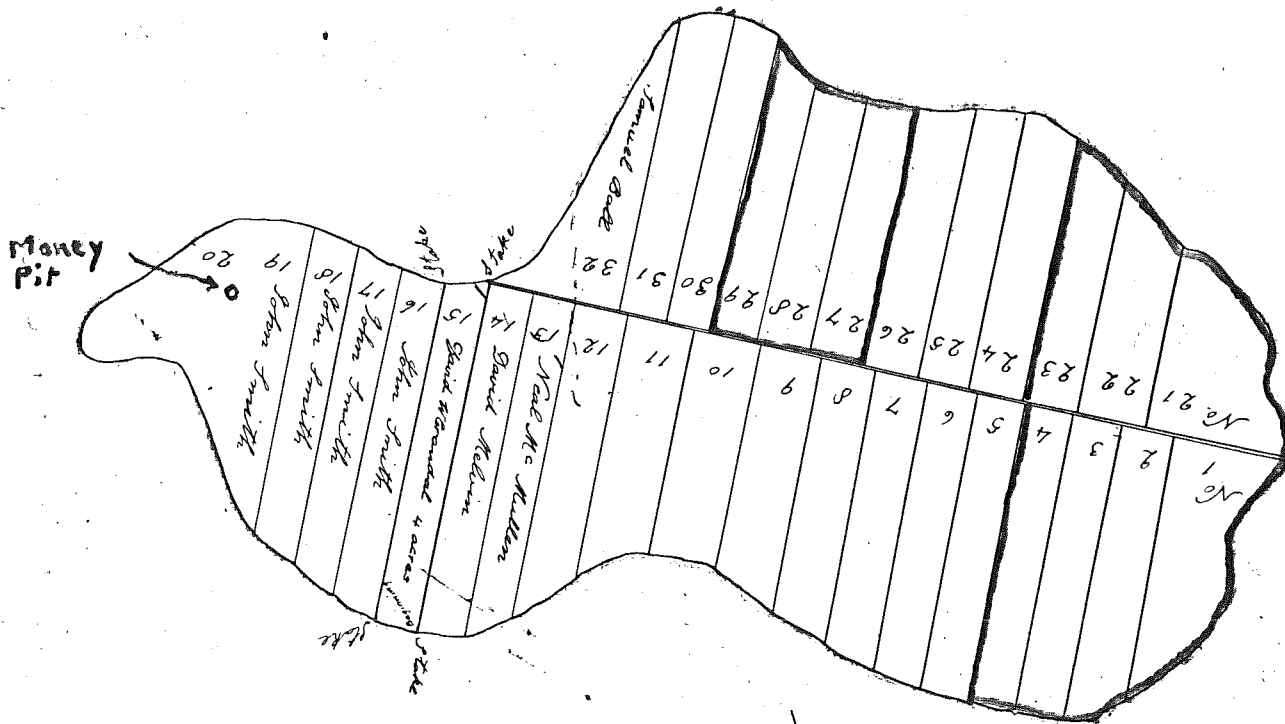
Top of Circular
Tunnel at 95 ft.
built in 1865

No other known
workings below
this level.

Bucket way No. 2

Position of unexplored
portion of Money
Pit below the 125 ft.
level was indicated
by core drilling,
which found
loose material
and wood





A correct Plan taken from the original of oak
 Island or Island No. 28 taken by David W. Brandal
 Lot Number 15 Beginning at a Stake at the East corner
 of Lot No 14 Located to David Melvin thence South 28
 Degrees west to a Stake at the East corner of Lot No. 32 - 73 Rods
 Located to Samuel Ball thence Easterly on or by the Sea Shore
 ten Rods or to a stake at the west corner of Lot No 16
 Located to John Smith, thence N 28 East 71 Rods or to
 the Shore to a Stake thence westerly by said Shore to
 the Place of Beginning containing four acres.
 according to the original Survey - Surveyed for
 David W. Brandal By me
 (signed) David W. Brandal
 Surveyor

This Island formally surveyed by
 the late William Nelson by Surveyor

Plotted to a Scale of
 twenty Rods to one Inch.

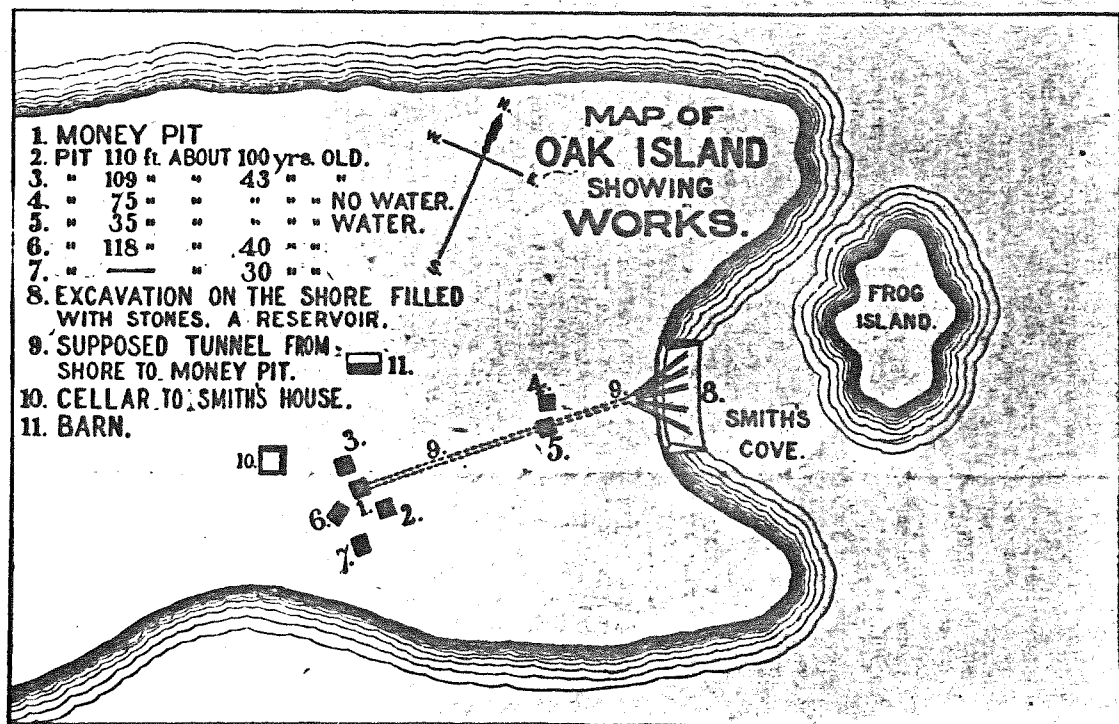
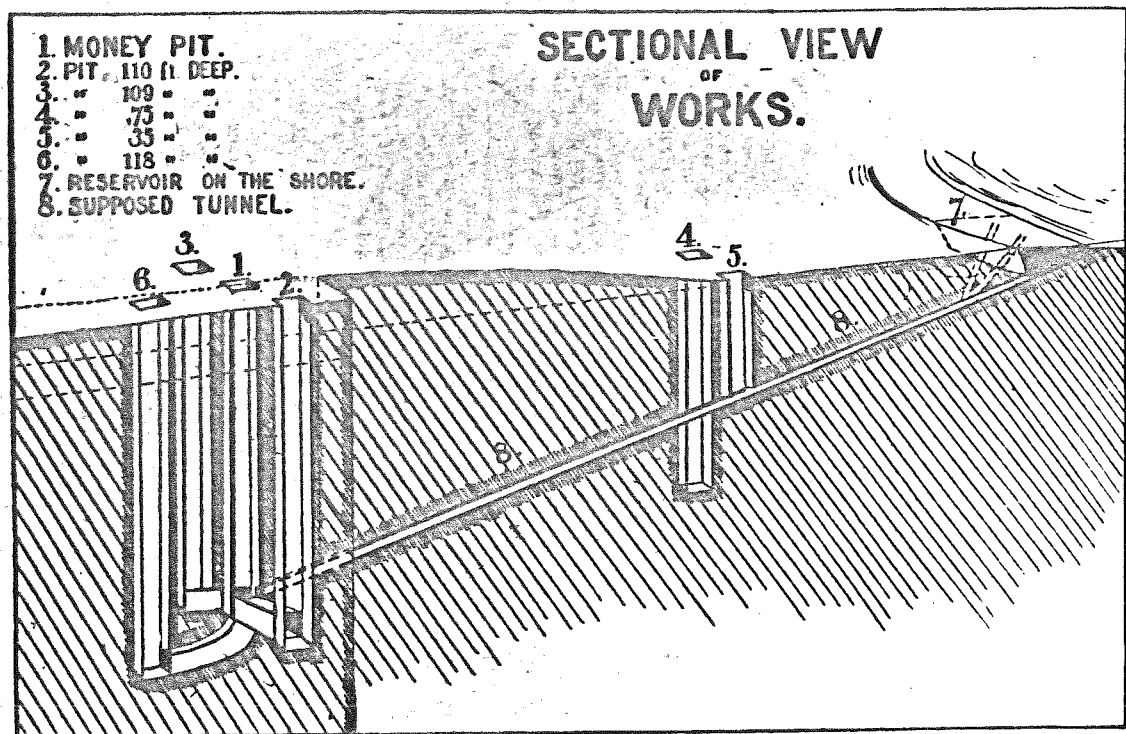
I certify the above to be a true copy of Plan No. 1046 on file in the Crown Land Records,
 Department of Lands and Forests, Halifax, Nova Scotia.

H. H. Wright
 Deputy Minister

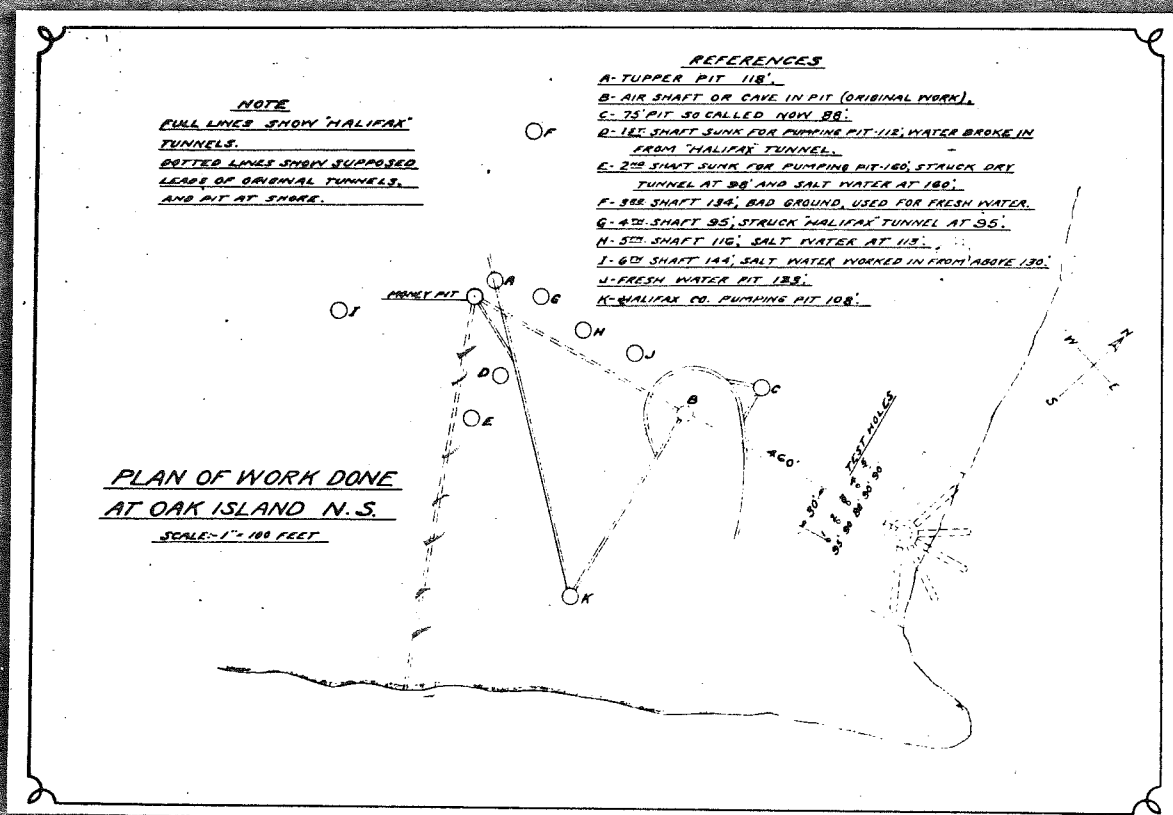
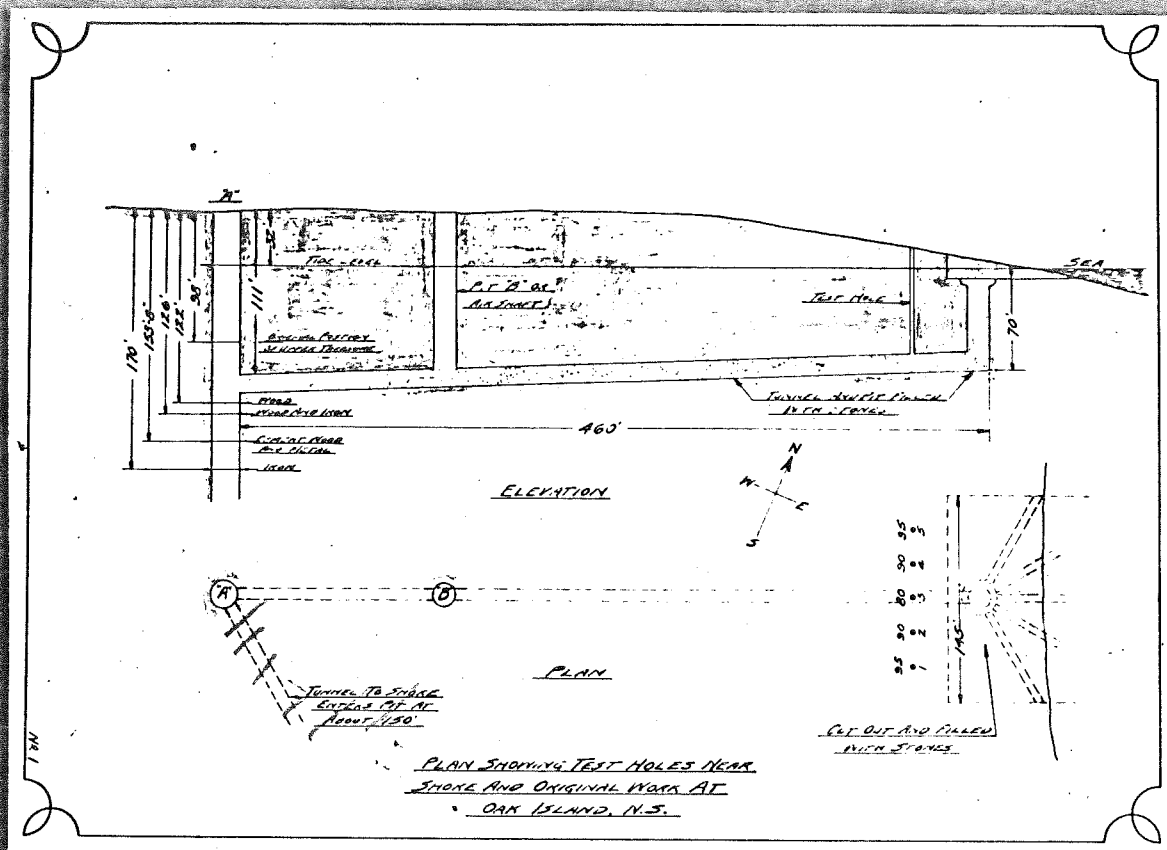
This photostat is exactly one half
 the size of the original.
 The scale is therefore :
 Forty Rods to one inch.

5

Sketches from the OAK ISLAND TREASURE COMPANY
Prospectus, showing work done prior to 1893



Work done by the OAK ISLAND TREASURE COMPANY
1893 to 1906



*Hedden states that Bill Harrick was the engineer in
a residence for Hedden.*

I arrived on Oak Island "near a small town along the C.N. R.R. named Western Shore" May 27, 1936, landing a considerable portion of the machinery May 28 being stormy and rough the man, Mr. Walker, who owned the scow advised against trying to land the balance till the bay became smoother.

On Friday May 29 with nine men and rigging equipment obtained from Mr. Walker with scow and gasoline tug, we landed and transported all equipment to the head of shaft known as the money pit. Using a horse and wagon belonging to Mr. A. C. Dauphinee.

I inspected the shaft carefully and found the timbers crushed part way across the shaft, the planking crushed in in places, and bowed in others. I measured to the water level and it was even 32 ft. on the South, or higher part of shaft. The N.W. and N. sides had settled twenty inches throwing the entire shaft out of square, and timbering out of line.

I started clearing away all useless material and began reinforcing the broken timbering and removing old timber from water level at 32 ft. I took measurements several times each day at various tide actions and found no variation in the water level.

I secured 8x8 timbers "Spruce" 22 ft. long and leveled them across edge of the shaft on S. and N. sides under these I strung spruce timber 6x6 and bedded cribbing of sawed timber at each end and blocked with sawed posts between, furnishing a strong solid head frame to begin working from.

After erecting an engine and pump house I stood a head frame 22 ft. high of 6x6 spruce and securely x-braced and cross braced it.

For sheave supports at head I put up 6x6 spruce timbers spanning the six upright posts of tower.

After clearing away broken and rotten

timber I began pushing the bulged sides back in line and reinforcing with 6x6 spruce timber.

Here I halted with timbering and put in a 1000 gallon per min turbine pump which on the start delivered 1300 gallons per min at a depth of 100 ft it was delivering per minute.

I ran the pump 2 hours and fifteen min and lowered the water 70 ft in the shaft, which would be 100 ft below the deck-head of new timbering. I observed when the water was down to the above level, an old shaft several hundred feet north E above Smiths cove was drained also, "proving" there is some clear passage between the pit marked on map to be 55 ft. in depth.

On June 11th I began to concentrate all effort in retimbering the shaft at money pit and pushing down to the 150 ft. level.

Between May 29 and June 14 I have taken numerous measurements to the water level in the shaft at the money pit. These measurements were taken at every tide phase and I have not been able so far to detect any tidal affect; or variations in the water level in money pit shaft that might be due to tidal actions.

June 14th 1936. directly after writing the above at 12:00 noon I took another measurement and found the water level to be at 35 ft below surface landing of shaft. (This shows the water level lower by 3 ft. than at any former measuring. The tide is about half low. I think the draining of other pits has some bearing on the water level.

June 14 1936. I just took a measure to water level in shaft and found 33 ft. 10", a rise of 1'2" at high tide.

At a point 42 ft. from deck head of shaft along the N.W. corner was found a hole 4' wide and 5' long where a charge of dynamite (said to have been used to cut off steel cable support) had been exploded.

The 6"x6" timbers we cut off. Behind this

hole was a cavity and still another set of older timbering was visible. At 50 ft. to 60' a general settling has crushed the upright posts supporting ends of cross timbering from west to east. At about 54 ft. a bulge of ten inches bowed the timbering inward. A considerable strain was evident at this point as one of the men struck one of the original timbers with a small wrecking bar it split with a report like a pistol. At this point I put in new 6"x6" uprights and 6"x6" cross timbering from W to # & N to S and doubled the upright posts in center.

June 17, 1936 A considerable seepage has showed along the N.E. corner and easterly end of shaft, or end directly beneath the hoist house. At 4:30 P.M. on above date this seepage was normal. At 8:30 P.M. I visited the shaft and heard running water. I descended with lights and found a stream about 2" pouring across the S.E. section of shaft. This was at about half tide. I had the shaft pumped down to 100 ft. at the time.

June 20: After further observations I found the above water was caused by the natural seepage finding a common outlet which increases and diminishes according to the height of tides.

June 21: I have noticed several cracks on the surface around the shaft. Two places these cracks were one foot in width and the sod fell away showing a distinct new disturbance. Today on careful inspection and measurements I found distinct outlines of a circle 75' in diameter with the shaft nearly in the center. This circle showed cracks one foot in width in three places and from 1 to 2 inches and just a faint line in others.

Inside the shaft there has been a slight but general settling since extensive pumping has been in operation.

I also noticed that three other old pits are gradually becoming dried out since above pumping operations.

I have noticed a slight settling at shaft head and the pump line is slightly out of alignment.

Today I brought out a crew of men and I descended to a point between 95 and 100 ft where I found the South West corner & sides jammed with old timber and the 6"x6" used in original shaft broken and pushed in about three feet, a 6"x6" timber was jammed endways against pump line gradually crowding it out of line.

Three men lowered me into the shaft below this wreckage in a life line, where I sawed away timbers and dislodged broken lumber and sent it to surface. Later we realigned the pump at head of shaft.

Most of the timber which cross braces the shaft are broken or shoved out of place, as far down below this point as I could see. A considerable amount of old lumber is lodged along South East end making inspection uncertain and difficult till shaft is retimbered with new lumber down to this point.

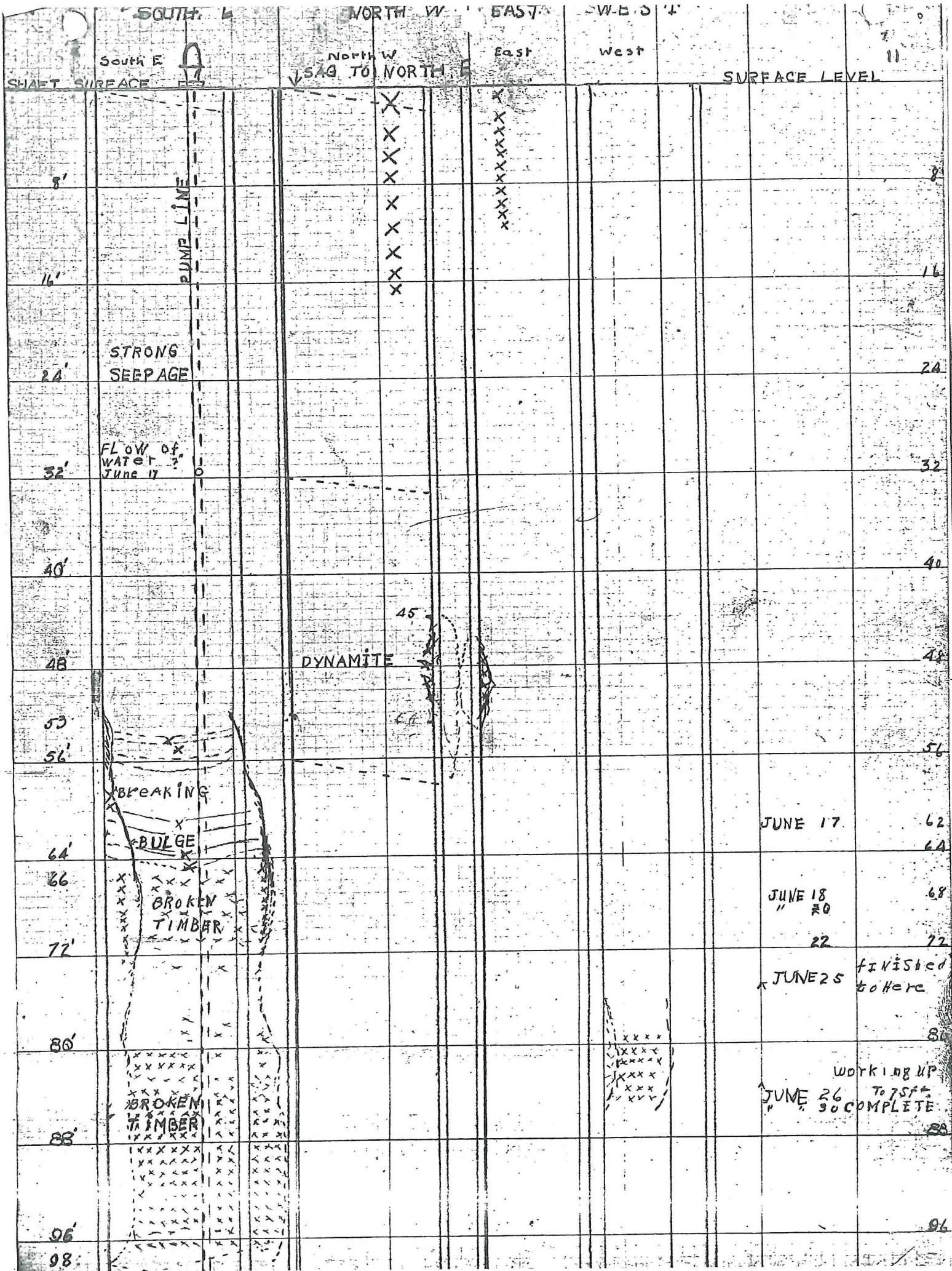
July 10: We cleared away a mass of broken timber and bulging earth and caught up the caved area down to 110 ft. In this operation it was necessary to timber around pump line to prevent the South and West walls pushing in and destroying the entire pump system.

Nine pieces of 6"x6" timbers were crowded against the pump line pushing it out of plumb. These all had to be carefully cut away and new timbers substituted.

After securing the two dangerous walls down to 100 ft I ordered the pocket cleared away from 78 ft in order to have full control over the pump system.

Today (July 10) we are carrying out this work.

As the line was hard against the west wall a false set of timbers were set East of pump line to brace the new work. After swinging the line 8" in this direction we are able to cut out this bracing and replace it along the west wall and at the ends of the new work thereby allowing 6 ft to swing the line free towards the Eastern section of shaft.



SOUTH E NORTH W EAST WEST

SHAFT SURFACE SURFACE LEVEL

PUMP LINE

STRONG SEEPAGE

FLOW of WATER 2" JUNE 17

DYNAMITE

BREAKING

BULGE

BROKEN TIMBER

BROKEN TIMBER

JUNE 17

JUNE 18 20

22

JUNE 25 finished to here

WORKING UP TO 75 FT. JUNE 26 30 COMPLETE

5'
16'
24'
32'
40'
48'
53'
56'
64'
66'
72'
80'
88'
96'
98'

8'
16'
24'
32'
40'
48'
56'
62'
64'
68'
72'
80'
88'
96'
98'

July 6 12 Complete

110

FINISHED 7.13 SET PLATFORM 110' 7-6

122

SET PLATFORM 122 7.15
COMPLETED 7.20

133

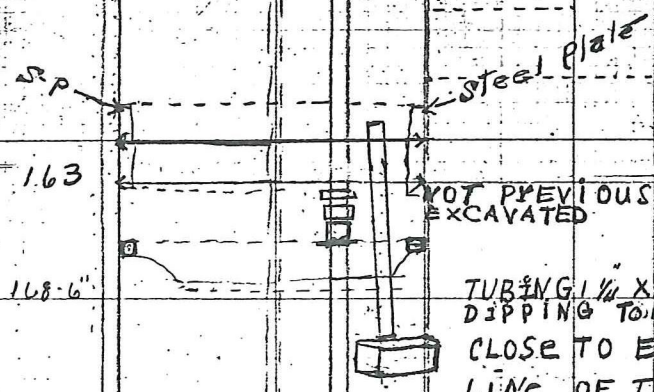
SET PLATFORM 133-7.30

146

OLD BROKEN TIMBER ROCKS MUD
AND OLD WIRE CABLE
STARTED SETTING BLACK MUCK

151

Set Platform 7 31-36



HIT YELLOW SOFT MUD
2 ft
SAND GRAVEL & BOULDERS

TUBING 1 1/2 X 11-3 LONG STANDING ON ANGLE
DIPPING TO EAST
CLOSE TO EASTERN WALL OF SHAFT IN LINE WITH CENTER
LINE OF TIMBERING

The work of sinking a new shaft at Oak Island began May 4 1937. by clearing away refuse, collecting timber and other supplies and building a Shoe.

In the first eight feet of excavating there was a considerable old timbers encountered from foundations and fills from previous operations.

At about ten feet the well defined outline of an old shaft began to appear. This shaft had been filled in with gravel and coal ashes and other waste matter from other diggings.

At twenty feet an accurate measurement was taken of the old shaft, and was found to be 6 ft wide with about ten feet of its length showing, as it extends beyond the North E wall of the new shaft.

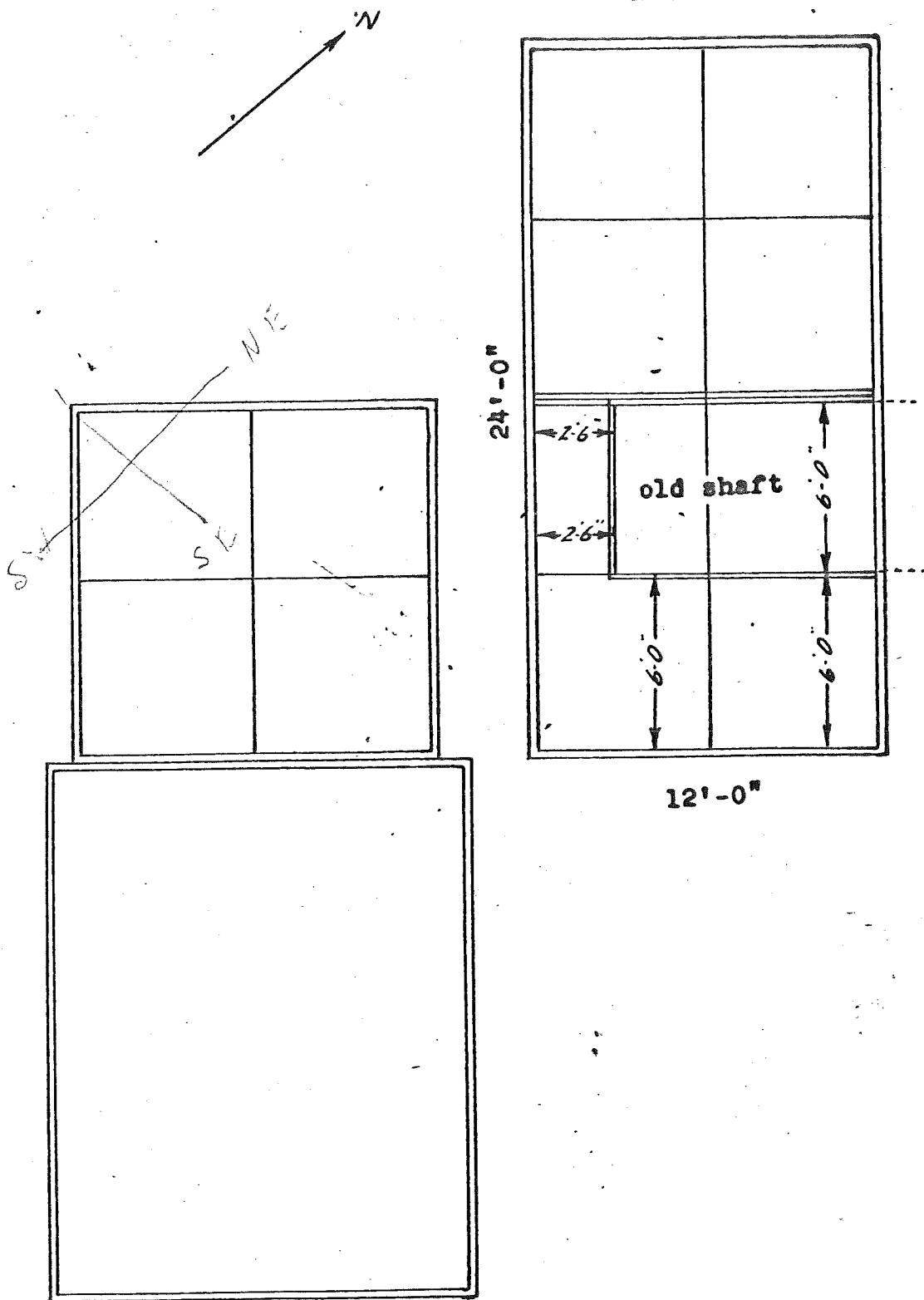
The old shaft had been timbered with double three inch planking.

The relative position of the old shaft with the new, or present operations are as follows.

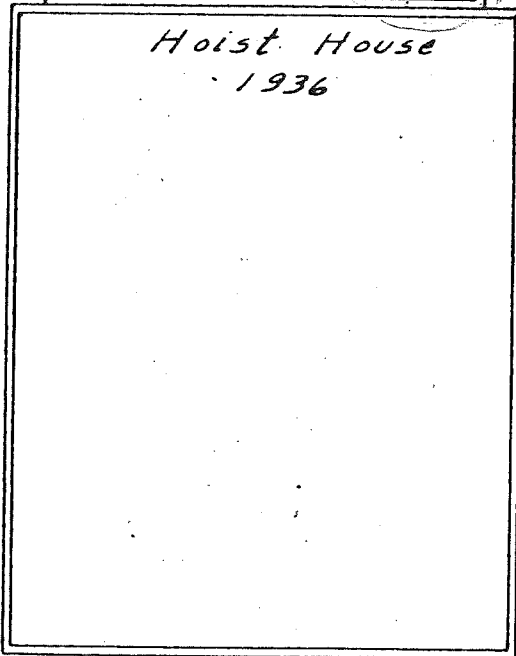
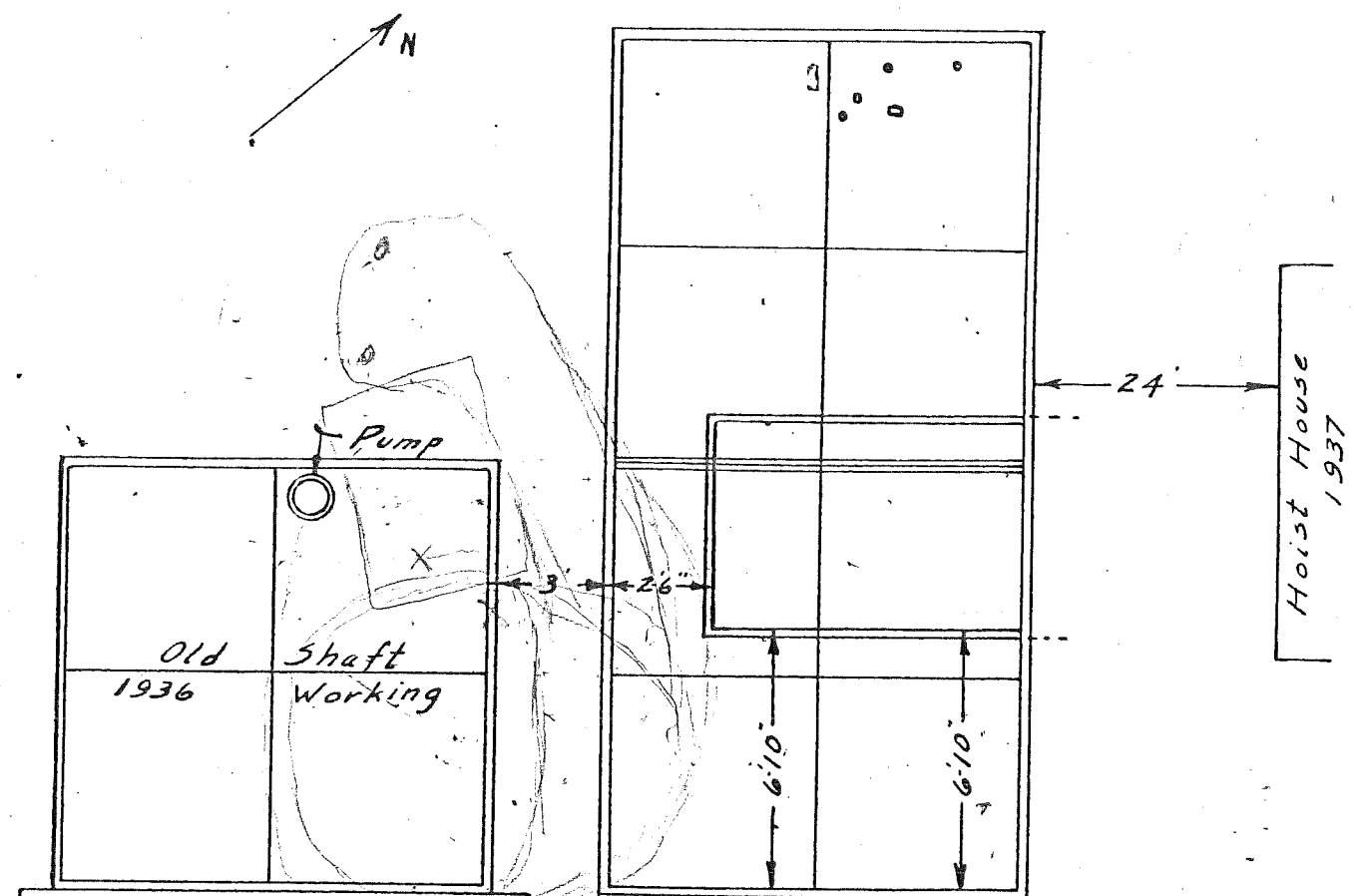
On the South side of new shaft it is 2.6" from wall of new shaft and extending west for 6.0". then North past line of North wall of new shaft then East for 6.0" (width of old shaft) then South to starting point. On the Eastern end it is 6.0" West of new shaft.

The planking in old shaft are fairly well preserved.

NEW SHAFT



POSITION AT 20' Below collar of shaft or Deck



1937 Shaft
12' By 24'

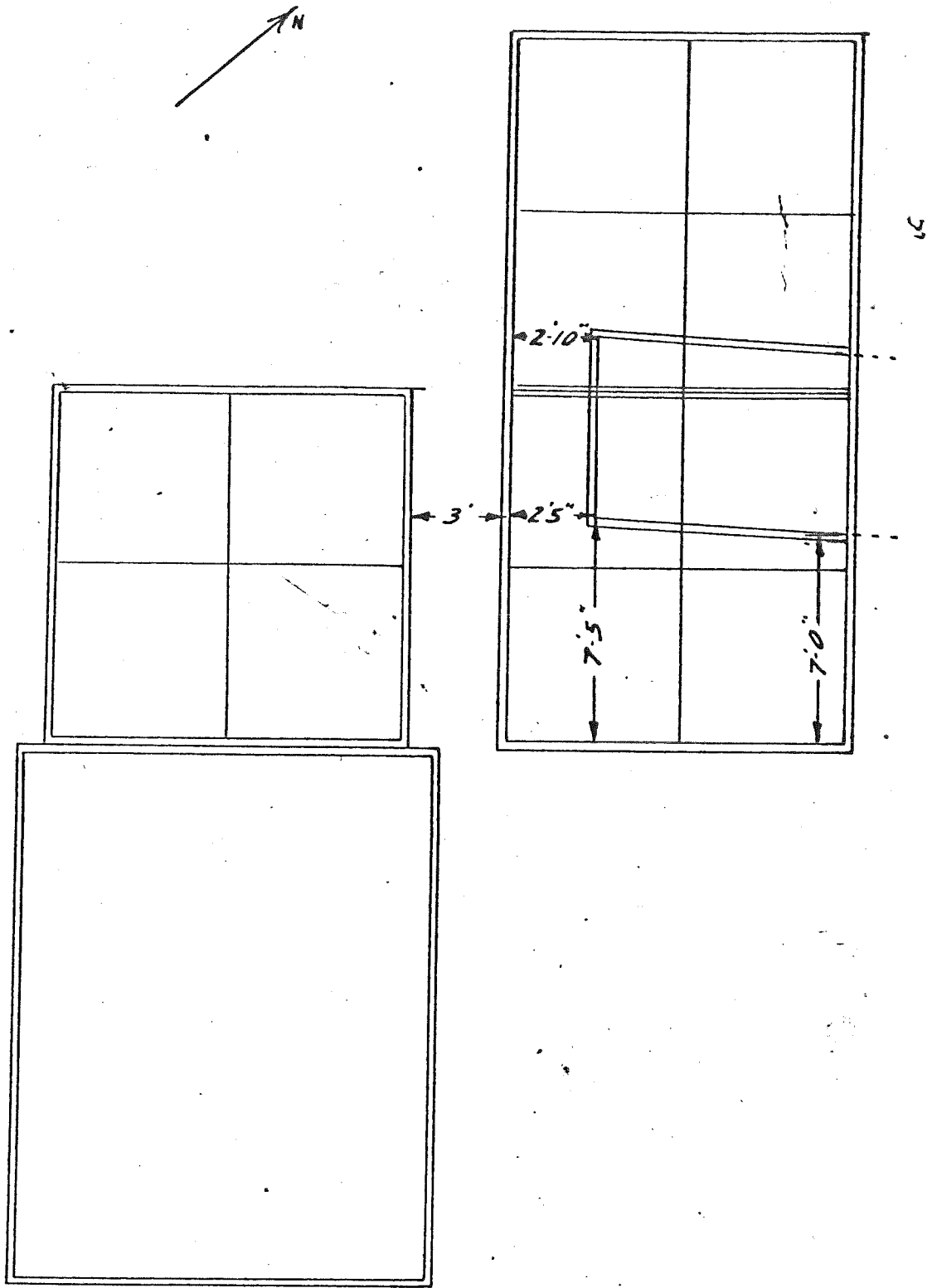
The old filled shaft at 24' began to lean about ten inches towards the N.W.

At 26 ft. old timbers "standing on end" is appearing in the North West corner or section of new shaft

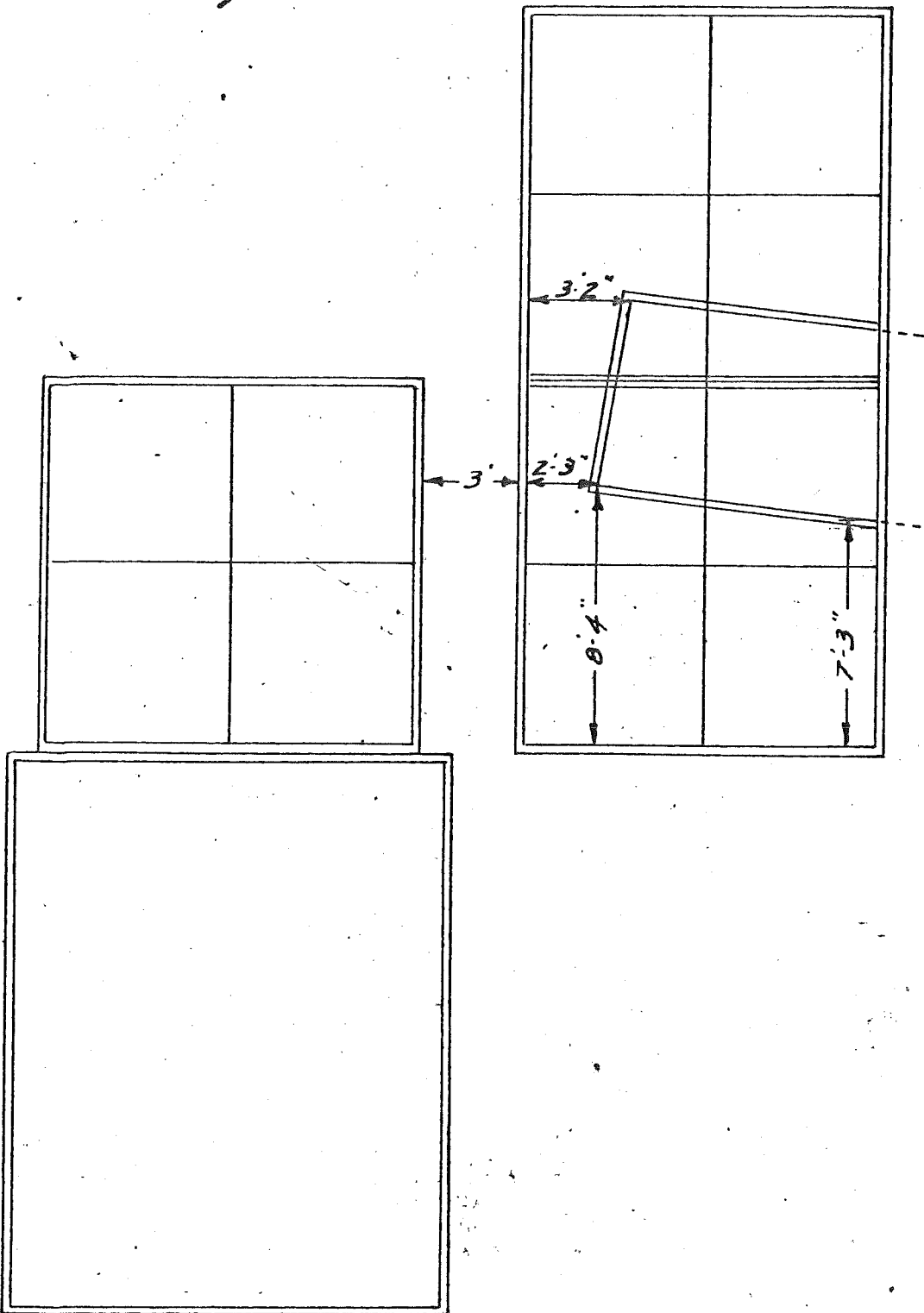
Most of the ground is blue clay and boulders. However, in the filled shaft some gravel and coal ash appear at intervals to 26 ft.

Scale: 3/16" = 1'-0"

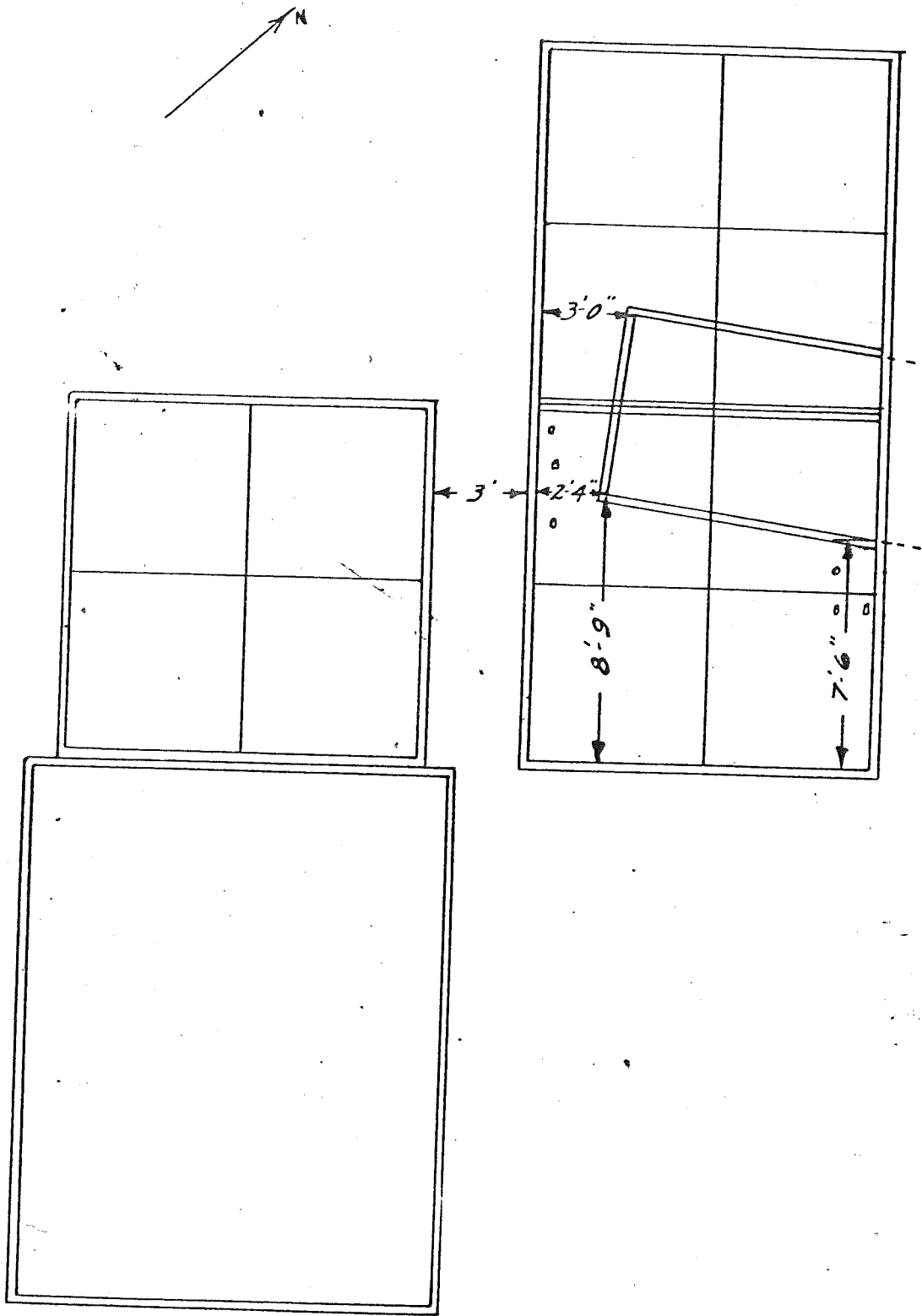
POSITION AT 24'



POSITION AT 30'



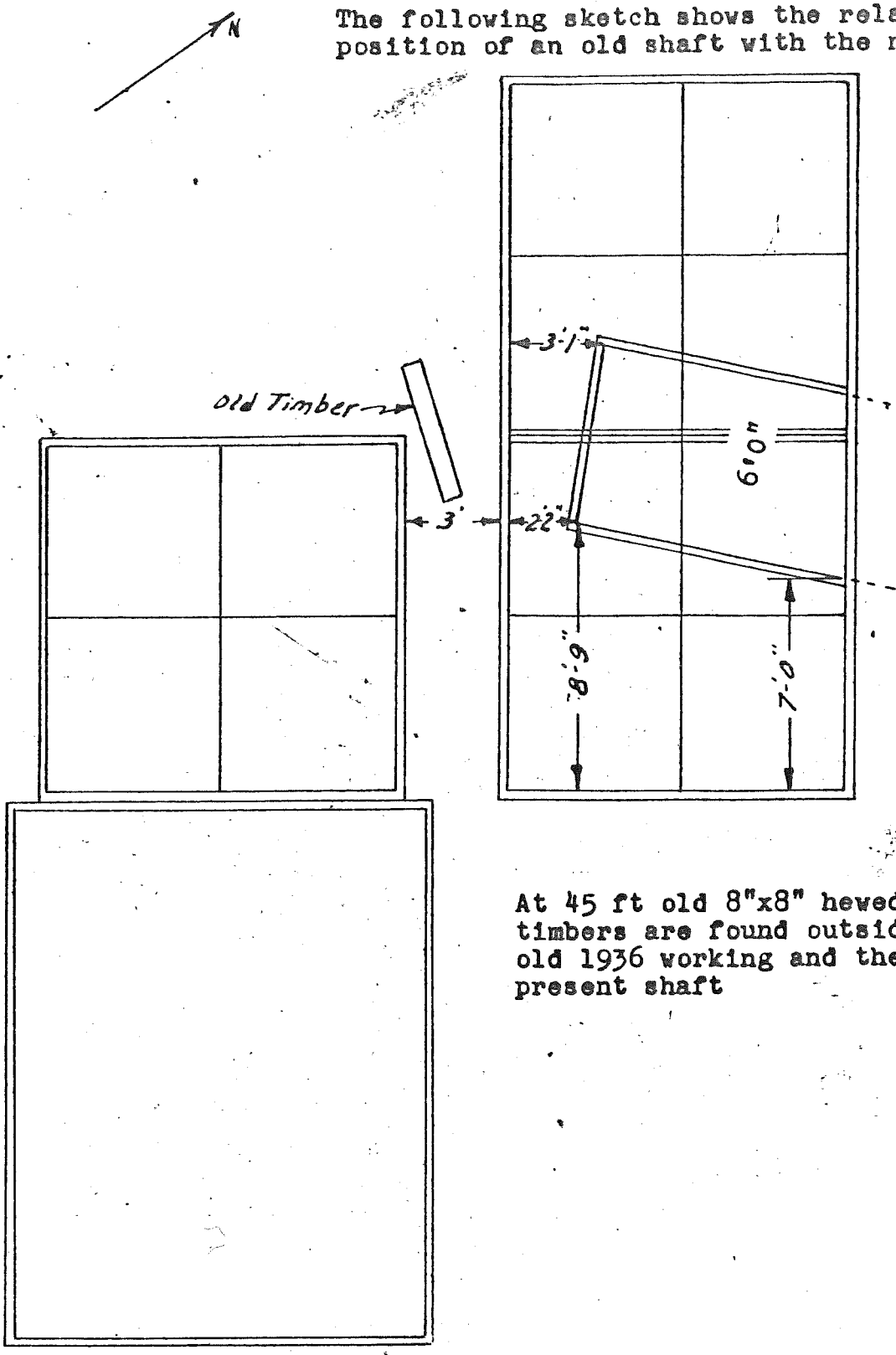
POSITION AT 35'



POSITION AT 40'

6/25/37

The following sketch shows the relative position of an old shaft with the new.



At 45 ft old 8"x8" hewed timbers are found outside the old 1936 working and the present shaft

POSITION AT 45'

6/30/37

Position of old and new shafts at 50 ft.

At 47 ft there seemed to be slightly better digging in the area of old shaft and along the S.E. side of old shaft. No large boulders are encountered along this depth, but considerable old timber is taken out along the side next the pump shaft, which is probably packing put in when sinking other shaft.

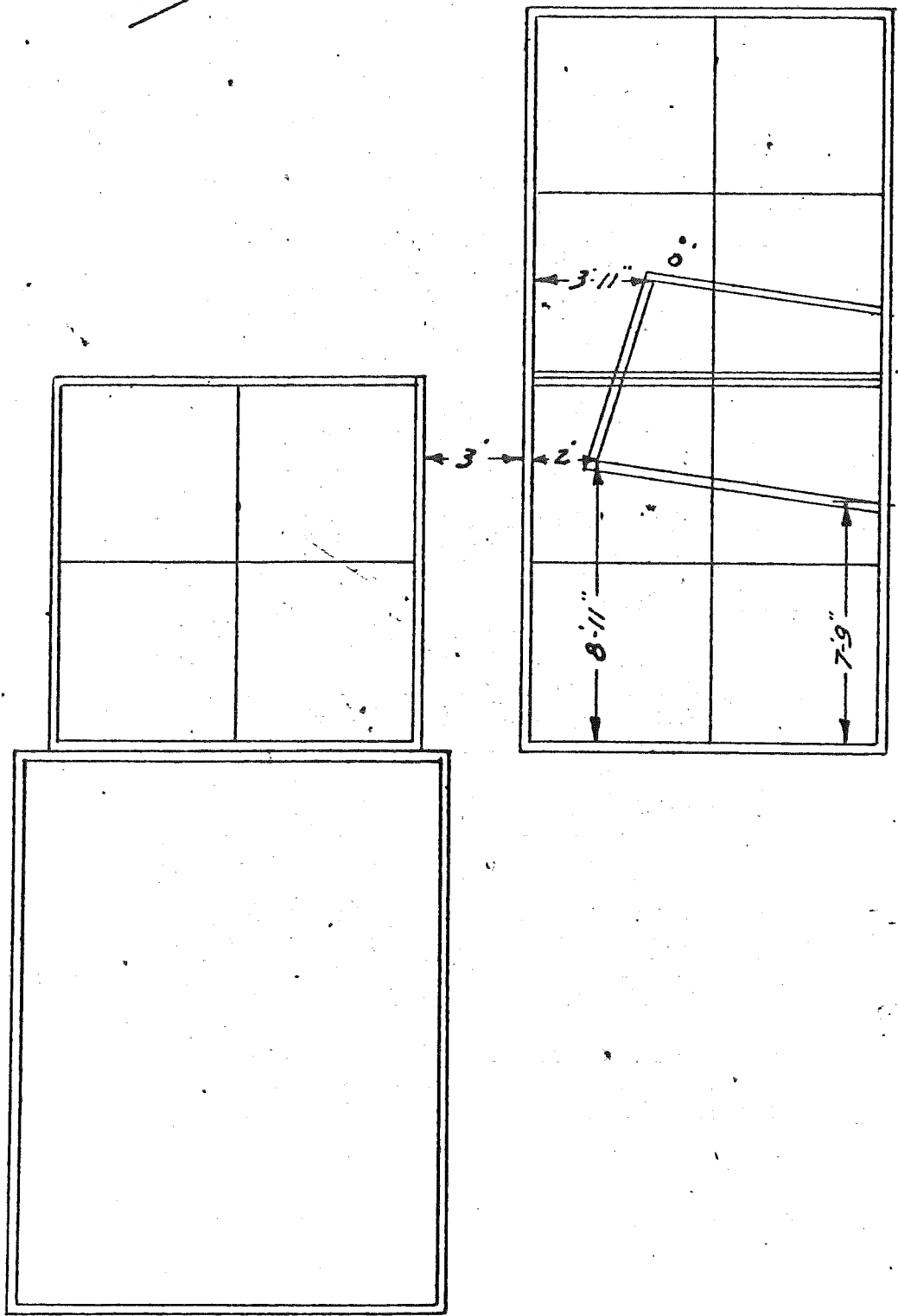
Old 8"x8" timbers continue along wall, outside the pump shaft.

Ten or twelve pieces of old 2" drill casings were picked up, from 40' to 52'. and one piece eight feet long of 2½" Pipe was taken out. All this pipe was badly eaten out with rust.

The old 8x8" hewed cribbing is still along the wall of pump shaft, between the two shafts.

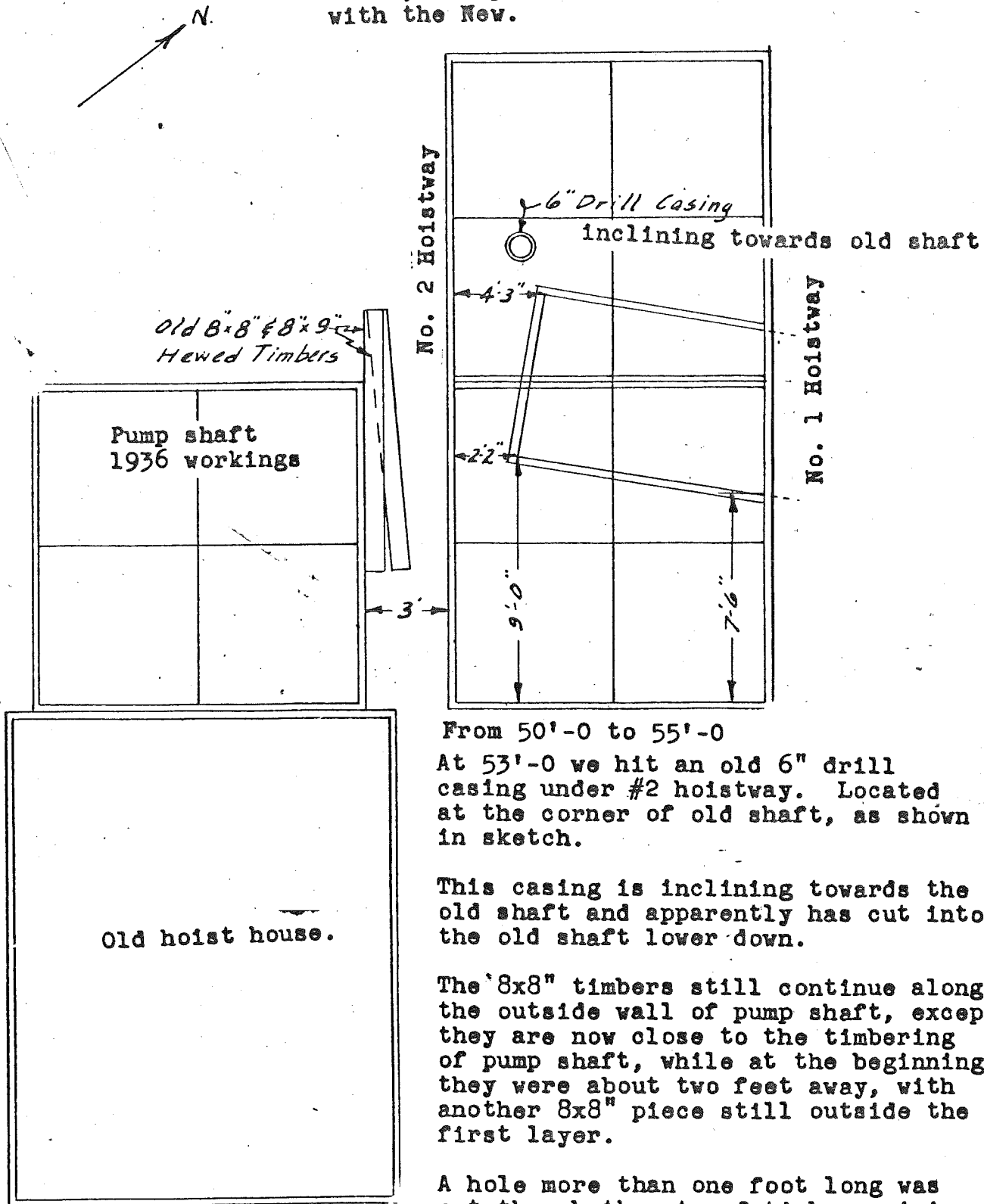
At the beginning these timbers were two feet away from the old shaft, leaving a void between the 8x8"s, and the wall of the pump shaft.

However at 50'-0 these timbers are close to the pump shaft, and some of them are 8x9" hewed timbers.



POSITION AT 50°

Report of findings at 55'-0 in new shaft, and position of old shaft, with the New.



From 50'-0 to 55'-0

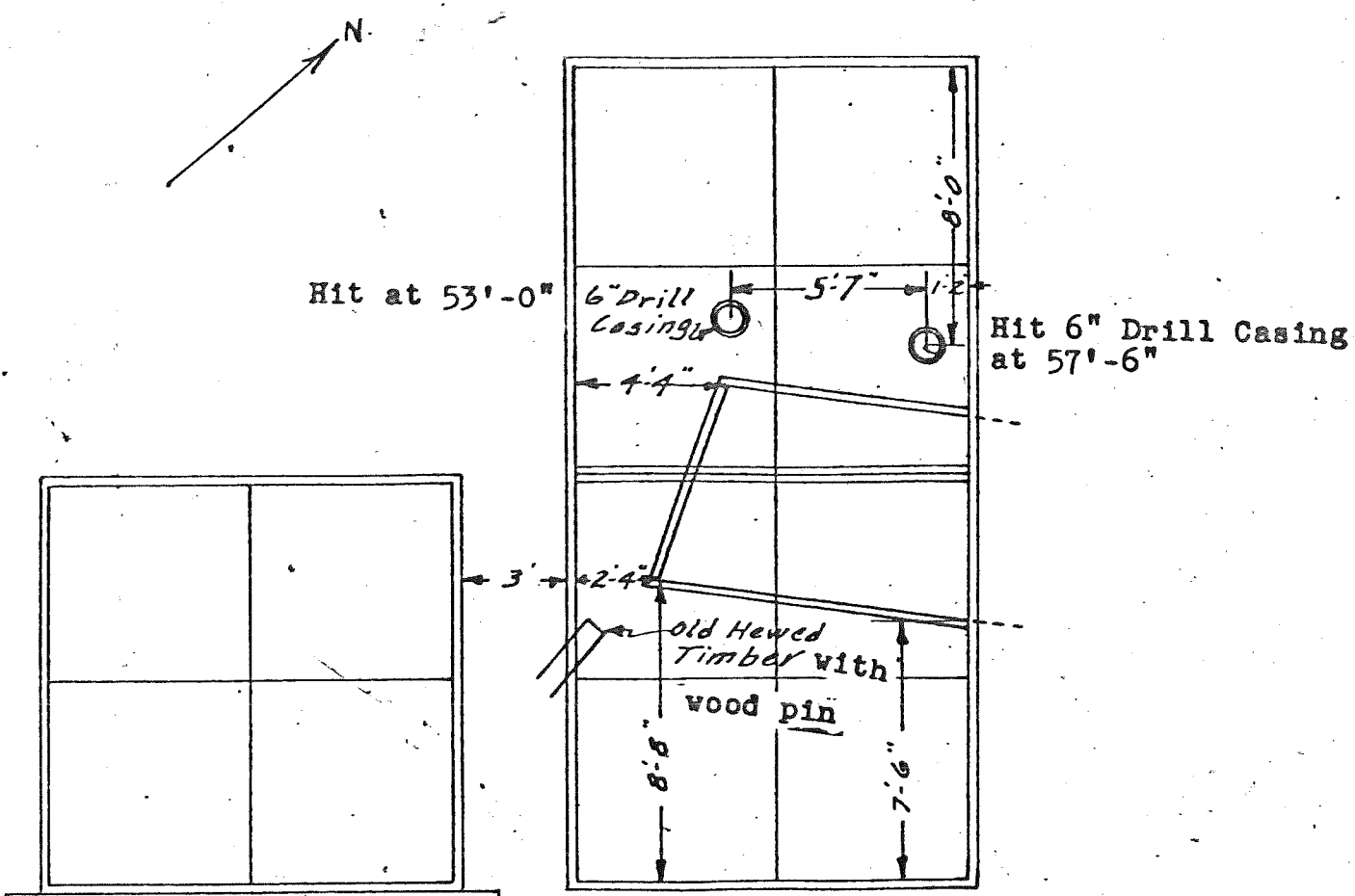
At 53'-0 we hit an old 6" drill casing under #2 hoistway. Located at the corner of old shaft, as shown in sketch.

This casing is inclining towards the old shaft and apparently has cut into the old shaft lower down.

The '8x8" timbers still continue along the outside wall of pump shaft, except they are now close to the timbering of pump shaft, while at the beginning they were about two feet away, with another 8x8" piece still outside the first layer.

A hole more than one foot long was cut thru both sets of timbers giving a perfect view of their position and size.

POSITION AT 55'



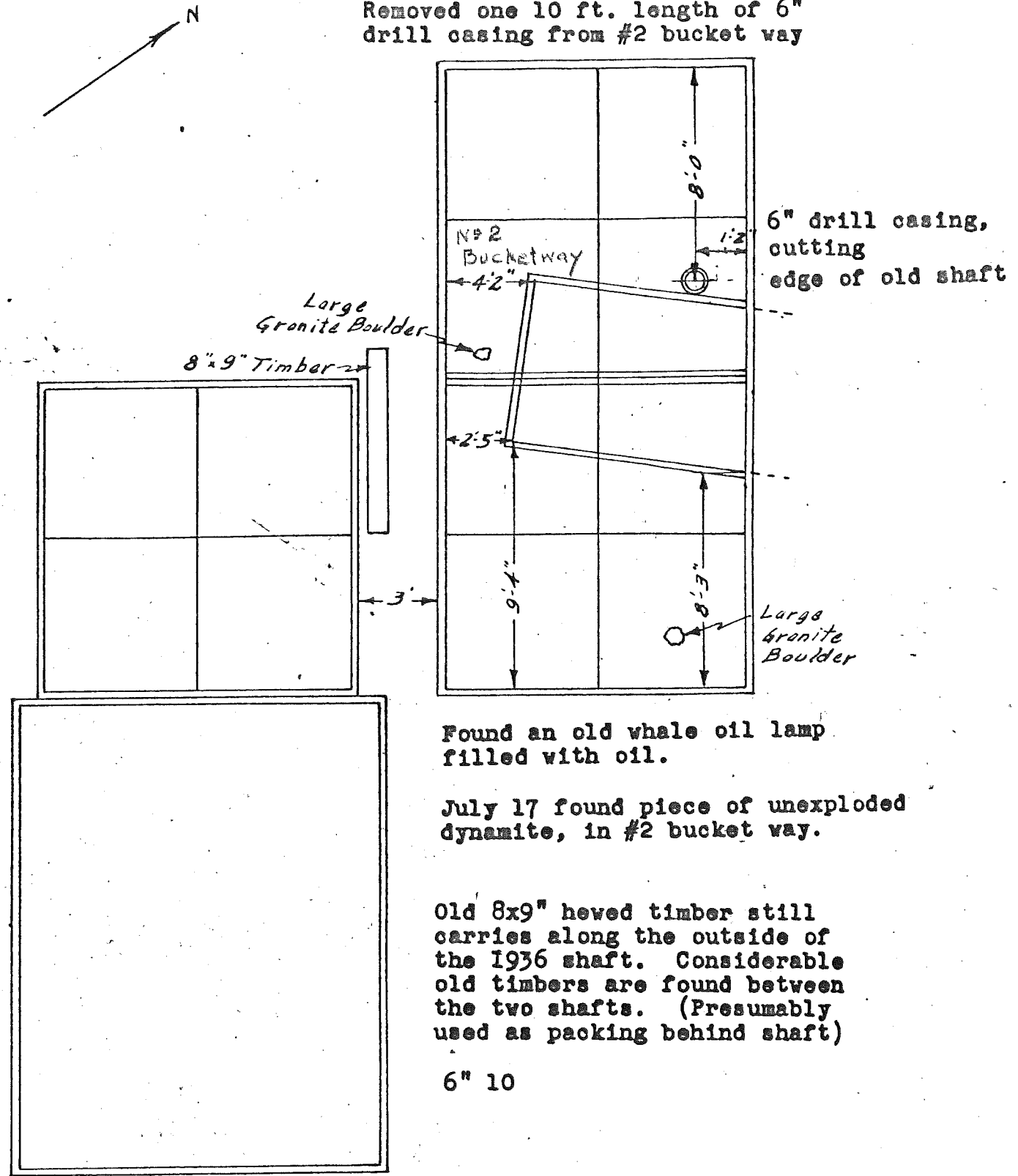
At 57-6" we came to another 6" drill casing cutting the edge of the old shaft. Its exact position is shown in the above sketch.

When the casing was first opened it carried off all the water lying in bottom of shaft, and filled up to 3-6" from top where water remained.

POSITION AT 60'

Sketch, showing new shaft between 60' and 65 ft.

Removed one 10 ft. length of 6" drill casing from #2 bucket way



Found an old whale oil lamp filled with oil.

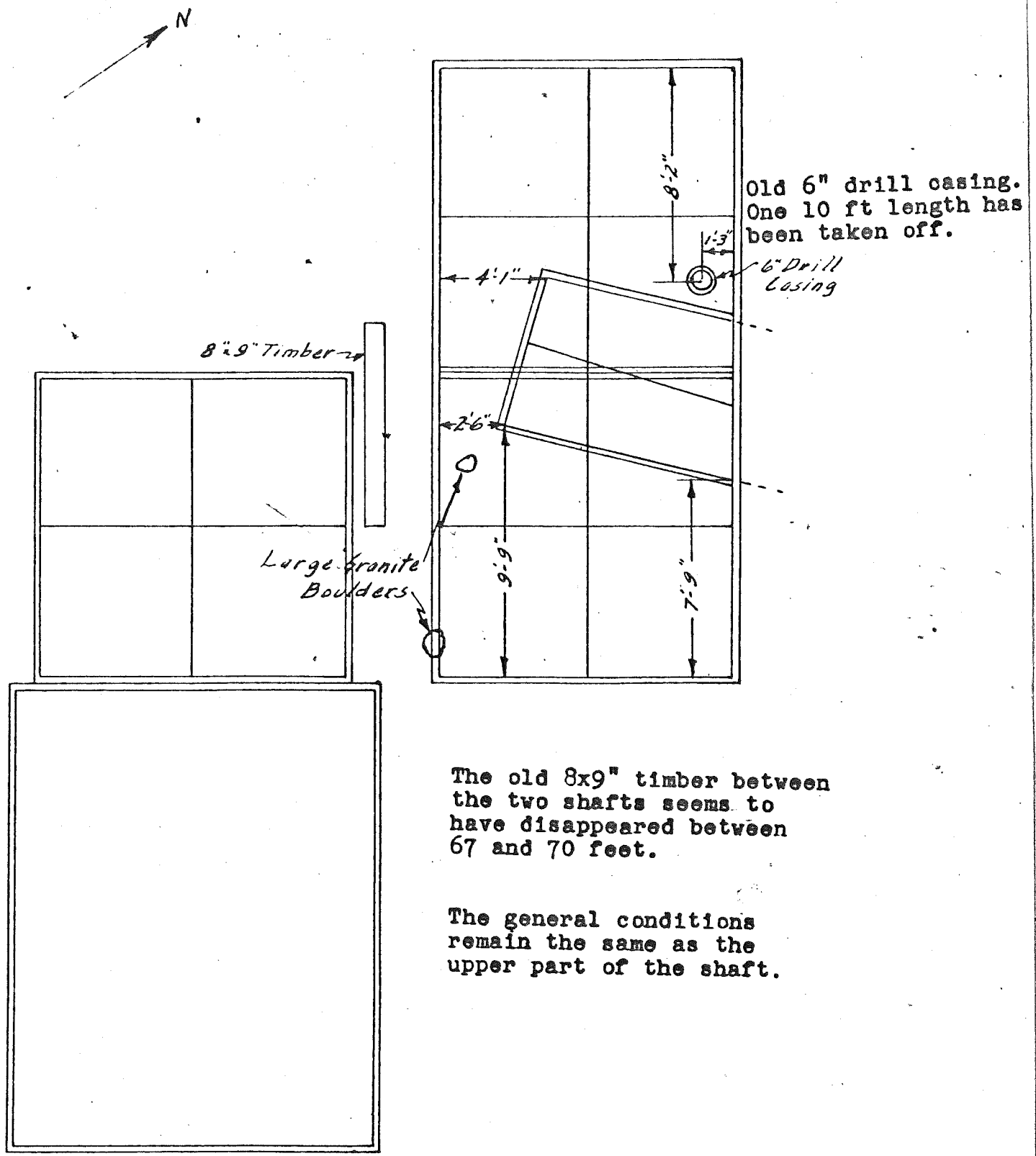
July 17 found piece of unexploded dynamite, in #2 bucket way.

Old 8x9" hewed timber still carries along the outside of the 1936 shaft. Considerable old timbers are found between the two shafts. (Presumably used as packing behind shaft)

6" 10

POSITION AT 65'

Sketch, showing new shaft between 65' and 70 ft.

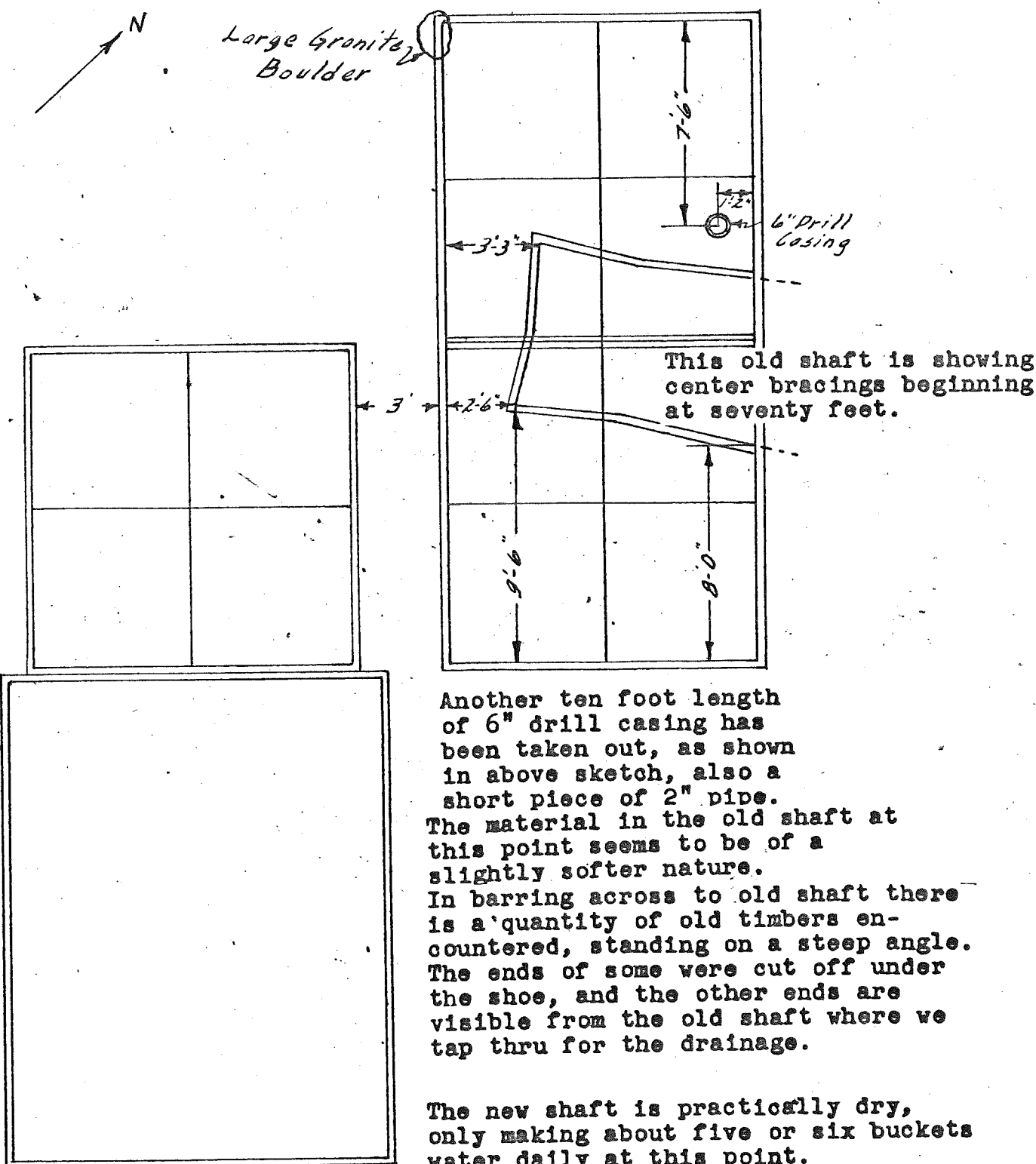


The old 8x9" timber between the two shafts seems to have disappeared between 67 and 70 feet.

The general conditions remain the same as the upper part of the shaft.

POSITION AT 70'

Sketch showing new shaft between 70' and 75 ft.

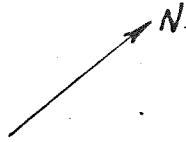


This old shaft is showing center bracings beginning at seventy feet.

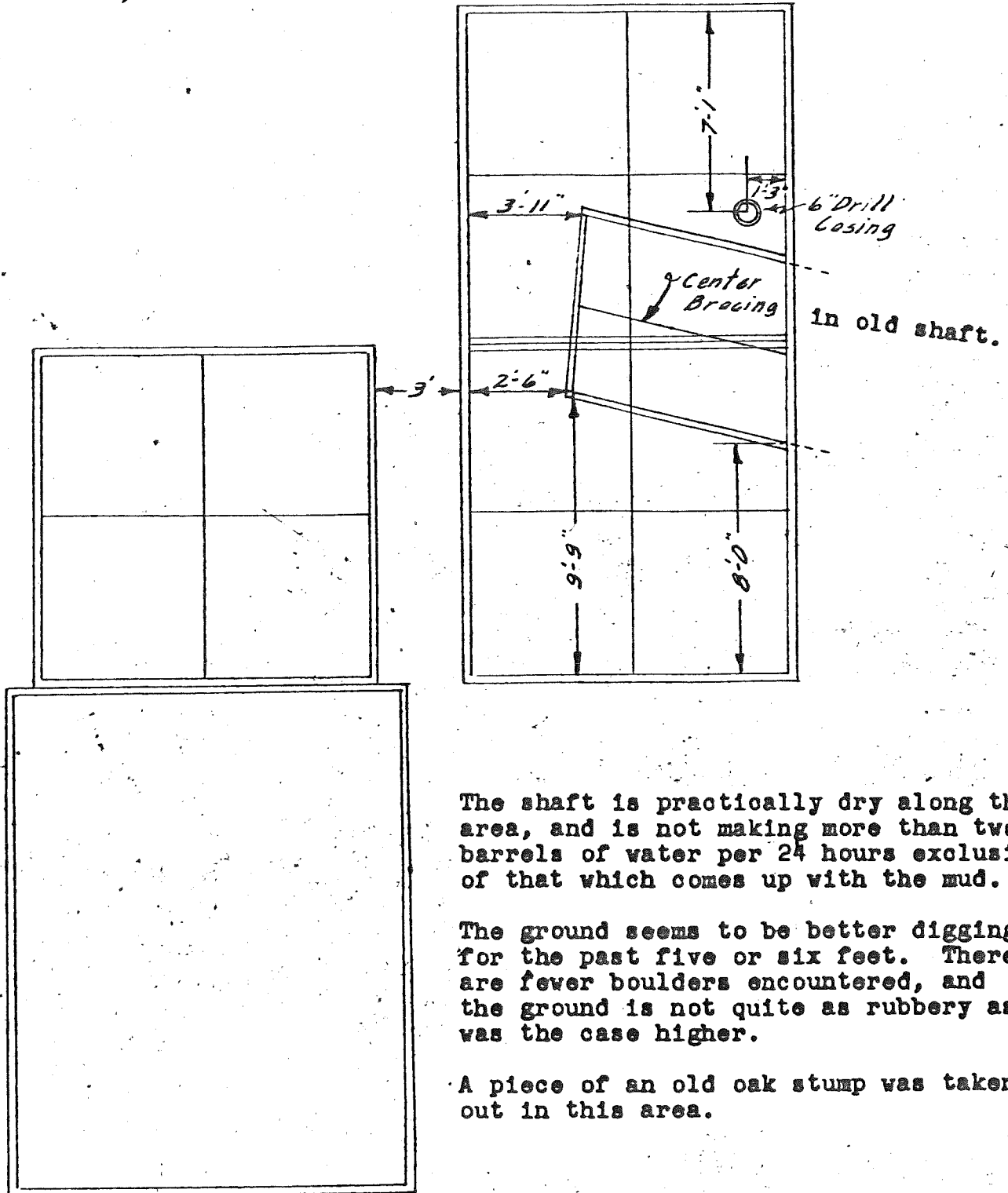
Another ten foot length of 6" drill casing has been taken out, as shown in above sketch, also a short piece of 2" pipe. The material in the old shaft at this point seems to be of a slightly softer nature. In barring across to old shaft there is a quantity of old timbers encountered, standing on a steep angle. The ends of some were cut off under the shoe, and the other ends are visible from the old shaft where we tap thru for the drainage.

The new shaft is practically dry, only making about five or six buckets water daily at this point.

POSITION AT 75'



Sketch showing new shaft between
75' and 80'



The shaft is practically dry along this area, and is not making more than two barrels of water per 24 hours exclusive of that which comes up with the mud.

The ground seems to be better digging for the past five or six feet. There are fewer boulders encountered, and the ground is not quite as rubbery as was the case higher.

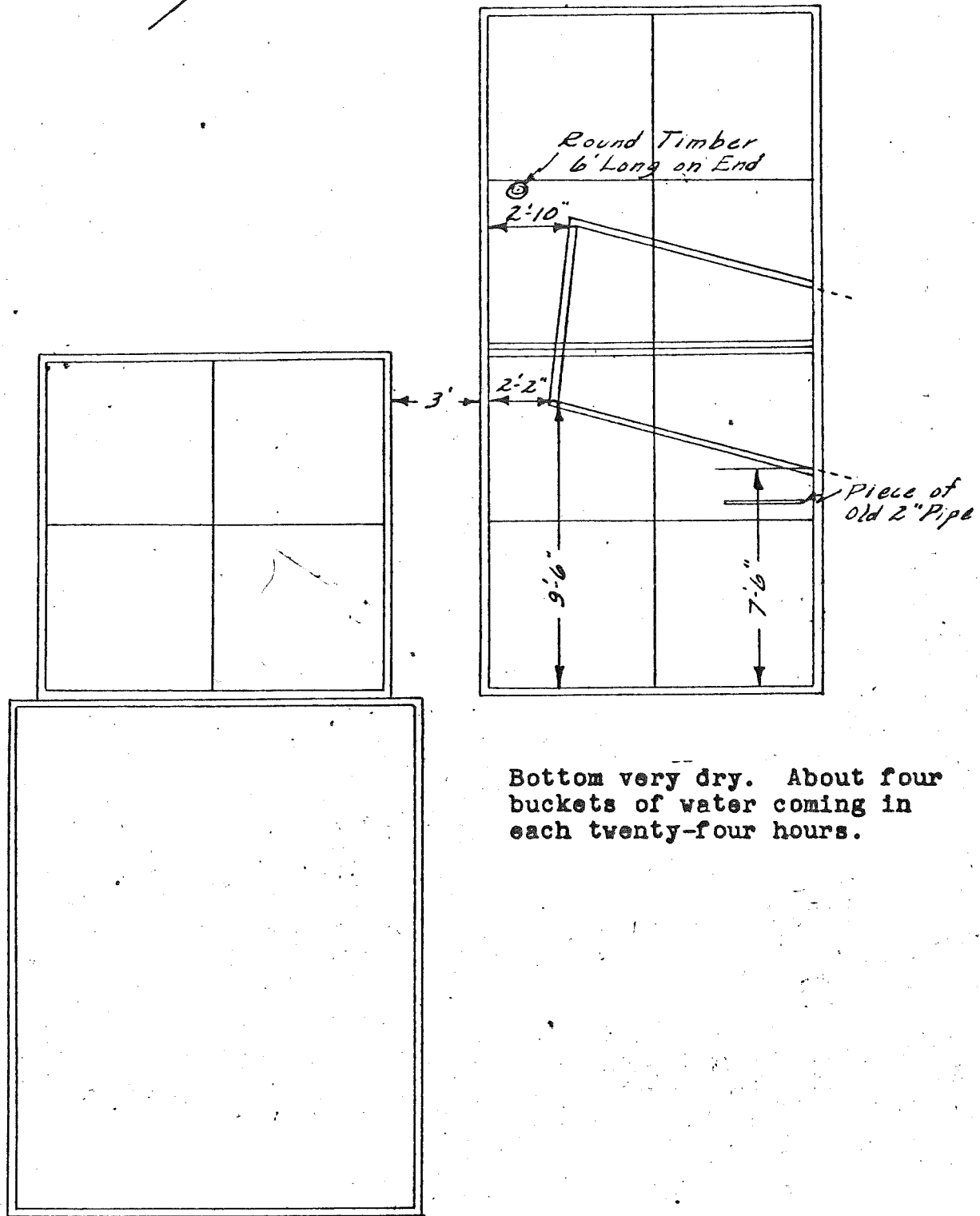
A piece of an old oak stump was taken out in this area.

POSITION AT 80'

Sketch, between 80-0" and 85-0"



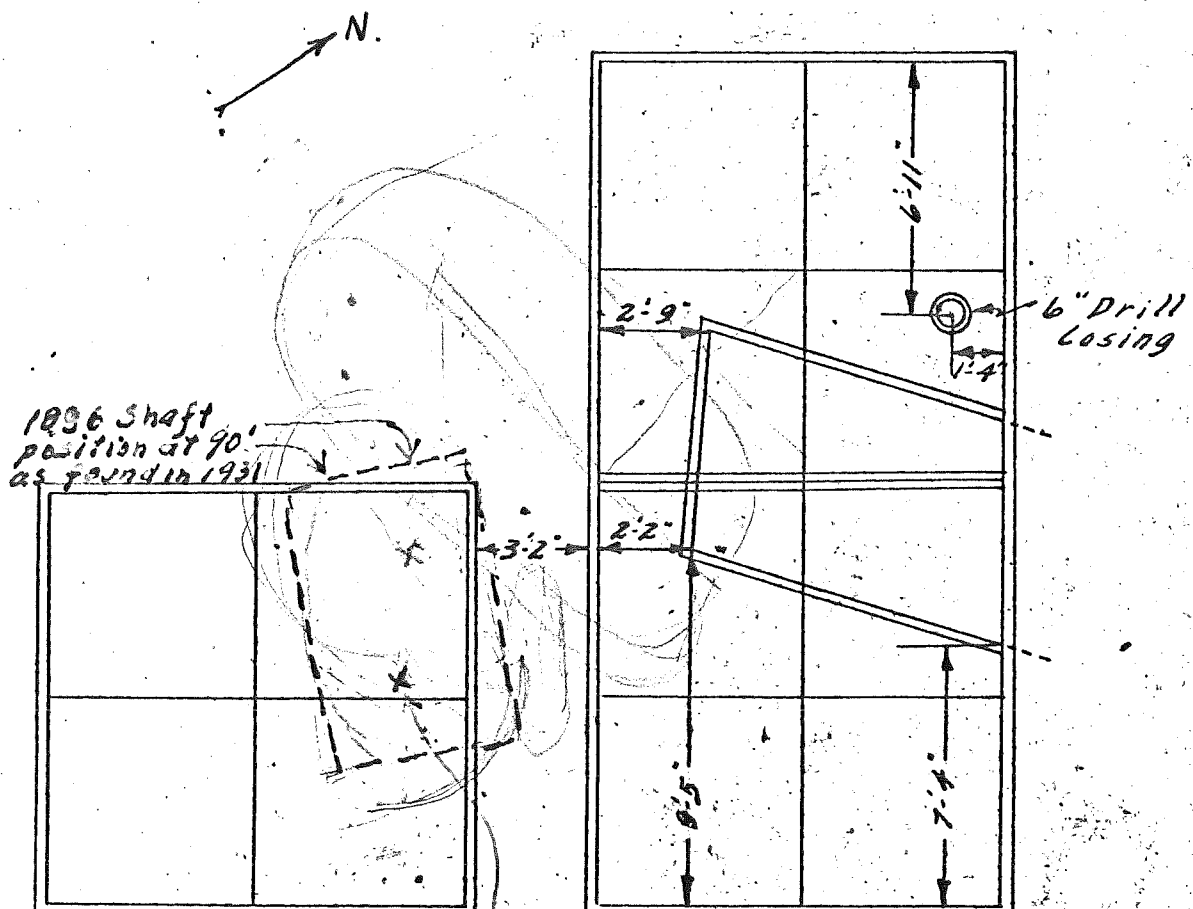
General conditions unchanged from last sketch.



Bottom very dry. About four buckets of water coming in each twenty-four hours.

POSITION AT 85'

Sketch between 85 and 90 feet

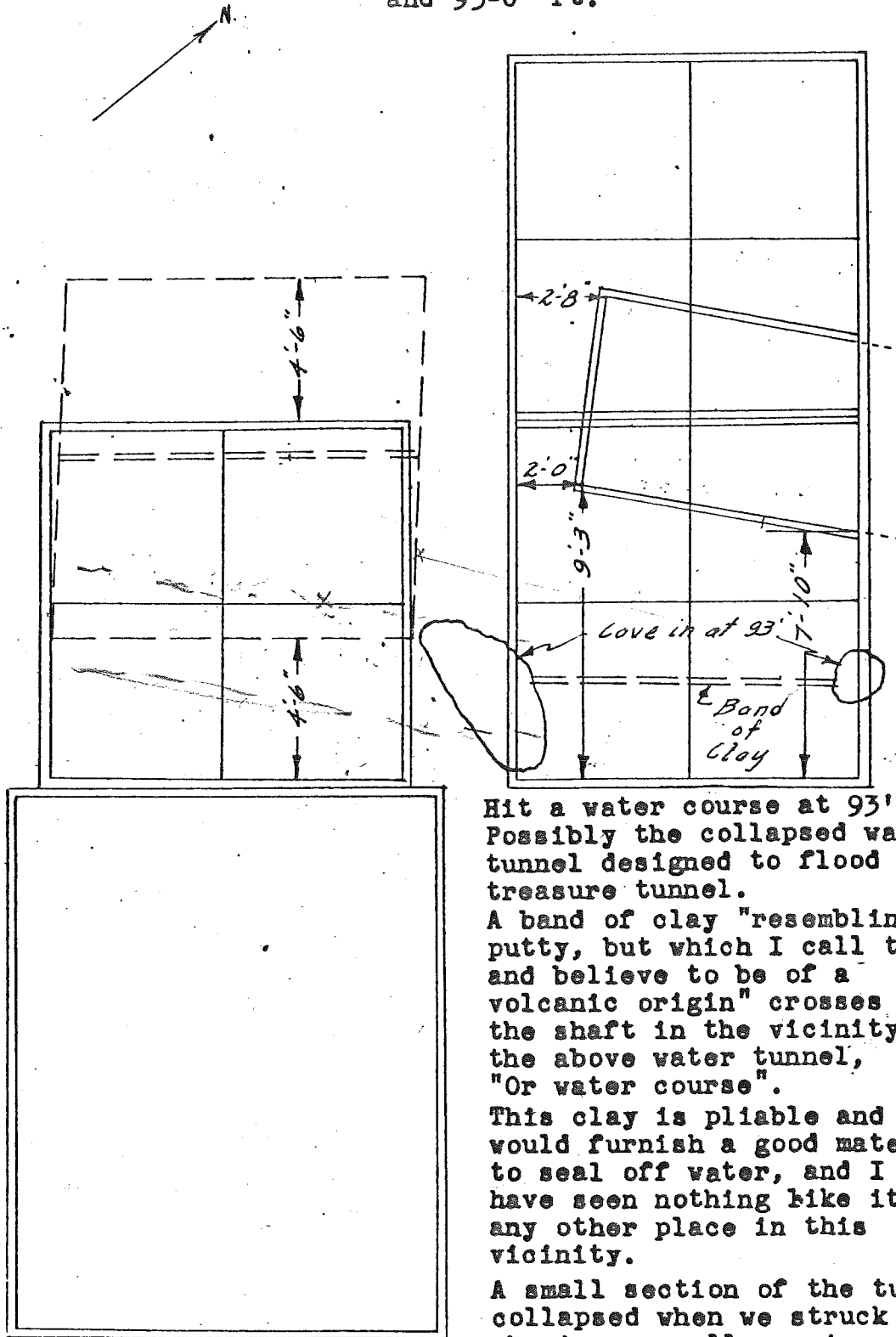


In 1931: Chappell found Timber with bolt on which he had set the drill. When he drilled through the treasure in 1896 or 7. This is the location. This is the depth-90ft. (Present depth of timber with bolt.

Conditions unchanged, unless it seems slightly easier digging along the S.E. half of shaft.

POSITION AT 90'

Sketch of shaft between 90- and 95-0" ft.



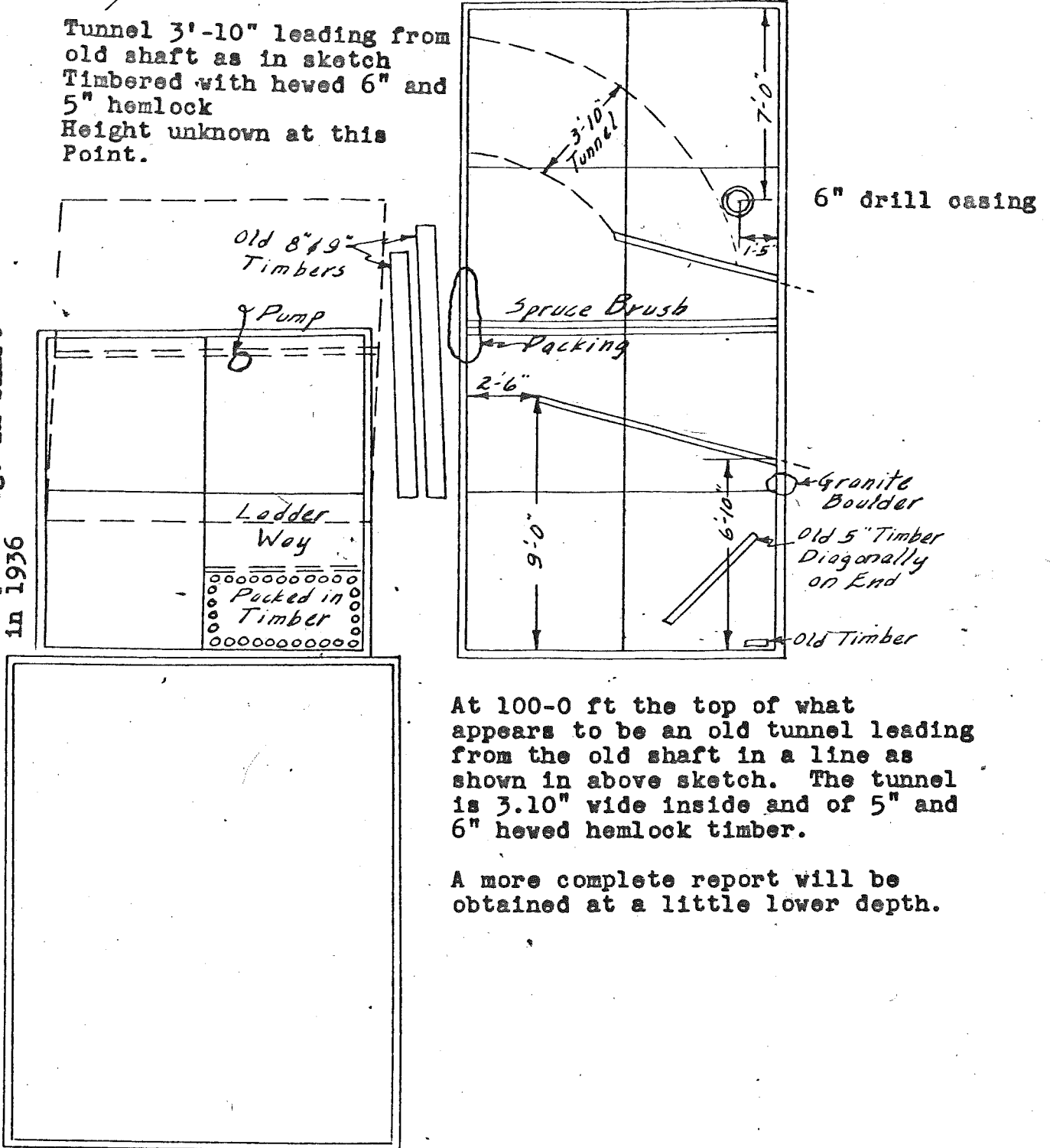
Hit a water course at 93'-0"
 Possibly the collapsed water
 tunnel designed to flood
 treasure tunnel.
 A band of clay "resembling
 putty, but which I call talc,
 and believe to be of a
 volcanic origin" crosses
 the shaft in the vicinity of
 the above water tunnel,
 "Or water course".
 This clay is pliable and
 would furnish a good material
 to seal off water, and I
 have seen nothing like it in
 any other place in this
 vicinity.
 A small section of the tunnel
 collapsed when we struck it
 showing a small opening as in
 above sketch.

POSITION AT 95'

Sketch of shaft between 95- and 100-0 ft.

Tunnel 3'-10" leading from old shaft as in sketch
Timbered with hewed 6" and 5" hemlock
Height unknown at this Point.

Old timber packed in to stop a bulge in shaft in 1936



At 100-0 ft the top of what appears to be an old tunnel leading from the old shaft in a line as shown in above sketch. The tunnel is 3.10" wide inside and of 5" and 6" hewed hemlock timber.

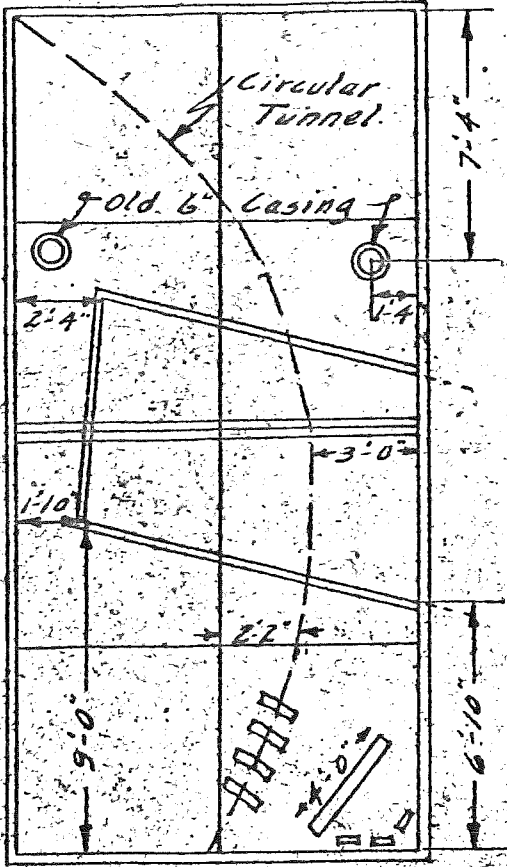
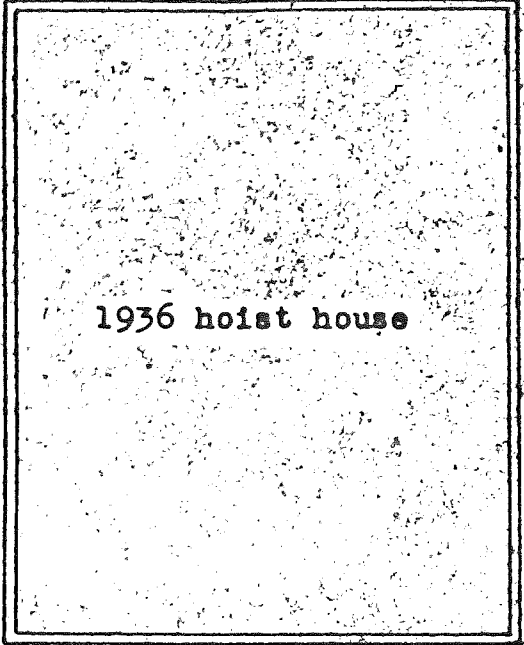
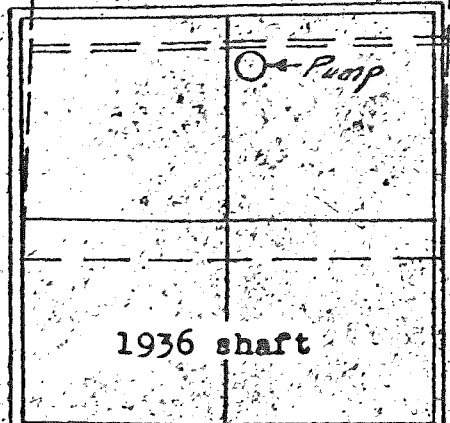
A more complete report will be obtained at a little lower depth.

POSITION AT 100'

Sketch from 100-0 to 101-6" at bottom of shaft.

shaft deflected 4-6" as shown in dotted line

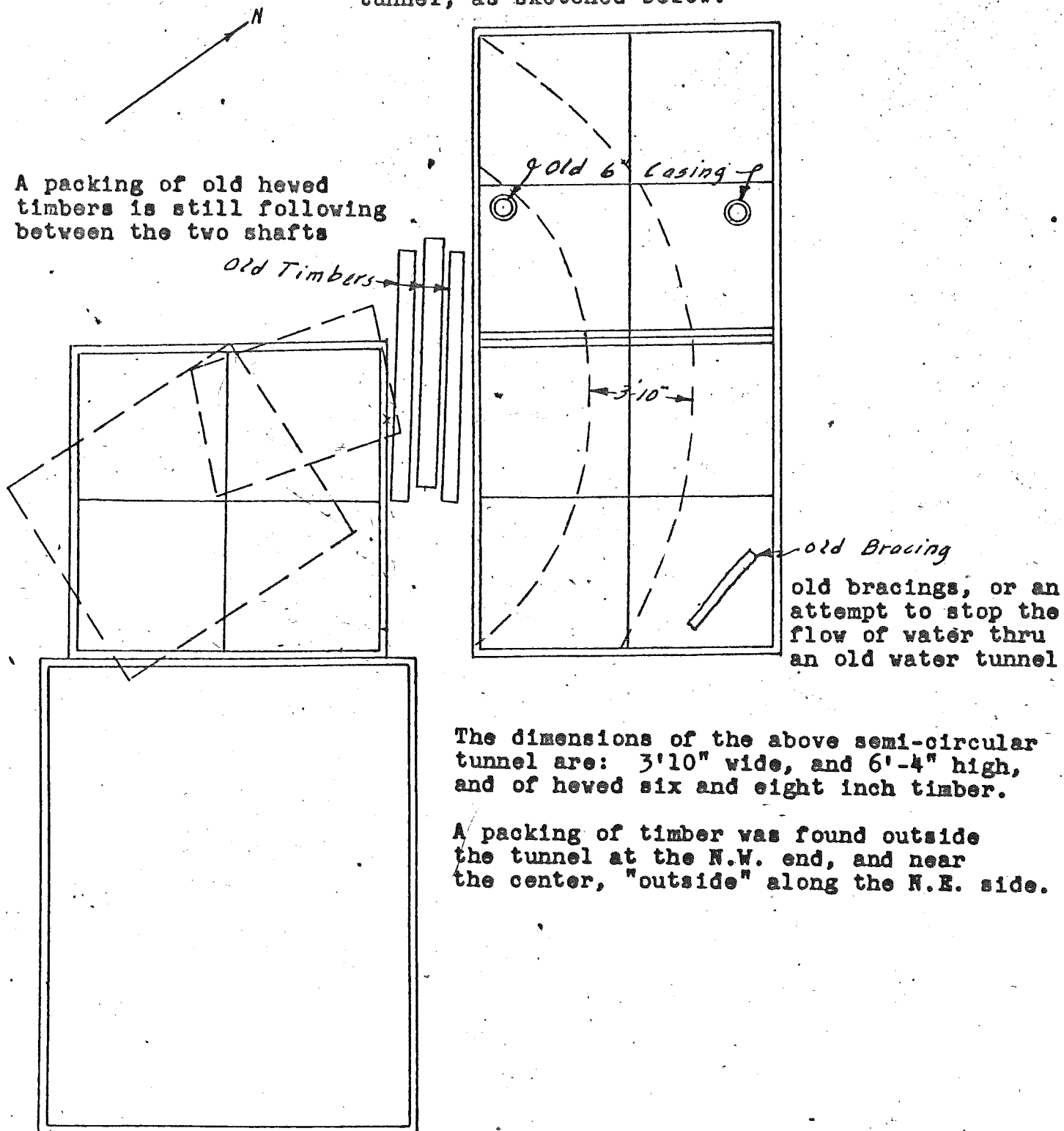
old Timbers packed between shafts.



Circular tunnel cutting across shaft as shown in above sketch.

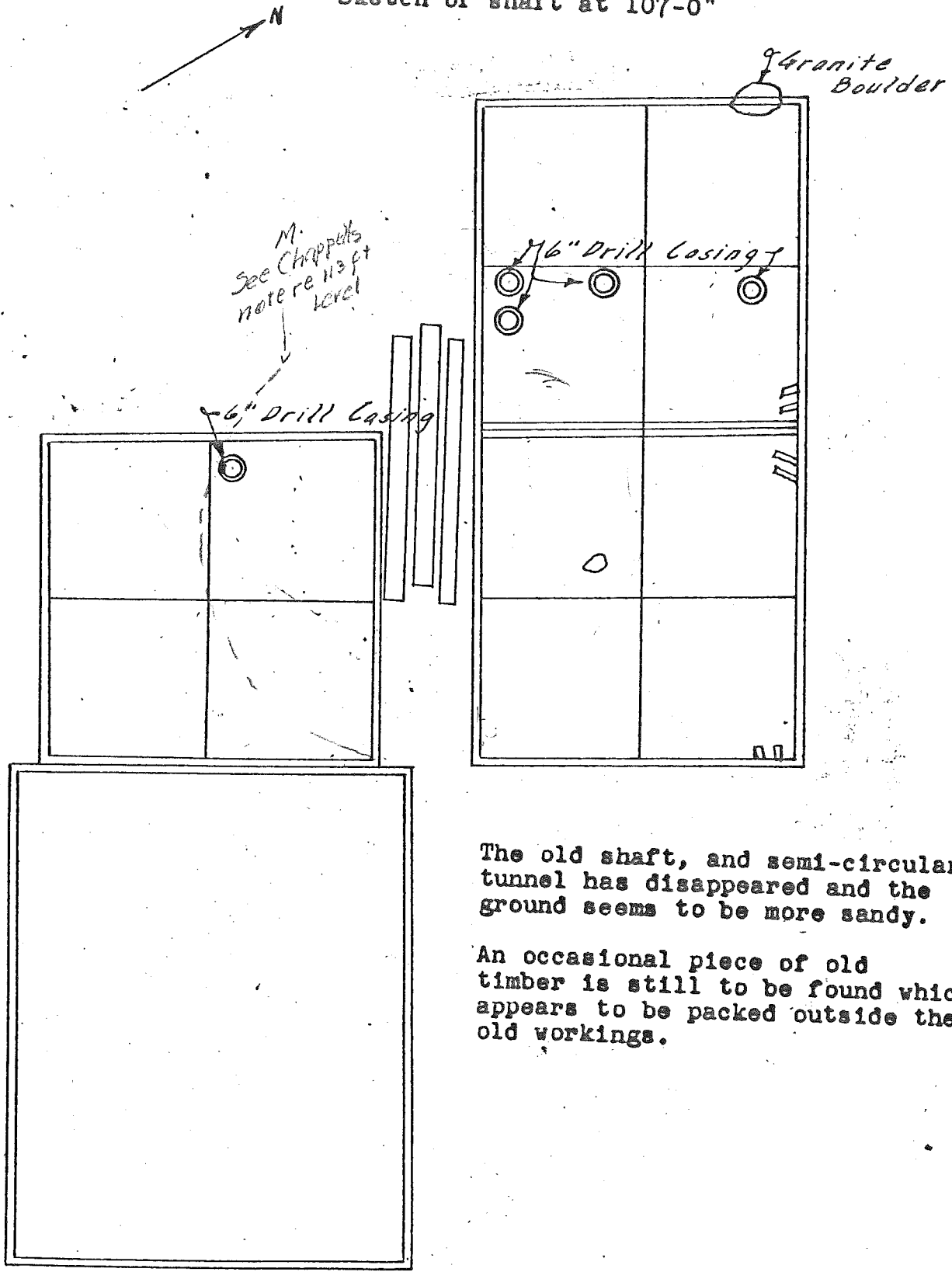
POSITION AT 101'-6"

Sketch of shaft at 102-0 showing outline of an old semi-circular tunnel, as sketched below.



POSITION AT 102'

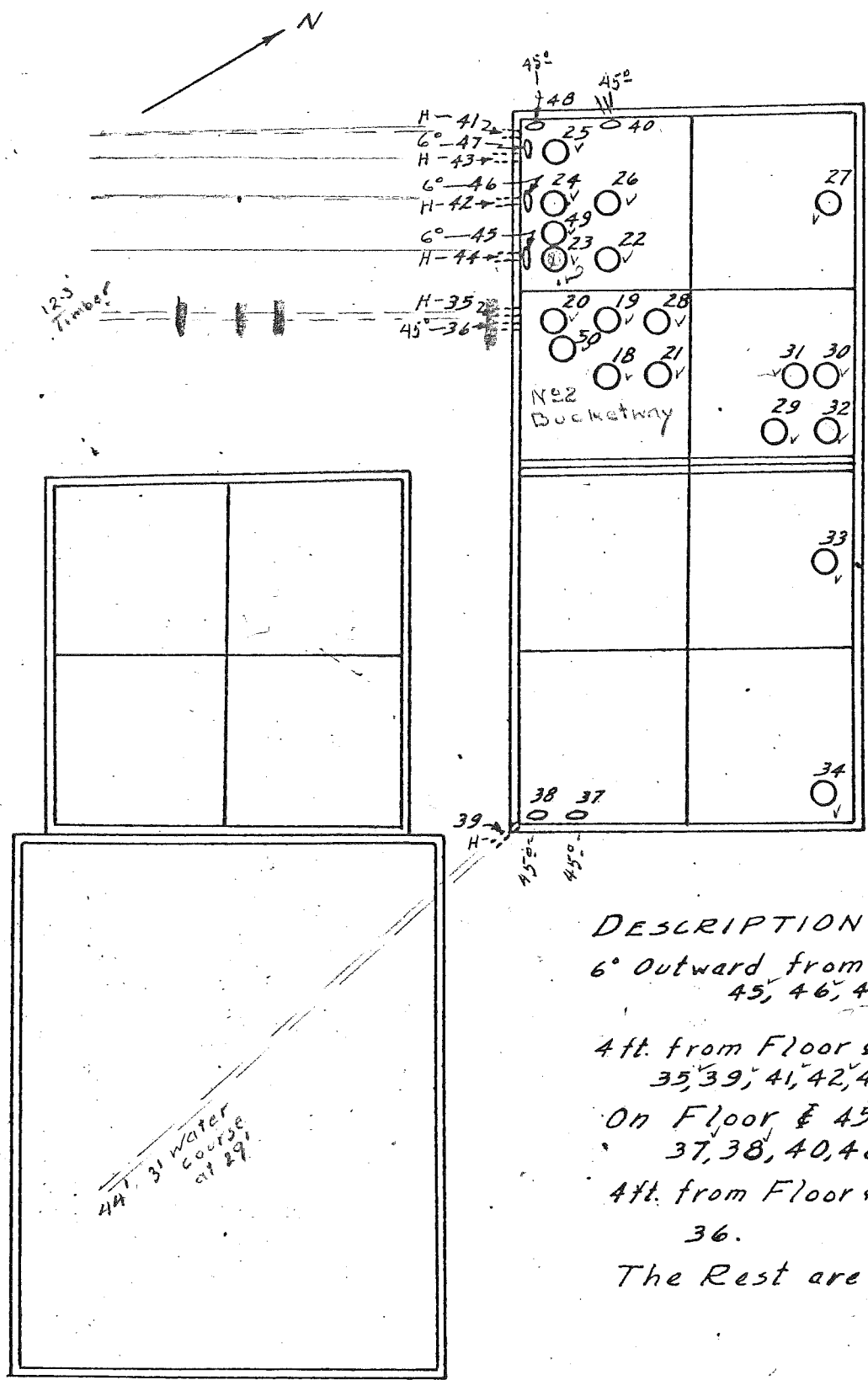
Sketch of shaft at 107-0"



The old shaft, and semi-circular tunnel has disappeared and the ground seems to be more sandy.

An occasional piece of old timber is still to be found which appears to be packed outside the old workings.

POSITION AT 107

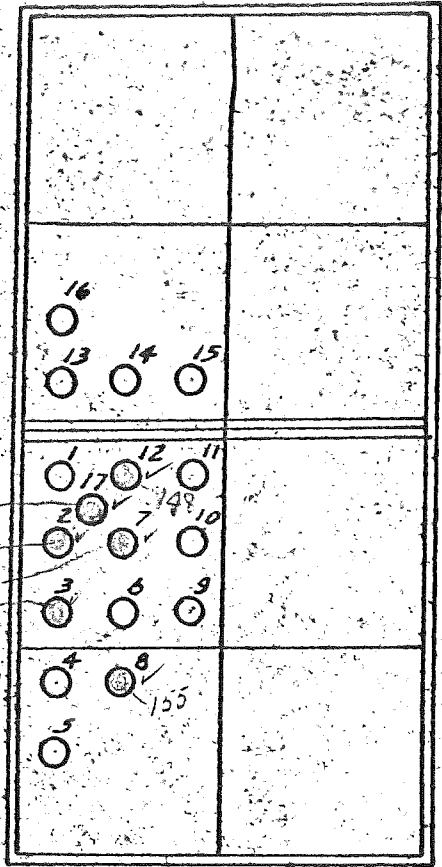


DESCRIPTION OF HOLES
 6° outward from Vertical Axis
 45, 46, 47
 4ft. from Floor & Horizontal
 35, 39, 41, 42, 43, 44
 On Floor & 45° Outward
 37, 38, 40, 48
 4ft. from Floor & 45° Outward
 36
 The Rest are Vertical.

FLOOR AT 121'-6"



150
152.6
154.2
160

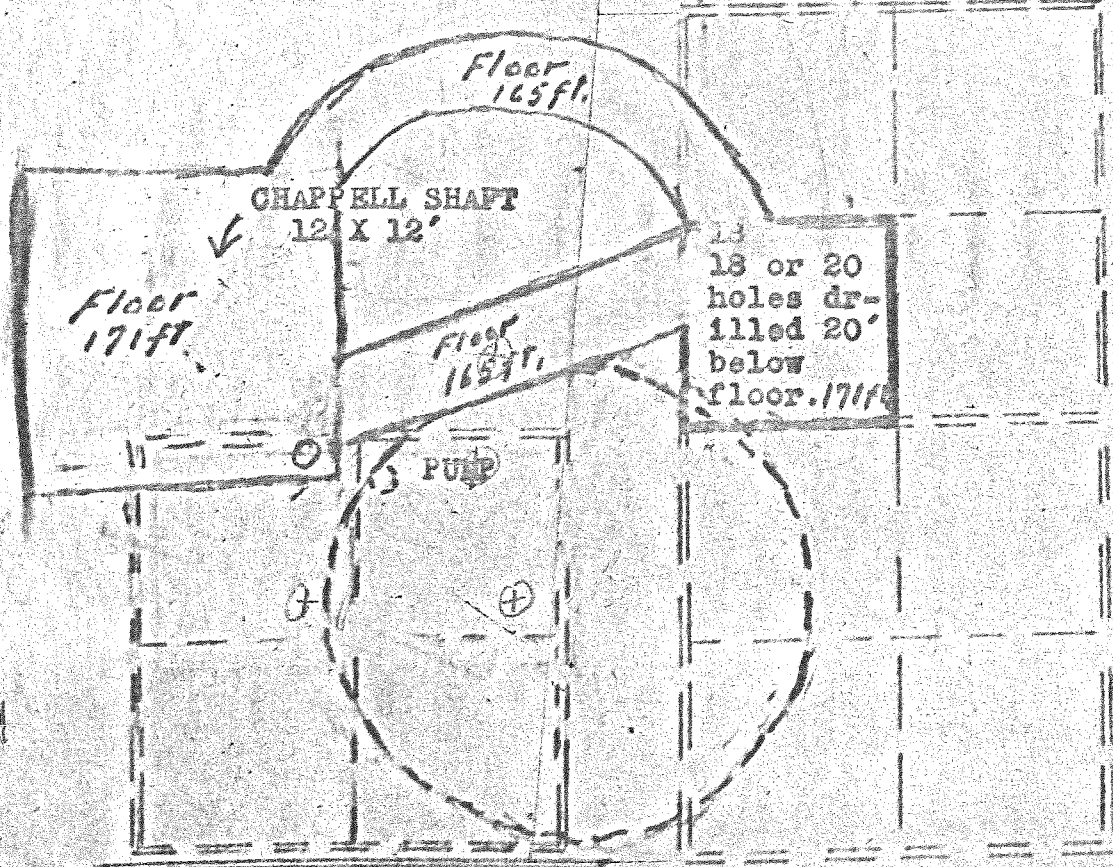


ALL VERTICAL

FLOOR AT 121'-6"

Tunnels dug by Hamilton Floor is at 165 feet.

HEDDEN SHAFT 12 X 24'



The 6X6' compartment in the Hedden Shaft was deepened from 121' to 170'.

The floors in both shafts were in solid ground.

The holes drilled in the bottom of this shaft were in part inclined to the SW but not inclined more than 10°. They penetrated gravel and soft material.

This data was obtained from Mr. Erwin Hamilton June 29, 1950. J. W. Lewis.

Broken lines show position of shafts at the surface.

Solid lines show position of shafts at 170' which is the approximate maximum depth in both shafts.

Mr. Hamilton states that the depths indicated in this sketch refer to the distances below the natural ground level, at the fence which surrounds the sunken ground of the Money Pit, and not at the shaft collars. J.W.L.

POSITION AT 170'

Mr. Hamilton
Furnished this
Data 38

" DRILL HOLE REPORTS "

Hole #1 *Vertical*
August 27, 1937

*Below collar of Drill or
about 3ft. above
floor at 121'6"
Level*

| | | |
|-------|---------------------------|------|
| 27.0 | 2 1/2" Pipe Sand | 27.0 |
| | Layer hard sand | 27.0 |
| 2.6 | Open space. Very soft mud | 29.6 |
| 2.0 | Hard layer sand | 31.6 |
| 7.6 | Hard layer sand | 39.0 |
| 1.6 | Soft mud | 40.6 |
| 1.6 | Hard clay or mud | 42.0 |
| ***** | | |

Hole #2 *Vertical*
August 28, 1937

(Open space from 26' to 29')

| | | |
|-------|----------------------|------|
| 21.3" | 2 1/2" Casing Sand | 21.3 |
| 4.9 | Sand | 26.0 |
| 3.0 | Open water course | 29.0 |
| 1.0 | Layer hard mud | 30.0 |
| 1.0 | <u>Wood</u> | 31.0 |
| 8.0 | Soft mud | 39.0 |
| 2.0 | Mud and small stones | 41.0 |
| ***** | | |

Hole #3 *Vertical*
August 31, 1937

(Open space from 15' to 17')

| | | |
|-------|----------------------|------|
| 21.3" | 2 1/2" Casing Sand | 21.3 |
| 9.0 | Sand | 30.3 |
| .9 | Decomposed limestone | 31.0 |
| 8.0 | Sand and mud | 39.0 |
| 0.3 | <u>Wood</u> | 39.3 |
| 1.0 | Mud | 41.0 |
| ***** | | |

Hole #4 *Vertical*
August 31, 1937

| | | |
|-------|------------------------|------|
| 13.0 | Hard Sand | 13.0 |
| 1.0 | Soft mud, water way. | 14.0 |
| 10.0 | Hard Sand | 24.0 |
| 5.0 | Mud and sand, hard. | 29.0 |
| 2.0 | Limestone | 31.0 |
| 1.0 | Sand, hard. | 32.0 |
| 0.6 | Stones | 32.6 |
| 1.6 | Soft mud, water way | 34.0 |
| 6.6 | Mud with soft streaks. | 40.6 |
| ***** | | |

Hole #5 *Vertical*
September 1, 1937

| | | |
|-------|-----------|------|
| 11.0 | Hard Sand | 11.0 |
| 13.0 | Hard Sand | 24.0 |
| ***** | | |

Hole #6 *Vertical*
September 2, 1937

| | | |
|-------|-------------------|------|
| 11.0 | Casing. Hard Sand | 11.0 |
| 4.0 | Hard Sand | 15.0 |
| 1.0 | Mud | 16.0 |
| 13.0 | Hard sand | 29.0 |
| 1.0 | Mud, soft. | 30.0 |
| 5.0 | Hard sand | 35.0 |
| 5.0 | Soft mud | 40.0 |
| ***** | | |

Hole #7 *Vertical*
September 3, 1937

| | | |
|-------|----------------|------|
| 27.0 | Hard sand | 27.0 |
| 1.0 | Mud seam | 28.0 |
| 2.0 | Hard sand | 30.0 |
| 1.0 | Limestone | 31.0 |
| 2.0 | Hard sand | 33.0 |
| 0.2 | Wood | 33.2 |
| 7.0 | Very soft sand | 40.2 |
| ***** | | |

Hole #8 *Vertical*
September 4, 1937

| | | |
|-------|----------------------|------|
| 15.6 | Hard sand | 15.6 |
| 0.6 | Mud seam, last water | 16.0 |
| 15.0 | Hard sand | 31.0 |
| 2.0 | Hard sand | 33.0 |
| 0.3 | Edge of timber | 33.3 |
| 1.3 | Soft space | 34.6 |
| 6.6 | Soft mud | 41.0 |
| ***** | | |

Hole #9 *Vertical*
September 6, 1937

| | | |
|-------|---------------------|------|
| 16.0 | Hard sand | 16.0 |
| 1.0 | Mud seam | 17.0 |
| 4.6 | Hard sand | 21.6 |
| 3.0 | Limestone | 24.6 |
| 6.6 | Hard sand & cobbles | 31.0 |
| 9.6 | Hard sand and clay | 40.6 |
| ***** | | |

Hole #10 *Vertical*
September 7, 1937

(Casing driven 21'0")

| | | |
|------|----------------------------------|------|
| 26.0 | Hard Sand | |
| 0.8 | Limestone | 26.8 |
| 3.4 | Soft mud | 30.0 |
| 11.0 | Layers of sand with soft streaks | 41.0 |

(8" Limestone core recovered.)

Hole #11 *Vertical*
September 8, 1937

(2 1/2" Casing driven 21.0)

| | | |
|------|---------------------|------|
| 26.0 | Hard sand | 26.0 |
| 3.0 | Soft mud | 29.0 |
| 8.0 | Hard layers of sand | 37.0 |
| 4.0 | Softer sand | 41.0 |

(Nothing recovered.)

Hole #12 *Vertical*
September 9, 1937

(Casing driven 21')

| | | |
|-------|------------------------|------|
| 23.0 | Hard sand | 23.0 |
| 1.6 | Soft mud | 24.6 |
| ✓ 2.6 | <u>Wood</u> | 27.0 |
| 4.0 | Hard Sand | 31.0 |
| 3.0 | Soft mud | 34.0 |
| 7.0 | Sand and mud in layers | 41.0 |

Hole #13 *Vertical*
September 10, 1937

(21'-0" -- 2 1/2" Casing)

| | | |
|------|----------------------|------|
| 26.0 | Hard sand | 26.0 |
| 1.0 | Mud, soft. | 27.0 |
| 0.6 | Limestone | 27.6 |
| 5.0 | Hard sand | 32.6 |
| 0.8 | Limestone | 33.2 |
| 2.0 | Hard sand | 35.2 |
| 2.0 | Soft mud | 37.2 |
| 4.4 | Hard and soft layers | 41.6 |

Hole #14
September 11, 1937

Vertical

(Drove 2 1/2" casing 21'.)

| | | |
|-------|-------------------------------|------|
| 24.0 | Hard sand | 24.0 |
| 1.0 | Soft mud | 25.0 |
| 2.0 | Hard sand | 27.0 |
| 4.0 | Soft mud | 31.0 |
| 10.0 | Hard and soft layers of sand. | 41.0 |
| ***** | | |

Hole #15
September 13, 1937

Vertical

(Drove 2 1/2" casing 21'.)

| | | |
|-------|----------------------|------|
| 21.0 | Hard sand | 21.0 |
| 3.0 | Soft mud | 24.0 |
| 10.0 | Hard sand | 34.0 |
| 7.0 | Soft and hard layers | 41.0 |
| ***** | | |

Hole #16
September 18, 1937

Vertical

(Drove 2 1/2" casing 21'.)

| | | |
|-------|------------------------|------|
| 31.0 | Hard sand | 31.0 |
| 3.0 | Soft mud | 34.0 |
| 7.0 | Sand and mud in layers | 41.0 |
| ***** | | |

Hole #17
September 20, 1938

Vertical

(Drove 2 1/2" casing 21'.)

| | | |
|-------|-----------------------|------|
| 22.0 | Hard sand | 22.0 |
| 4.4 | Open space | 26.4 |
| 0.8 | Hard sand | 27.0 |
| 1.6 | Wood | 28.6 |
| 3.6 | Hard sand | 32.0 |
| 3.6 | Very soft bit dripped | 35.6 |
| 6.0 | Hard and soft layers | 41.6 |
| ***** | | |

149'

#18 Hole.
July 28, 1938

Vertical

Drove 2 1/2" casing 26' 9".

| | | |
|------|----------------------|------|
| 13.0 | Hard sand. | 13.0 |
| 2.0 | Mud seam | 15.0 |
| 8.0 | Mud seams and sand | 23.0 |
| 7.0 | Hard sand | 30.0 |
| 2.0 | Mud seam. "rods fell | 32.0 |
| 1.0 | Hard sand | 33.0 |
| 1.0 | Soft mud | 34.0 |
| 3.0 | Hard sand | 37.0 |
| 2.0 | Soft mud | 39.0 |
| 4.9 | Hard | 43.9 |

Hole #19
July 29, 1938

Vertical

Drove 25 ft. 2 1/2" casing.

| | | |
|------|---------------------|------|
| 25.0 | Hard sand | 25.0 |
| 3.0 | Soft mud | 28.0 |
| 5.0 | Drills washed down. | 33.0 |
| 3.0 | Soft sand. | 36.0 |
| 3.0 | Hard sand. | 39.0 |
| 5.0 | Soft sand, or mud. | 44.0 |

Hole #20
July 30, 1938

Vertical

Drove 26'.0 2 1/2" Casing.

| | | |
|------|---|------|
| 30.0 | Hard sand "inlayers with soft seams of mud. | 30.0 |
| 6.0 | Very soft. "washed down" | 36.0 |
| 4.0 | Soft sand | 40.0 |
| 2.6 | Hard sand | 42.6 |
| 5.6 | Soft sand & mud. | 48.0 |

Hole #21
August 1, 1938

Vertical

Drove 34.0 2 1/2" casings

| | | |
|------|-------------------------------------|------|
| 30.0 | Sand, in hard layers with mud seams | 30.0 |
| 4.0 | Soft layer sand. | 34.0 |
| 1.0 | Hard layer of sand. | 35.0 |
| 3.0 | Drills dropped, "washed down" | 38.0 |
| 10.0 | Sand, " with soft layers. | 48.0 |
| 3.0 | Hard layer sand. | 51.0 |
| 0.6 | Limestone | 51.6 |
| 2.6 | Layer of sand "rather soft". | 54.0 |

Hole #22 *Vertical*
August 2, 1938

Drove 31.0 2 1/2" casings.

| | |
|--|------|
| 31.0 Sand in hard layers, "with mud seams" | 31.0 |
| 11.0 Sand, "hard". | 42.0 |
| 4.0 Sand & mud, "very soft" | 46.0 |
| 2.6 Hard sand. | 48.6 |

Hole #23 *Vertical*
August 2, 1938

Drove 26.6" 2 1/2" casings.

| | |
|--|------|
| 26.6" hard sand in layers" with small mud seams", | 26.6 |
| 1.6 Soft sand | 28.0 |
| ✓ 0.6 Apparently <u>wood</u> . Chopped thru. (no core) | 28.6 |
| 13.6 Hard sand | 42.0 |
| 4.0 Very soft (Drills washed down) | 46.0 |
| 2.6 Hard sand | 48.6 |

Hole #24 *Vertical*
August 2, 1938

Drove 23.6 2 1/2" casings.

| | |
|--|-------|
| 26.00 Hard sand in layers: with mud seams. | 26.00 |
| 7.0 Hard sand in layers; with mud seams. | 33.00 |
| 0.6 Lo se limestone. (floating) | 33.6 |
| 7.6 Hard Sand | 41.0 |
| 3.9 Soft. "Drills washed down" | 44.9 |
| 0.3 Limestone | 45.0 |

Hole #25 August 3, 1938 *Vertical*
Drove 25.0 2 1/2" casings.

| | |
|---|------|
| 34.0 Hard sand, with occasional small mud seams | 34.0 |
| 3.0 Soft mud. Drills washed down. | 37.0 |
| 9.6 Hard sand | 46.6 |
| 1.0 Limestone. | 47.6 |

Hole #26 *Vertical*
August 4, 1938

Drove 23.0 2 1/2" casings

| | |
|------------------------------------|------|
| 33.0 Hard sand with mud seams | 33.0 |
| 4.0 Soft sand. | 37.0 |
| 0.6 Limestone: (Floating) | 37.6 |
| 4.6 sand. In hard and soft layers. | 42.0 |
| 1.0 Limestone. | 43.0 |

Hole #27
August 4, 1938

Drove 21.0 2 1/2" Caseings.

| | |
|--|------|
| 30.0 Hard sand with mud seams "in layers." | 30.0 |
| 2.0 Mud seam. "Rods washed down". | 32.0 |
| 10.0 Hard sand | 42.0 |
| ***** | |

Hole #28
August 4, 1938

Drove 23.0 2 1/2" caseing.

| | |
|---------------------|------|
| 30.0 Hard sand | 30.0 |
| 1.0 Soft mud | 31.0 |
| 4.0 Soft sand | 35.0 |
| 2.0 Hard layer sand | 37.0 |
| 2.0 Soft sand mud | 39.0 |
| 3.0 Hard layer sand | 42.0 |
| 3.0 Limestone | 45.0 |
| ***** | |

Hole #29
August 6, 1938

Drove 26.0 2 1/2" caseing

| | |
|-----------------------------------|------|
| 30.0 Hard sand | 30.0 |
| 2.0 Soft, bits washed | 32.0 |
| 15.3 Sand in hard and soft layers | 47.3 |
| 0.9 Limestone | 48.0 |
| ***** | |

Hole #30
August 6, 1938

Drove 33.0 2 1/2" caseing 33.0

| | |
|---|------|
| 30.0 very soft | 30.0 |
| 3.0 Hard Iron cuttings | 33.0 |
| This hole ran into an old 6" drill casing which sprung our casing out of line. | |
| ***** | |

Hole #31
August 8, 1938

Drove 23.0 2 1/2" caseing 23.0

| | |
|--------------------------|------|
| 6.0 Soft, "Drills washed | 29.0 |
| 8.0 Hard and gravel | 37.0 |
| 2.0 Soft Drills washed | 39.0 |
| 1.6 Hard sand in layers | 40.6 |
| 2.6 Limestone | 43.0 |
| ***** | |

Hole #32 *Vertical*
August 8, 1938

Drove 25.0 2 1/2" Caseing 25.0

| | |
|--|------|
| 46.0 Hard sand and coarse gravel in layers | 46.6 |
| 0.6 Limestone | 47.0 |
| ***** | |

Hole #33 *Vertical*
August 9, 1938

Drove 23.0 2 1/2" caseing 23.0

| | |
|-----------------------------------|------|
| 34.0 Hard sand with layers of mud | 34.0 |
| 2.0 Soft. Drills washed down | 36.0 |
| 5.0 Hard packed sand | 41.0 |
| 1.0 Soft. Drills washed down | 42.0 |
| 1.0 Hard packed sand | 43.0 |
| 2.6 Limestone | 45.6 |
| ***** | |

Hole #34 *Vertical*
August 10, 1938

21.0ft. 2 1/2" caseing drove. 21.0

| | |
|-----------------------------------|------|
| 12.0 Hard sand, and Coarse gravel | 33.0 |
| 0.3 Brown Limestone: "floating" | 33.3 |
| 9.3 Hard sand, with mud seams. | 42.6 |
| 0.6 Limestone | 43.0 |
| ***** | |

Hole #35 *Horizontal*
August 11, 1938

Drilled horizontal, above shoe from #2 bucket way.

| | |
|---|------|
| 0.6 Spruce wall timber in new shaft. | |
| 1.0 Mud | 1.6 |
| 0.6 <u>Old timber</u> | 2.0 |
| 3.0 Mud | 5.0 |
| 0.6 Old timber | 5.6 |
| 6.9 <u>Timber, drilled on steep angle (end)</u> | 12.3 |
| 0.10 <u>Spruce timber</u> | 13.1 |
| 0.5 Boulder | 13.6 |
| 26.6 Mud, Gravel and Sand. | 40.0 |
| ***** | |

Chappell
1939

Hole #35-A *See above hole*

Started from above set up and struck large boulder at 5.6 and abanded to set up on above hole" or #35.

| | |
|--|-----|
| 0.6 <u>Spruce wall timber</u> in new shaft | 0.6 |
| 1.0 Mud | 1.6 |
| 0.6 <u>Old timber</u> | 2.0 |
| 3.0 Mud | 5.0 |
| 0.6 Old timber, "spruce". | 5.6 |
| ***** | |

Hole #36 45° SW
August 16, 1938

(This hole started on a 45 degree angle above)
(the shoe in #2 bucketway along wall of new)
(shaft near the pump shaft.)

| | | |
|------|--|------|
| 0.6 | Spruce timber, "sidewall of new shaft. | 0.6 |
| 1.10 | Mud and cobbles | 2.4 |
| 1.8 | Old timber on end | 4.0 |
| 2.0 | Cobbles | 6.0 |
| 0.6 | Old timber | 6.6 |
| 0.6 | Cobbles. | 7.0 |
| 1.0 | Mud | 8.0 |
| 0.6 | Old Timber | 8.6 |
| 0.6 | Boulders | 9.0 |
| 0.6 | Old timber | 9.6 |
| 1.6 | Mud | 11.0 |
| 0.6 | Old timber | 11.6 |
| 1.6 | Boulders | 13.0 |
| 0.6 | Old timber | 13.6 |
| 4.0 | Thru boulders and mud. | 17.6 |

Came up against large boulder and after working one full shift, and twisting off both the casing and core barrel, and two chopping bits we abanded this hole and moved on another hole.

Hole #37
August 17, 1938

Drilled on a 45 degree angle, under the shoe in the South east section of new shaft; "under ladderway, and pointing in direct line with shaft, (2 Ft. from sidewall near pump shaft)

| | | |
|------|---|------|
| 38.0 | Hard sand, small boulders, and coarse gravel | 38.0 |
| 3.0 | Soft, "Drills washed down when rotated by hand." | 41.0 |
| 1.0 | Hard sand. | 42.0 |
| 2.0 | Soft. "Drills washed down, when rotated by hand." | 44.0 |
| 4.6 | Hard sand; coarse gravel | 48.6 |
| 1.6 | Limestone | 50.0 |

Hole #38
August 18, 1938

Drilled in South East section of new shaft under ladder way, and on a 45 degree angle downward under the shoe. The hole also angled almost in the corner passing corner of old pump shaft under the 1936 hoist house.

| | | |
|------|---|------|
| 31.0 | Hard sand, and coarse gravel | 31.0 |
| 3.0 | Soft "Drills washed down when rotated by hand." | 34.0 |
| 2.0 | Hard sand | 36.0 |
| 3.0 | Soft, Drills washed down by hand | 39.0 |
| 7.0 | In hard and soft layers. | 46.0 |

Hole #39
August 19, 1938

Horizontal South

Hole drilled from same set up as #38, except it was drilled Horizontal above the shoe, Its course was same as above hole.

| | | |
|-------|---|------|
| 12.0 | Hard sand and coarse gravel | 12.0 |
| 2.0 | Soft mud. | 14.0 |
| 12.0 | Hard sand and coarse gravel | 26.0 |
| 3.0 | Soft. (water course) | 29.0 |
| 15.0 | Hard and soft layers, sand and mud. (Took out 1.4" mud core) | 44.0 |
| ***** | | |

Hole #40
August 19, 1938

Drilled from South West compartment of new shaft on a 45 degree angle below the shoe-pointing slightly off a direct line with shaft towards the corner, and pointing about in line with south corner of fence surrounding the transformers.

| | | |
|-------|-----------------------------|------|
| 34.0 | Hard sand and coarse gravel | 34.0 |
| 0.6 | Piece of floating stone | 34.6 |
| 10.6 | Hard sand and coarse gravel | 45.0 |
| ***** | | |

Hole #41
August 20, 1938

Horizontal S.W

Drilled Horizontal "above shoe" 0.6 from corner on long sidewall of new shaft, pointing diagonal across the South West section of shaft.

| | | |
|-------|-------------------------------------|------|
| 20.6 | Hard sand and gravel | 20.6 |
| 18.6 | Very soft, Drills washed in by hand | 39.0 |
| ***** | | |

Hole #42
August 22, 1938

Horizontal S.W

Drilled horizontal above shoe along first set of braceings next the #2 hoist way, and pointing towards the #2 Dump.

| | | |
|-------|-----------------------------|------|
| 42.0 | Hard sand and coarse gravel | 42.0 |
| ***** | | |

Hole #43
August 22, 1938

Horizontal S.W

Drilled horizontal in South West section of new shaft, in a direction at right angles with shaft "in center of the section just above shoe.

| | | |
|-------|------------------------------|------|
| 44.0 | Hard sand, and coarse gravel | 44.0 |
| ***** | | |

ENGINEERING DATA

Water Pressures

For brackish water

| Head in feet | Pressure in Pounds per sq. inch |
|--------------------|--|
| 1 | 0.5 |
| 55 | 27.5 |
| 75 | 37.5 |
| 160 | 80.0 |

Flow through pipes

500 gal. per minuite

| Pipe diameter in inches | Velocity in second ft. |
|----------------------------|---------------------------|
| 8 | 3.20 |
| 10 | 2.04 |
| 12 | 1.50 |

Tunnel (rock filled)

Diameter $2\frac{1}{2}$ ft.
 Area Cross-section 5 sq. ft.
 Max voids 44%
 Voids per liniar ft. 2.2 Cu. ft.

Cement

1 bag weighs 94 lbs.
 4 bags fill one barrel
 1 barrel weighs 376 lbs
 and contains 3.8 cu.ft.

Sp. G. Gold 19.3 - Silver 10.5
 Sea Water freezes at 28° or 29°F