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HILLEN BROWNING SCRIPPS
BATHING POOL FOR CHILDREN
at La Jolla, California

FEATURE HISTORY

March 1931

Hiram Newton Savage
Engineer

205,000
5016

5-28-31

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This Bathing Pool is an outstanding
characteristic donation

by

MISS ELLEN BROWNING SCRIPPS

for the advancement of the
health and happiness

of

children

Layout, design, administrative
and executive accomplishment of
the feature and all structures
donated by

H. N. Savage
Consulting Engineer

Harold Wood C.E.
Resident Engineer

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5-28-31

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FORN ORD

Prominent among the many splendid gratuities which Miss Ellen Browning Scripps has donated to the public is a bathing pool for children which she has just accomplished in the Pacific Ocean at La Jolla, California.

The pool is protected from the ocean surf and winds by a concrete reinforced breakwater three hundred feet long with its top twelve feet above mean sea level and the deepest portion of foundation eight feet below mean sea level. The breakwater extends from a bluff at the edge of the ocean out in a sweeping curve to the right along a natural low barrier reef between the pool and the ocean.

Access to the pool is provided for by the construction of concrete reinforced stairways from the top of the bluff down to the sand beach, also from the top of the bluff down to the wide walkway which extends along the top of the entire breakwater. The inside of the breakwater is terraced making access from the walkway along the entire length of the breakwater inside down to the sand beach.

The park area on the bluff adjoining the pool was improved by grading and the construction of parapet walls, and curbs. shrubs have been planted and benches provided.

The pool, even before its completion, and increasingly since, is being used daily by children of local residents and visitors.

ELLEN BROWNING SCRIPPS
Bathing Pool for Children
at La Jolla, California

(a) Location

The Ellen Browning Scripps bathing pool for children opposite Casa de Manana, at La Jolla, California, is protected by a breakwater located on the outcroppings of a natural barrier reef curving seaward from a bluff at the edge of the Pacific Ocean.

(b) Purpose

The purpose of the project is to create a safe bathing pool for children, sheltered from the ocean surf and winds.

(c) Description

Breakwater: The breakwater, 303.6 feet long, is composed of reinforced concrete curved seaward in plan. (See Photograph B P 49). The section averages about 10 feet high for 79 per cent of its length and 16 feet high the balance of its length, has a level crown of 5 foot width at elevation 12. U.S.G.S. Datum. The ocean side has a slope of 10 on 6 to a point 6 feet below the top and an 8 foot radius curved upper portion designed to turn the wave back on itself. The pool side has an average slope of 1 on 1 divided into steps 18 inches high and 18 inches wide. These steps are intended to facilitate the children in climbing around the pool side of the breakwater and also to serve as seats. At three places along the length of the breakwater on the pool side, pilasters 4 feet wide have been built and fitted with wrought iron ladder steps to enable children climbing up the pool side steps to gain access to the walkway on top of the structure. A step 8 feet long with hand railing is also provided.

Railing: The top of the breakwater has parallel pipe railings set 4 feet apart and across the end. The railing is composed

of 2 inch galvanized pipe and is 3 feet high with a horizontal rail 18 inches from the top of the breakwater. The vertical posts are set about 8 feet apart.

Sluiceways: 4 sluiceways, 4 feet wide by 6 feet high, have been built thru the shore end of the breakwater. They are spaced 8 feet center to center. Recesses in the concrete were formed for gates or flashboards.

Cable: A 1 inch diameter cable is stretched across the open side of the pool, ^{from the center} wrought iron "U" bolt set into the end of the breakwater to an anchor bolt set into the face of the cliff at the shore. Pendent ropes about 8 feet apart hang into the water from this cable.

Steps to breakwater: At the southerly or shoreward end of the breakwater reinforced concrete steps have been constructed up the slope from the crown of the breakwater to the top of the adjacent bluff or mesa to give easy access to the walkway on top of the structure.

Stairway: A stairway structure has been constructed of reinforced concrete into the face of the bluff above the beach.

Drainage: The elevation of the top of this structure and the adjacent area of the bluff has been made higher than that at Coast Boulevard to enable all drainage to find its way to the catch basins opposite Casa de Manana and thence to the concrete storm drain, thus eliminating the ugly washes which have occurred where the drainage has found its way down the bluff toward the beach. The storm drain adjacent to the easterly limit of the work was extended and a standard curb inlet constructed in the west curb. A catch basin near the westerly portion of the work was constructed, a

cleanout box or manhole was constructed and a 15 inch storm drain built to discharge this drainage to the west of the pool.

INVESTIGATIONS AND SURVEYS

(a) Preliminary Investigations: In response to successive requests from Miss Scripps Mr. H. N. Savage had preliminary surveys made for this breakwater and a report dated March 22, 1923 was submitted on the feasibility, practicability and estimated cost of a Bathing Pool at La Jolla. This report contained details of a number of the world's most important breakwaters and summarized the studies of these structures. From the surveys made in 1922, detailed plan and sectional drawings were prepared. The location of the structure was carefully considered relative to its purpose, foundation conditions, topography and economy of design and further investigations made in July 1930 did not justify any changes from the original plans.

Topography: A reef of sandstone at an average elevation of about 2 feet above mean sea level, extends in a series of parallel ribs almost continuously in a general arc curving seaward from about 50 feet from the extreme point of the bluff to about 200 feet northerly from the shore, at the easterly end of the crescent shaped beach. The intervening channel, between the most southerly of the rocks and the bluff, is about 50 feet wide with nearly vertical sides and an average depth of 3 feet below mean sea level.

Geology: The coast line is composed of sandstone with some hard boulders of igneous rocks embedded. Lower down at about elevation 4 above mean sea level the rock is finer grained in thinner layers and more closely approaches a true shale structure.

These layers dip about 3 degrees to the southwest. A series of weak fractures, more easily eroded, extend in a northeasterly and southwesterly direction thru the mass of these sedimentary rocks which accounts for the nearly parallel rib-like appearance of the reef. The sea has eroded deep caves into the bluff which enhances the beauty of the coast line.

(b) Foundation Investigations: Six borings were made along the axis of the channel between the point of the bluff and the southerly end of the reef. These borings were made about 20 feet apart and disclosed sandstone at an average depth of about 8 feet below mean sea level. (See sheet 3 of 6 of drawings "Borings"). The rock of the reef for 79 per cent of the 304 feet length of the breakwater averages 2 feet above mean sea level and hence is exposed to view at low tide. This rock reef is sandstone.

(c) Determination of Site: The crescent shaped beach behind the reef has been a popular place for children to play and bathe. Bathing however was dangerous and prohibited at high tide. The improvement as built was the logical development to increase their enjoyment and safety. The site is naturally somewhat protected but a dangerous undertow at the northerly end of the reef has already taken toll of human life. The cable with pendent hand lines is intended to care for this in the future. By deepening the bottom of the pool adjacent to the reef, removing the boulders from the bottom and sloping the sand, an ideal outdoor safe swimming pool has been created about 160 feet by 180 feet, with ample sand beach. The sheltered water behind the breakwater may now be enjoyed at all times. The breakwater structure affords a place for children to climb and play.

(d) Structures: The details of the structures are shown by the attached drawings and specifications which were prepared under the personal supervision of Mr. H. N. Savage.

(e) Approval of designs and specifications: The drawings of the section for the breakwater were signed by Mr. Savage on June 27, 1930, and the final plan on July 15, 1930. Draft of contract and specifications were completed on June 26, 1930. On July 22 a drawing of the dressing stalls was received from the architect, Wm. Templeton Johnson. The specifications and contract were amended on August 13, 1930 to include the above additions.

Major Wm. H. Lanagan, District Engineer officer for the United States War Department of Los Angeles, visited the site with Mr. Savage and tentatively approved the design and location. Mr. Schofield representing Merritt-Chapman & Scott of San Pedro also reviewed the plans on the ground with Mr. Savage on July 10, 1930 and expressed the opinion that the designs of the breakwater were well chosen for this location for permanency and economy.

July 21, 1930, Wm. Templeton Johnson reported that, accompanied by Colonel Bent, Colonel Robins and Major Borden, U. S. Engineer Officers, a joint inspection was made of the projected breakwater with the result that the Engineer Officers concluded and unanimously announced that provided the breakwater was constructed as designed, it would stay until "Kingdom Come".

(f) Authority for work: A bathing zone breakwater, to cost about \$70,000, was authorized by Ellen Browning Scripps thru Dr. J. C. Harper, Attorney-in-fact for Miss Scripps, on June 20, 1930, at which time Mr. H. N. Savage was duly appointed engineer for Ellen Browning Scripps. On June 21, 1930, formal applications for

the construction were signed by Dr. J. C. Harper as Attorney-in-fact for Miss Scripps. The formal applications were mailed on June 26, 1930, to the following:

1. U. S. War Department
2. State of California
3. City of San Diego
4. Park Commissioners
5. Playground Commissioners

Approvals for the construction were received as follows:

City of San Diego by resolution 54177 passed June 30, 1930

Playground Commissioners, by letter to Dr. J. C. Harper dated July 11, 1930

Park Commissioners by resolution passed July 24, 1930

U. S. War Department by permit dated September 2, 1930

State of California, Division of State Lands
(See letter by Attorney General U.S. Webb)
(See Mr. Savage's letter to Webb 9/12/30)

Act of State Legislature

San Diego, California
June 26, 1930.

U. S. War Department,
Major W. H. Lanagan,
District Engineer,
725 Central Building,
Los Angeles, California.

Subject: Ellen Browning Scripps Bathing Pool,
Application for United States
War Department Approval.

My dear Major Lanagan:

Complying with the provisions of "Information Circular, Form No. 96a, War Department Engineers, revised August, 1927", and exemplifying the valued suggestion you very graciously co-operated in favoring me with, enclosed is application in triplicate for permit for the construction of a concrete breakwater in the Pacific Ocean at La Jolla; the purpose of the breakwater being to create a bathingpool adjacent to the City of San Diego's La Jolla Park and City streets. The work as projected is anticipated to cost in the vicinity of \$50,000, which amount has been allocated by Miss Ellen Browning Scripps, and I have been formally authorized to accomplish the construction of the projected work.

Dr. J. C. Harper, Attorney in Fact, has left San Diego for a three months tour throughout Europe.

The permit when received from the War Department at your hand, or if forwarded direct from the War Department should be addressed Care Hiram Newton Savage, Hydraulic Engineer in Charge, Office 524 F Street, San Diego, California.

Very truly yours,

H. N. Savage.

HNS/f

San Diego, California,
June 26, 1930.

State of California,
Department of Public Works,
B. B. Neek, Director of Public Works,
Public Works Building,
Sacramento, California.

Subject: Ellen Browning Scripps, Gratuity,
La Jolla Bathing Pool.

Gentlemen:

Enclosed is request for permission to construct a breakwater in the Pacific Ocean at La Jolla, California, signed by Dr. J. C. Harper, Attorney in Fact for Miss Ellen Browning Scripps.

The purpose of the breakwater is to create a bathing pool adjacent to the City of San Diego's La Jolla Park and City streets.

The work as projected is anticipated to cost in the vicinity of \$50,000, which amount has been allocated by Miss Ellen Browning Scripps, and I have been formally authorized to accomplish the construction of the projected work.

Dr. Harper has left San Diego for a three months tour throughout Europe.

The permit when approved should be addressed, Care Hiram Newton Savage, Hydraulic Engineer in Charge, Office 524 F Street, San Diego, California.

Very truly yours,

H. N. Savage,
Hydraulic Engineer.

HNS/r

San Diego, California
June 26, 1930.

TO THE HONORABLE, THE MAYOR AND COMMON COUNCIL
OF THE CITY OF SAN DIEGO, CALIFORNIA.

Subject: Ellen Browning Scripps, Gratuity.
La Jolla Bathing Pool.

Gentlemen:

Enclosed is request for permission to construct a breakwater in the Pacific Ocean at La Jolla, California, signed by Dr. J. C. Harper, Attorney in Fact for Miss Ellen Browning Scripps.

The purpose of the breakwater is to create a bathing pool adjacent to the City of San Diego's La Jolla Park and City streets.

The work as projected is anticipated to cost in the vicinity of \$50,000, which amount has been allocated by Miss Ellen Browning Scripps, and I have been formally authorized to accomplish the construction of the projected work.

Dr. Harper has left San Diego for a three months tour throughout Europe.

The permit when approved should be addressed, Care Hiram Newton Savage, Hydraulic Engineer in Charge, Office 524 B Street, San Diego, California.

Very truly yours,

H. N. Savage,
Hydraulic Engineer.

HNS/r

4-3-31

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San Diego, California
June 26, 1930

Board of Park Commissioners
Lester T. Olmstead, President,
Administration Bldg., Balboa Park,
San Diego, California.

Subject: Ellen Browning Scripps, Gratitude.
La Jolla Bathing Pool.

Gentlemen:

Enclased is request for permission to construct a breakwater in the Pacific Ocean at La Jolla, California, signed by Dr. J. C. Harper, Attorney in Fact for Miss Ellen Browning Scripps.

The purpose of the breakwater is to create a bathing pool adjacent to the City of San Diego's La Jolla Park and City streets.

The work as projected is anticipated to cost in the vicinity of \$50,000, which amount has been allocated by Miss Ellen Browning Scripps, and I have been formally authorized to accomplish the construction of the projected work.

Dr. Harper has left San Diego for a three months tour throughout Europe.

The permit when approved should be addressed, Care Hiram Newton Savage, Hydraulic Engineer in Charge, Office 524 F Street, San Diego, California.

Very truly yours,

H. N. Savage,
Hydraulic Engineer.

HNS/f

4-3-31

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San Diego, California
June 26, 1930

Board of Playground Commissioners,
Jerome B. Pendleton, President,
Administration Bldg., Balboa Park,
San Diego, California.

Subject: Ellen Browning Scripps, Gratitude.
La Jolla Bathing Pool.

Gentlemen:

Enclosed is request for permission to construct a breakwater in the Pacific Ocean at La Jolla, California, signed by Dr. J. C. Harper, Attorney in Fact for Miss Ellen Browning Scripps.

The purpose of the breakwater is to create a bathing pool adjacent to the City of San Diego's La Jolla Park and City streets.

The work as projected is anticipated to cost in the vicinity of \$50,000, which amount has been allocated by Miss Ellen Browning Scripps, and I have been formally authorized to accomplish the construction of the projected work.

Dr. Harper has left San Diego for a three months tour throughout Europe.

The permit when approved should be addressed, Care Hiram Newton Savage, Hydraulic Engineer in Charge, Office 524 F Street, San Diego, California.

Very truly yours,

H. N. Savage,
Hydraulic Engineer.

HNS/f

RESOLUTION NO. 54177

BE IT RESOLVED by the Common Council of the City of San Diego,
as follows:

That permission be, and it is hereby granted to Ellen
Browning Scripps, by J. C. Harper, Attorney in Fact, to
construct a concrete breakwater in the Pacific Ocean at La
Jolla, California, as petitioned for under Document No.
258569.

I HEREBY CERTIFY the above to be a full, true, and
correct copy of Resolution No. 54177 of the Common Council
of the City of San Diego, as adopted by the said Council
June 30, 1930.

ALLAN H. WRIGHT
City Clerk

By CLARK M. FOOTE, JR.
Deputy

4-1-31

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825 Union Street

July 11, 1930

Mr. J. C. Harper, Attorney in Fact,
For Miss Ellen Browning Scripps,
La Jolla, California.

Dear Sir:

Replying further to your communication of June 21 requesting permission for the construction of a concrete breakwater in the Pacific Ocean at La Jolla, beg to advise that we have been advised by the City Attorney that inasmuch as this recreational improvement proposed by you does not affect any property under the control of the Playground Commission, the said Commission has no jurisdiction whatsoever over same.

However, the Board of Playground Commissioners will be glad if you will express to Miss Scripps our sincere appreciation of this proposed addition to the recreational facilities in La Jolla, and that the Board will be happy to cooperate in any and every way possible by placing our superintendent at the disposal of your engineer and the contractors before and during construction of the bathing zone area, and also to cooperate with you in the maintenance and construction of same after it is completed, in so far as our jurisdiction will permit.

Respectfully yours,

J. B. Pendleton (Signature)
President
Board of Playground Commissioners

Copy to Mr. H. H. Savage

Park Department
City of San Diego, California
Balboa Park

July 22, 1930

Mr. Hiram Newton Savage,
Hydraulic Engineer in Charge,
San Diego, California.

Dear Sir:

In reply to your letter of June 26th, 1930,
relative to request of Miss Ellen Browning Scripps for
permission to construct a breakwater in the Pacific
Ocean at La Jolla, construction of the breakwater on
such land as may be under jurisdiction of the Park
Department of the City of San Diego was duly authorized
by the Board of Park Commissioners, at its last meeting,
July 10th, 1930.

Yours very respectfully,

A. S. HILL (Signature)

A. S. Hill
Executive Secretary.

9-4-30
Copy/f.

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COPY

WAR DEPARTMENT,
UNITED STATES ENGINEER OFFICE,
725 CENTRAL BLDG.,
LOS ANGELES, CALIF.

September 2, 1930.

Ellen Browning Scripps,
c/o Mr. H. N. Savage,
524 F. Street,
San Diego, Calif

Madam -

Replying to your letter of application dated June 21, 1930, there is inclosed herewith a War Department permit to construct a concrete breakwater in the Pacific Ocean at La Jolla, California.

In order to complete the records and to keep this office informed of the progress of the work and the date of its completion, your special attention is invited to the requirements of condition (h) of this permit, as follows:

"That the permittee shall notify the said district engineer at what time the work will be commenced, and as far in advance of the time of commencement as the said district engineer may specify, and shall also notify him promptly, in writing, of the commencement of work, suspension of work, if for a period of more than one week, resumption of work, and its completion.

Very truly yours,

W. H. LANAGAN (E) (Signature)

W. H. Lanagan,
Major, Corps of Engineers,
District Engineer.

1 Inclosure -
Permit.

WAR DEPARTMENT

Note.--It is to be understood that this instrument does not give any property rights either in real estate or material, or any exclusive privileges; and that it does not authorize any injury to private property or invasion of private rights, or any infringement of Federal, State, or local laws or regulations, nor does it obviate the necessity of obtaining State assent to the work authorized. IT MERELY EXPRESSES THE ASSENT OF THE FEDERAL GOVERNMENT SO FAR AS CONCERNS THE PUBLIC RIGHTS OF NAVIGATION. (See Cummings v. Chicago, 188 U.S., 410.)

PERMIT Office of the Division Engineer,
South Pacific Division,
United States Engineer Office
414 Custom House, San Francisco,
August 30, 1930.

Ellen Browning Scripps.
San Diego,
California.

Dear Madam:

Referring to written request dated June 21, 1930, I have to inform you that, upon the recommendation of the Chief of Engineers, and under the provisions of Section 10 of the Act of Congress approved March 3, 1899, entitled "An act making appropriations for the construction, repair and preservation of certain public works on rivers and harbors, and for other purposes," you are hereby authorized by the Secretary of War, to construct a concrete breakwater in the Pacific Ocean at La Jolla, California, in accordance with the plans shown on the drawing attached hereto marked "Proposed Breakwater in the Pacific Ocean at La Jolla, California, Application by Ellen Browning Scripps, by J. C. Harper, Authorized Agent, June twentieth, 1930."

Subject to the following conditions:

(a) That the work shall be subject to the supervision and approval of the District Engineer, Engineer Department at Large, in charge of the locality, who may temporarily suspend the work at any time, if in his judgment, the interests of navigation so require.

(b) That any material dredged in the prosecution of the work herein authorized shall be removed evenly, and no large refuse piles, ridges across the bed of the waterway, or deep holes that may have a tendency to cause injury to navigable channels or to the banks of the waterway shall be left. If any pipe, wire, or cable hereby authorized is laid in a trench, the formation of permanent ridges across the bed of the waterway shall be avoided and the back filling shall be so done as not to increase the cost of future dredging for navigation. Any material to be deposited

or dumped under this authorization, either in the waterway or on shore above high-water mark, shall be deposited or dumped at the locality shown on the drawing hereto attached, and, if so prescribed thereon, within or behind a good and substantial bulkhead or bulkheads, such as will prevent escape of the material into the waterway. If the material is to be deposited in the harbor of New York, or in its adjacent or tributary waters, or in Long Island Sound, a permit therefor must be previously obtained from the Supervisor of New York Harbor, Army Building, New York City.

(c) That there shall be no unreasonable interference with navigation by the work herein authorized.

(d) That if inspections or any other operations by the United States are necessary in the interests of navigation, all expenses connected therewith shall be borne by the permittee.

(e) That no attempt shall be made by the permittee or the owner to forbid the full and free use by the public of all navigable waters at or adjacent to the work or structure.

(f) That if future operations by the United States require an alteration in the position of the structure or work herein authorized, or if, the opinion of the Secretary of War, it shall cause unreasonable obstruction to the free navigation of said water, the owner will be required, upon due notice from the Secretary of War, to remove or alter the structural work or obstructions caused thereby without expense to the United States, so as to render navigation reasonably free, easy, and unobstructed; and if, upon the expiration or revocation of this permit, the structure, fill, excavation, or other modification of the watercourse hereby authorized shall not be completed, the owners shall, without expense to the United States, and to such extent and in such time and manner as the Secretary of War may require, remove all or any portion of the uncompleted structure or fill and restore to its former condition the navigable capacity of the watercourse. No claim shall be made against the United States on account of any such removal or alteration.

(g) That if the display of lights and signals or any work hereby authorized is not otherwise provided for by law, such lights and signals as may be prescribed by the Bureau of Lighthouses, Department of Commerce, shall be installed and maintained by and at the expense of the owner.

(h) That the permittee shall notify the said district engineer at what time the work will be commenced, and as far in advance of the time of commencement as the said district engineer may specify, and shall also notify him promptly, in writing, of the commencement of work, suspension of work, if for a period of more than one week, resumption of work, and its completion.

(i) That if the structure or work herein authorized is not completed

on or before thirty-first day of December, 1933, this permit, if not previously revoked or specifically extended, shall cease and be null and void.

By authority of the Secretary of War:

THOMAS M. ROBINS (Signature)

Thomas M. Robins,
Lieut. Colonel, Corps of Engineers,
Division Engineer.

War Department
O. C. of E.
Form No. 96
Revised April 28, 1922
3-8360

STATE OF CALIFORNIA

Legal Department

San Francisco, September 17, 1930

H. N. Savage, Esq.
Civil Engineer
524 F Street
San Diego, California.

My dear Mr. Savage:

Acknowledgement is made of yours of the 12th inst., in re "Ellen Browning Scripps Gratuitous Bathing Pool for Children at La Jolla, California", and approval is expressed to all said by you therein, except those things personal to myself.

A few days ago I addressed a letter to Mr. Gordon Gray, in which I made reference to the tentative understanding reached with you during our conference at this office and said:

"Being convinced that no detriment would result to the beach from the construction of the breakwater contemplated, but on the contrary that it would greatly advance the recreational possibilities, I expressed to him that I thought without hazard the work could proceed in advance of legislative action, should it be determined that legislative action were required.

I expressed to him further the belief that no action would be taken by the State to prevent the progress of the work prior to the time, if at all, when legislative action should be had."

And such statement is here confirmed.

In addition to this, if it is determined to ask legislation on this subject I shall be pleased to do what I can at the approaching session to further such required legislation.

I am pleased that it has been determined to go forward in this work and express my deep appreciation of the public spirit and splendid ambition of Mrs. Scripps.

With assurances of highest regard, I am,

Very truly yours,

U. S. Webb (Signature)

San Diego, California
September 12, 1930.

Honorable U. S. Webb,
California State Attorney General
San Francisco, California.

Subject: Ellen Browning Scripps Gratuitous
bathing pool for children at
La Jolla, California.

My dear Attorney General Webb:

You have my appreciation and valuation for the very courteous and judicially constructive cooperation you exemplified at our official conference in your San Francisco office, Thursday afternoon, September 4, regarding the projected gratuitous accomplishment by Miss Ellen Browning Scripps of a safe bathing pool for children in Pacific ocean water adjacent to the cliffs at La Jolla, California, located as indicated on "Proposed Breakwater on the Pacific Ocean at La Jolla, California" drawings 1 of 2, and 2 of 2, which have been passed to you.

I had gained the impression, which you confirmed, that an Act of the California State Legislature alone could legally authorize the gratuitous construction, operation and maintenance by Miss Scripps of the breakwater structure necessary to control Pacific ocean water sufficient to provide a safe bathing pool at the site selected, and

That no Administrative Department of the State of California could legally authorize the construction of the work, and

That until an Act of the California State Legislature could be obtained, only the California State Attorney General could initiate the legal steps necessary to prevent the construction of the projected bathing pool breakwater, and

That comprehensively appreciating the gratuitous perpetual non-commercial character of the projected undertaking, you feel that it would be entirely proper for the work to be immediately put under construction by Miss Scripps and accomplished at the earliest practicable date, having in mind the extreme age and failing health of Miss Scripps, and

That, furthermore, you, out of, in my knowledge, unprecedented official constructive cooperation gave me your assurance of further constructive cooperation to the extent you may find proper with Miss Scripps' representatives in advancing the accomplishment of an Act of the next Legislature, legally confirming the accomplishment of the gratuity.

Honorable U. S. Webb

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9/12/30

I trust you may find it proper to confirm my foregoing impressions.

The U. S. War Department has formally issued permit for the construction of the projected bathing pool structures at the location of and in the character shown on the drawings.

With sincere feelings of high personal esteem and prominent appreciation of your constructive cooperation, I am

Very cordially yours,

H. N. Savage,
Engineer in Charge.

HNS/f

APPROVED IN ASSEMBLY APRIL 23, 1931

SENATE BILL

NO. 422

AN ACT GRANTING CERTAIN TIDE AND SUBMERGED LANDS OF THE STATE OF CALIFORNIA TO THE CITY OF SAN DIEGO, SAN DIEGO COUNTY, IN SAID STATE, UPON CERTAIN TRUSTS AND CONDITIONS.

The people of the State of California do enact as follows:-

SECTION 1. There is hereby granted to the city of San Diego, county of San Diego, all the right, title and interest of the State of California, held by said state by virtue of its sovereignty, in and to all that portion of the tide and submerged lands bordering upon and situated below the ordinary high water mark of the Pacific ocean described as follows:

Beginning at the intersection of the ordinary high water mark of the Pacific ocean with a line bearing S. 87° 40' W. from the monument marking the intersection of Coast boulevard south with Jenner street as said monument, said Coast boulevard south and said Jenner street are designated and shown on that certain map entitled "Seaside subdivision number 1712" and filed June 23, 1920, in the office of the county recorder of San Diego county, State of California; thence N. 350', thence E. 300', thence S. 185', more or less to the ordinary high water mark of the Pacific ocean, thence in a general southwesterly direction along the ordinary high water mark of the Pacific ocean to the point of beginning, all in the Pacific ocean, State of California, to be forever held by said city of San Diego and its successors in trust for the uses and purposes and upon the express conditions following, to wit:

(a) That said lands shall be devoted exclusively to public park, bathing pool for children, parkway, highway, playground and recreational purposes, and to such other uses as may be incident to, or convenient for the full enjoyment of, such purposes;

(b) The absolute right to fish in the waters of the Pacific ocean over said tidelands or submerged lands with the right of convenient access to said waters over said lands for said purpose is hereby reserved to the people of the State of California.

(c) That there is excepted and reserved to the State of California all deposits of minerals, including oil and gas, in said land, and to the State of California, or persons authorized by the State of California, the right to prospect for, mine and remove such deposits from said land.

APPROVED: _____

James Rolph Jr.

RBS

M-4-24-31

CONTRACTS FOR THE CONSTRUCTION WORK AND MATERIALS

(a) Advertisements issued: As this work was private work informal invitations to bid were sent to four contractors who were known to have had successful construction experience with this type of marine work. Invitations were sent to the following:

Merritt-Chapman & Scott Corporation of San Pedro

Healy-Tibbitts Construction Company of San Francisco

W. M. Ledbetter & Co. of Los Angeles

Chas. Steffgen of San Diego

(b) Proposals received: Proposals were received and publicly opened on September 10, 1930. Attached is summary of bids received; also copy of news item from the Evening Tribune of September 13, 1930.

(c) Award of work: W. M. Ledbetter & Co. were awarded the work on September 15, 1930, and the bonds in amount of \$50,000 for faithful performance and \$25,000 for labor and materialmen's bonds were executed on September 15, by Austin G. Brown, attorney-in-fact for Indemnity Insurance Company of North America.

(d) Basis on which award was made: The contract for the construction was awarded on the proposal received from W. M. Ledbetter & Co. on September 10, 1930. This bid was the lowest formal bid and was based upon quantities in proposal schedule at unit prices in the schedule which totaled \$55,215.00. The contract was executed on September 16, 1930. Attached is letter of transmittal to Miss Scripps, attention Captain W. C. Crandall dated September 15, 1930, relative to construction; also the experience record of W. M. Ledbetter and the proposed methods of construction as submitted and signed by W. M. Ledbetter.

ELLEN BROWNING SCRIPPS

BATHING ZONE BREAKWATER

BIDS RECEIVED SEPTEMBER 10, 1930

SCHEDULE ITEMS	QUANTITIES	W.M. LEDBETTER		CHAS STEFFGEN		MERRITT-CHAPMAN & SCOTT		HEALY- TIBBITTS
		Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	
1. Excavation	850 cu yd	3.80	3,230.00	14.15	12,027.50	5.20	4,420.00	
2. Excavation	1,000 " "	1.80	1,800.00	6.75	6,750.00	5.20	5,200.00	
3. Excavation	300 " "	.90	270.00	4.05	1,215.00	3.48	1,044.00	Offer to
4. Concrete	2,500 " "	12.96	32,400.00	7.76	19,400.00	10.28	25,700.00	furnish
5. Concrete	140 " "	19.50	2,730.00	24.32	3,404.80	19.20	2,688.00	equipment
6. Cement	3,150 bbls	2.90	9,135.00	3.45	10,867.50	3.18	10,017.00	and do
7. Steel rails, placing.	66,000 lbs	.0065	429.00	.0135	891.00	.0206	1,359.60	work at
8. Reinforcing steel, placing	12,000 "	.01	120.00	.0125	150.00	.0158	189.60	cost
9. Drill holes	1,400 ft	2.10	2,940.00	1.00	1,400.00	2.35	3,290.00	plus
10. Drill holes	120 "	3.00	360.00	2.00	240.00	4.50	540.00	15 per
11. Pipe railing	650 "	2.25	1,462.50	1.63	1,059.50	1.96	1,274.00	cent
12. Hi-way guard	330 "	.60	198.00	.68	224.40	.72	237.60	
13. U-bolts and cover plates	lump sum		140.50		120.00		83.00	
Item added by Merritt-Chapman & Scott for trestle							23,835.00	
Total of Items			55,215.00		57,749.70		79,877.80	
Certified Check			6,000.00		5,800.00		8,000.00	

The San Diego Evening Tribune
San Diego, September 13, 1930.

Prominent among the number of splendid gratuities which Miss Ellen Browning Scripps has donated to the public is the projected construction at La Jolla of a 300 foot long concrete reinforced breakwater extending from the base of the cliffs in front of the Casa de Manana Hotel out into the Pacific Ocean to create a safe bathing pool for children. Including a bathing stall concrete reinforced structure, the top of which will be below the level of the adjacent street. The concrete reinforced stairways will afford access thereto and therefrom down to the bathing pool.

The U. S. War Department has formally approved the construction of the feature and the several departments of the State of California have given the work their fullest approval and assurances of their cooperation in securing an Act at the next State Legislature, confirming the construction of the project, thereby justifying the immediate accomplishment of the work. Sealed bids were opened September 10, 1930 and are attached.

Miss Scripps is selecting the surety company for the contractor and paying for a faithful performance bond in the amount of \$50,000, and a labor and materialmen's bond in the amount of \$25,000.

It is expected that formal award for the contract will be made immediately and construction follow aggressively on to completion. Details of the bids are shown in the attached sheet.

Mr. H. H. Savage is gratuitously serving as engineer in charge for Miss Scripps.

4-3-31

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San Diego, California
September 15, 1930.

Miss Ellen Browning Scripps,
La Jolla, California.

Attention: Captain W. C. Crandall.

Subject: Ellen Browning Scripps Bathing Pool for Children
at La Jolla, California - construction.

Dear Madam:

Formal permission, dated September 2, 1930, has been obtained from the U. S. War Department for the construction of Miss Ellen Browning Scripps' projected bathing pool for children at La Jolla.

Also California State Attorney General, Honorable U. S. Webb, has formally indicated his constructive cooperation in securing a State Legislative Act confirming the completed construction of the bathing pool structures. Enclosed is a copy of my letter of September 12, 1930, to Attorney General Honorable U. S. Webb.

Designs for the breakwater feature were developed after re-searching the designs of all known breakwaters approaching similar type in the world. The engineering policy in mind was to plan the work to be as strong as necessary for durability and for safe economical operation to create a safe bathing pool for children. The design developed, before being submitted for bids, has been critically considered by civilian engineers of broad construction experience in construction of breakwaters in the Pacific Ocean and by three U. S. Department engineers, who announced their unanimous conclusion that if built as designed it would last until "Kingdom Come".

Drawings, specifications and invitation for proposals for performing the work were submitted to four contractors, each of known successful experience in construction of marine structures exposed to the vicissitudes of ocean wave action due to storms on the Pacific Ocean.

Four proposals were received and opened on September 10, 1930, and were as follows:

Miss Ellen Browning Scripps

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9/15/30

Contractor	Total Amount Bid
W. M. Ledbetter & Company	\$ 55,215.00
Chas. Steffgen	57,749.70
Merritt-Chapman & Scott Corp.	79,877.80
Healy-Tibbitts Construction Co.	Furnish equipment and do work at cost plus 15%

The lowest formal proposal was submitted by W. M. Ledbetter & Company, who have had a comprehensive and successful contract experience in building marine structures under difficult conditions among them the pier at Scripps Oceanography Institute at La Jolla and a breakwater at New port under very difficult conditions as to adverse ocean currents. W. M. Ledbetter's bid is considered fair, alike to Miss Ellen Browning Scripps and to himself, as it is sufficiently high to accomplish the construction of the works according to the drawings and specifications, and is a reasonably economical price for Miss Ellen Browning Scripps to pay for the work.

Surety bonds in the amount of \$50,000 for the Faithful Performance Bond and of \$25,000 for the Labor and Materialmen's Bond have been executed by Mr. Austin G. Brown as Attorney-in-fact for Indemnity Insurance Company of North America, which company is accredited by the United States Treasury Department.

The estimated total cost of constructing the bathing pool structure based upon the contractor's bid is as follows:

Amount of contractor's bid	\$ 55,215.00
Reinforcing steel and cable barrier	2,000.00
Bond premiums	1,125.00
Contingencies and engineering	<u>11,660.00</u>
Total	\$ 70,000.00

Enclosed are drawings, specifications and surety bonds and contract duly executed by W. M. Ledbetter for W. M. Ledbetter & Company with Miss Ellen Browning Scripps for the construction of the bathing pool structures - breakwater and bathing stalls.

It is respectfully recommended that the contract be executed by Miss Ellen Browning Scripps by her Attorney-in-fact.

Enclosed is an abstract of bids received.

Enclosed is copy of statement submitted by W. M. Ledbetter showing several of his construction experiences, also copy of

Miss Ellen Browning Scripps

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9/15/30

his statement indicating the methods he proposes to use in constructing this contract work.

Very respectfully yours,

H. N. Savage,
Engineer in Charge.

HNS/p

Encls. (4)

Abstract of Bids

Copy letter H.N. Savage to Attorney General U.S. Webb 9/12/30

Drawings, specifications and surety bonds and contract

W.M. Ledbetter construction experience statement and
proposed construction methods.

September 11, 1930

STATEMENT OF EXPERIENCE

of

W. M. LEDBETTER

Nature of Work 666	Engineer	Year	Amount
1. Driving concrete piles and erecting falsework causeway across Mission Bay		1930	54,000
2. Constructed steel and concrete pier for Signal Gas & Oil Co., Elwood	G. C. Young	1929	84,000
3. Constructed steel and concrete Pier for Seaward Gas & Oil Co., Elwood		1929	45,000
4. Constructed steel and concrete piers for Pacific Western Oil Co.		1929	115,000
5. Sewage disposal plant - building (sub-aqueous foundation) at Wilmington	City of Los Angeles R.W. Stewart	1928	63,400
6. Reconstruction of toll bridge over Colorado River at Blythe for California-Arizona Bridge Company. 6-120 steel spans - subaqueous foundations for piers.	(Canton of London Ltd) Insurance Co.) R.W. Hughes S.B. Lane R.W. Postlethwaite		316,000
7. Scripps Institute Pier at La Jolla	Prof. Darleth		40,000
8. Highway bridges Santa Barbara County	G.H. O'Neill	4 to 5 years	400,000
9. 12 bridges Ventura County	C.W. Pettit	Several years	60,000
10. Highway bridges Los Angeles County	Armstrong	" "	
11. Highway bridges Orange County	Neff	" "	
12. Highway bridges San Diego County	George Butler	" "	

Nature of Work	Engineer	Year	Amount
13. Breakwater at Newport Rock placed from trestle twice extended	Leeds & Bannard Leeds & Bannard	Several years	100,000
14. San Diego-Arizona RR, bridges - rebuilding	E.J. Kahlwright	1916 1917	140,000
15. Imperial Irrigation District check dams	C.K. Clark C.W. Perry	1920 1921	60,000
16. Steel & wooden beach revetments for private owners			
17. Reconstruction & new bridges Pacific Electric RR Company including piers for Hermosa and Huntington Beaches		Several years 1914	Several thousand dollars on per- centage
18. Bridges in Utah-Nevada and California for Union Pacific Railroad	Roy Adamson Pacific Elec- tric Bldg. Los Angeles		80,000
19. Diversion dam-New River for A.L. Sondrager of Los Angeles Central Building			83,000
20. Four pumping plants for sewage (subaqueous foundations)	Mjr McGlane		
21. Highway bridges, California Highway Department. 3 concrete bridges between Long Beach and Seal Beach			
22. As subcontractor with J.D. Mercereau - contractor		21 years	
23. Robert Shearer - contractor			
24. C. E. Crowley- contractor			
Equipment Yard and Office 5351 Alhambra Avenue, Los Angeles P.O. Box 1264 Arcade Station, Los Angeles			

Organization for La Jolla project now
at Mission Bay Bridge. Has some
equipment here.

ELLEN BROWNING SCRIPPS
Bathing Pool for Children
at La Jolla, California.

September 11, 1930

STATEMENT OF W. M. LEDBETTER

PROPOSED METHODS FOR CONSTRUCTING BREAKWATER.

Fence off point of bluff.

Construct cement shed and tool shed with office partitioned off

Construct timber trestle over entire alignment of breakwater, high enough so all work can proceed below. Trestle piles, in holes drilled in rock.

Holes drilled by Star well drill using cutter point with hydraulic jet attachment 250 pounds per square inch.

Timber crib at both sides of gap between rock and bluff. Fill timber cribs with rock.

Excavate between cribs with $3/4$ cubic yard clamshell equipped with cutter teeth of manganese steel. Use larger bucket if necessary. Small bucket 2'-10" wide. Outside posts of trestle to form inside posts of timber cribs. Cut off center posts or pull before placing concrete.

Work to progress from point outward in alternate sections.

Trench for minimum height section to be cut with paving breakers equipped with 4" wide chisel bits working at low tide. Clean out trench with clamshell bucket. 2 air compressors available for this.

Concrete Mixer - 2 sack Smith. Tower for placing concrete is being considered. Tower would be set up on point of bluff east of tangent shoreward end of breakwater.

Excavation of Bathing Zone area by drag bucket with haul-back line to pile up material near northerly point of main point of bluff where a derrick would place the rock into cribs and later to seaward side of breakwater.

Organization - Superintendent and Foreman from the Mission Bay Bridge. Several local men there now would go on breakwater. Local men would be used.

Materials either from Fenton or Parker.

Excavation for stalls handled by clamshell and by hand for final trimming.

W. M. Ledbetter

Bids were requested on September 29, 1930, for furnishing and delivering steel rails. See attached notice to bidders.

Three bids were received as follows:

Bidder	Date of Bid	Pounds	Bid Price	Amount
Shannahan Bros. Inc.	10-7-30	63,540	\$26.00 per ton	\$826.02
United Commercial Co.	10-9-30	63,540	33.85 " long ton	960.19x
Western Metal Supply	10-2-30	63,540	27.50 per ton	873.67
x not delivered				

The steel proposed to be furnished by Shannahan Bros. Inc., was inspected on October 14, 1930 and found acceptable. The order for the steel as listed in the notice to bidders was placed with Shannahan Bros. Inc., and deliveries were made during October. The total of 63,540 pounds was placed in the breakwater by W. M. Ledbetter & Co.

San Diego, California
September 29, 1930.

NOTICE TO BIDDERS

Proposals will be received at the office of H. N. Savage, Engineer for Ellen Browning Scripps, 524 F Street, San Diego, California, for furnishing and delivering Steel Rails for Bathing Zone Breakwater at La Jolla, California, cut to lengths and of first quality relaying standard 60 pound steel railway rails as follows:-

Number of Pieces	Length Feet	Total Length Feet
38	30	1,140
18	24	432
6	19	114
49	17	833
<u>47</u>	<u>14</u>	<u>658</u>

Pay Length..... 3,177 feet

Substitution of lengths permitted only upon following conditions:

1. 12 pieces at least must be 30 feet long.
2. If rails are of less length than 30 feet then sufficient additional length must be furnished to provide for 5' laps.
3. Additional footage over and above 3177 feet will not be paid for.
4. No substitution of lengths permitted except in 30 foot lengths as above.

Bidder shall submit a short sample of rail he proposes to furnish.

The steel rails as above shall be delivered on the bluff at the site of the work opposite Casa de Manana, La Jolla, California not later than October 8, 1930. The steel rails will be paid for after delivery by Ellen Browning Scripps and the bill in duplicate in accordance with lump sum bid should be sent to Ellen Browning Scripps, 524 F Street, San Diego, California.

Bids for furnishing and delivering reinforcing steel were requested on September 29, 1930. See attached notice to bidders.

Two bids were received as follows:

Bidder	Date of Bid	Bid Price per CWT	Amount
Western Metal Supply Co.	10-1-30	\$3.15 for 1/2" 2.95 for 3/4"	313.56 x
H. G. Fenton Material Co.	10-9-30	3.15 for 1/2" 2.95 for 3/4"	315.56

x not according to grade specified.

The order for the steel as listed in the notice to bidders was placed with H. G. Fenton Material Company on October 13, 1930.

In addition to the above order an order for 1920 pounds of 1/2 inch square bars and 1251 pounds of 3/4 inch square bars was placed with the same company on January 12, 1931. This second order was for the rear retaining wall of the stairway structure as re-designed. The above two orders were paid upon claim dated January 31, 1931. In addition to the above orders, a third order was placed for 3037 pounds of 1/2 inch square bars for the parapet walls, steps to breakwater, catch basin and curb inlet. This last order was paid for upon claim dated February 28, 1931.

San Diego, California
September 29, 1930.

NOTICE TO BIDDERS

Proposals will be received at the office of H. N. Savage, Engineer for Ellen Browning Scripps, 524 F Street, San Diego, California, for furnishing and delivering Reinforcing Steel for Bathing Zone Breakwater at La Jolla, California, cut to lengths and tied in bundles and marked as per attached table.

Reinforcing steel shall be deformed bars from new billet stock of intermediate grade in accordance with the Standard Specifications for Billet-steel Concrete Reinforcement Bars, Serial Designation: A-15-14 of the American Society for Testing Materials and shall be of sizes and lengths as per attached table.

The bidder shall submit a short sample of the 1/2 inch steel bar.

The reinforcing steel shall be delivered to the bluff above the site of the Bathing Zone Breakwater opposite Casa de Manana, at La Jolla, California, not later than October 31, 1930. The reinforcing steel will be paid for after delivery by Ellen Browning Scripps and the bill in duplicate in accordance with the bid price should be sent to Ellen Browning Scripps, 524 F Street, San Diego, California.

H. N. Savage
Engineer in Charge

HW/r

Item	Mark	Size	No.	Length feet	Total Length feet
1.	Buttress stirrups		10	24	240
2.	Floor slab - elevation 20		16	22	352
3.	Retaining wall footing		18	22	396
4.	Front steps		6	22	132
5.	Front wall of steps		20	22	440
6.	Retaining wall		26	22.67	589.42
7.	Floor slab - elevation 20		8	20	160
8.	Front wall of steps		26	20	520
9.	Retaining wall		13	24	312
10.	Stalls - rear walls & parapets		48	14.5	696
11.	Stalls - roof		24	14.5	348
12.	Retaining wall		68	16	1088
13.	Retaining wall & parapet		6	18	108
14.	Retaining wall parapet		6	15.5	93
15.	Floor slab - elevation 20		58	12.25	710.50
16.	Floor slab - elevation 20-center		6	12.42	74.52
17.	Main entrance parapet		24	12.5	300
18.	Main entrance parapet		25	12.0	300
19.	Stalls rear wall		58	12.0	696
20.	Stalls roof		42	6.33	265.86
21.	Main entrance steps		56	5.17	289.52
22.	Main entrance steps		6	11.0	66
23.	Steps between stalls		14	7.83	109.62
24.	Stalls and walls & partitions		128	6.33	810.24
25.	Stalls and walls & partitions		96	7.75	744
26.	Stalls walls stubbs		96	1.33	127.68
27.	Retaining wall footing		47	7.5	352.5
28.	Retaining wall footing		16	6.0	96
29.	Front steps and landing		91	5.0	455
30.	Stubbs and corner bands		2	14.0	28
31.	Stubbs and corner bands		20	12.0	240

11,140 feet at .86 lbs. per foot = 9,580.4 lbs.

11,139.86

32.	Retaining wall - center	3/4	2	24	48
33.	Retaining wall - ends	"	4	22.5	90
34.	Buttress	"	4	17	68

206 feet 3/4" at 1.94 lbs. per foot = 399.6 lbs.

NOTE: Steel to be tied in bundles and tagged with item number and mark. No substitution of lengths will be permitted.

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CONTRACTOR'S ACCOMMODATIONS

(a) Temporary buildings: No camp buildings were erected. A building 12 feet by 34 feet was erected on the southeast corner of the park area and divided into an office space 10x12 feet, a blacksmith shop 12x10 feet and a tool shed 12x14 feet. A cement shed 14x24 feet was built along the west side of the point. A toilet was constructed over the sewer manhole at the west edge of the point of the bluff.

ENGINEER'S ACCOMMODATIONS

(a) Temporary buildings: No accommodations were furnished. Office work was done in the contractor's office at the job or in Mr. H. N. Savage's office in San Diego.

TRANSPORTATION FACILITIES

(a) Requirements: The materials to be delivered to the job consisted of form lumber, tools, machinery, cement, concrete aggregate, steel rails, reinforcement and supplies such as gasoline, oil, nails etc. No road building was necessary as the park area north of Coast Boulevard was all nearly level and surfaced with sandy clay soil.

(b) Description of highway: The concrete surfaced Coast Boulevard which connects with the Coast Highway ran past the site of the work. The nearest railroad siding was Pacific Beach siding 7.3 miles southeast of the work.

CONSTRUCTION BY CONTRACT

(a) Beginning of work: On September 16, 1950, the contract and bonds were executed. The next day the first equipment arrived on the site of the work. Arrangements were made for City water connections and for a telephone. A fence along the west side of the work was erected and painted white with signs "Danger - Keep Out" at four places. The contractor's representative and superintendent of the work was Carl Gadeberg. The tool shed, office, blacksmith shop and cement shed were erected, an approach ramp graded to the point of the bluff, the pile driver assembled and the temporary shore bents erected at the point of the bluff and on September 24 the first hole for pile was drilled and the first pile driven for the temporary trestle.

(b) Temporary work: The pile driver was used to operate a 14 inch bit in a 16 inch steel casing for drilling holes for the piles. A timber trestle was constructed outward from the bluff on the alignment and for the full length of the proposed breakwater. The first 70 feet of this trestle over the channel between the bluff and the reef was of 5 pile bents. The center pile was set 1.5 feet east of the center line of the breakwater, the next easterly pile at 17.5 feet from center line and the outer pile 11.5 feet further east. The first westerly pile was 14.5 feet west of the center line and the westerly pile was 13 feet further west. The remaining portion of the trestle was constructed of 3 pile bents with 12"x12" - 26 foot caps. All caps were set with their tops at elevation 20 and were drift bolted to the piles.

3 x 8 inch horizontal girts were bolted to the shore side

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of each bent with their tops at elevation 15. 3 x 12 inch sash braces were bolted to the piles and caps. 3 x 12 inch line girts bolted flat on the top of each end of the caps held the structure rigid laterally. The piles were all driven into 14 inch diameter holes drilled into the rock about 6 to 8 feet. For the outer 14 bents 10 x 14 inch timber was used for piles. This insured a rigid trestle with ample anchorage. The holes were drilled with a 14 inch diameter bit weighing 1500 pounds operated by the pile driver in a 16 inch steel casing provided with cutting shoe. There were 21 pile bents in all. Work began September 24 and was completed October 21, 1930. (See Photographs BP 6 & BP 7).

Two timber cribs were constructed of 10 x 10 inch timbers with solid sides and three solid cross walls all solidly drift bolted. These cribs were constructed across the channel one between the two easterly row of piles of the five pile bents. The westerly crib was 66 feet long by 11 feet wide and 12 feet maximum height. The east crib was 60 feet long by 10 feet wide and 10 feet maximum height. Boulders were excavated so the cribs would rest on solid foundation. The bottoms of the cribs were built up of various length timbers to conform to the irregularities of the foundation rock. These cribs were erected on cross girts bolted to the piles above high tide level and were snubbed down to place with 8 - 3/8" cables over the caps. The east crib was lowered last on October 15.

The cribs were filled with sacks of sand and clay soil; this latter material partly from the excavation for the stairway structure and from the top of the extreme end of the point of the bluff above the shore end of the breakwater. The west crib

contained about 9000 sacks and the east crib about 3000. The outer edge and two outer cross walls of the west cribs were lagged with 3 x 8 inch vertical lagging about 4 feet long driven tight against the rock bottom. The inside edge of the east crib was similarly lagged. The west crib was decked over with 3 x 12 and 3 x 8 inch planks after being filled. The east crib was not decked but left open and was completely filled with material excavated from the foundation area of the breakwater.

A four inch Byron-Jackson open runner type centrifugal sand pump was installed on the west crib with a suction located in a sump just to the west of the cutoff trench. During the clearing of this portion of the cutoff trench, a sump 2 feet deeper or to -17 was drilled in the bottom of the trench at a point directly below the pump or station 1+31.4. This pump was belted to and driven by a 4 cylinder 50 H.P. Hercules Power Unit which was mounted on long skid timbers above the caps.

A two stage 6" Byron-Jackson pump was set on the extreme point of the bluff west of the west crib. This pump was belted to and driven by a 125 H.P. Climax 6 cylinder power unit set on the bluff at elevation 20 and west of the shore end of the breakwater. The suction of this pump was arranged to draw from either inside or outside the cofferdam formed by the cribs. It was used both for unwatering the cofferdam and for supplying sea water under 100 pounds per square inch pressure for jetting, washing off bedrock, sluicing and for supplying the rotary drill. (See Photograph BP9)

As the work on the cutoff trench advanced outward a sump was drilled at the return in the cutoff wall opposite station 2+33. This location served to care for draining and removing mud

from the drilling for all that portion of the trench outward to the end from opposite station 2432.5.

Only two set-ups of this 4 inch sand pump were thus required. No move of the jet or pressure pump was required as a 2 inch pressure line with frequent outlet valves was carried along the top of the caps of the trestle at the west ends of the caps.

The other temporary work done by the contractor was the erection of an office, tool shed and blacksmith shop. A cement shed 14 x 24 feet (2-car capacity) was also erected on the west side of the point of the bluff.

(c) Methods of Construction: The construction of the concrete breakwater was carried on entirely from the trestle which was decked over for a width of about 8 feet with planks as required for moving of panel forms, timber, concrete carts, steel rails, etc. (See Photograph BP 20).

CUTOFF TRENCH

The method of cutting the cutoff trench was the most interesting and important single thing about the entire project. A steel casing with hardened toothed cutting edge 32 inches in diameter and about 20 feet long, very heavily laminated and reinforced, was used to line a 28 inch diameter star shaped drilling bit which, with solid shank, weighed 4200 pounds. (See Photograph BP 6). The casing was set into a 36 inch trench [previously cut in the reef] with pneumatic spades to a depth of from 8 inches to 2 feet. The casing was lifted, moved and set into vertical position by the pile driver. The casing was braced near the top of the reef with 3 x 8 inch girts. The bit was operated up and down inside the casing by the pile driver hoist operating on the trestle. The holes were set 25 inches

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apart. The casing usually followed down about 4 feet. The bit pulverized the rock in the trench and the sea removed about half of the depth of the muck in the resulting trench. The segmental projections of rock into the trench resulting from the drilling were trimmed off with pneumatic spades at low tide. The lower portion of the trench was cleaned by jetting the cuttings to the sump of the sand pump, which removed the material. Some hand excavation of the cuttings was done also at low tide in the dry trench. Some very hard igneous boulders were encountered in the mass of the reef. The cutoff passed below all open seams. (See profile Supplemental Sheet 10) (See Photograph BP 17).

Before any concrete was placed, the trench was washed clean. To insure a longer period of working time in the portion of the trench outward from opposite station 2435 to opposite 3415, a 10 inch concrete wall was constructed on the reef outside of the outside line of the trench. The drilling of the cutoff trench began October 16 and progressed outward and was completed across the outer end of the breakwater on November 24. 328 linear feet of trench, including the returns, was drilled in the 34 days worked, or about 9.7 feet per day. The concrete composing the wall at the outer edge of the cutoff trench was placed at the contractor's expense and was not removed. "Anti Hydro", a solution which hastened the setting of the cement, was added to the mixing water to give the required strength before the pounding of the waves disturbed the concrete.

DRILLING HOLES FOR RAILS (See Photograph BP 7)

A rotary drill rig equipped with various bits including a standard "fish-tail" and a 4 point in combination with an inner

"fish-tail" bit was used to drill the 7 inch diameter holes for the steel rails. This rotary rig was equipped with a Le Roi engine geared to the turn table and a Ledgerwood double drum hoist with Le Roi engine. The entire rig was mounted on sills and was moved over the trestle caps. The two stage jet pump supplied the water for the drilling. The drilling was begun at the outer end of the breakwater on October 22. Drilling and reaming out a few holes in advance of setting and grouting was completed on November 26, 1930. Wooden plugs wrapped with burlap were driven into the holes as soon as drilled to keep them clear until the rails were set and grouted which could only be done at low tide. 26 holes at the outer end of the reef had to be reamed and cleaned on November 26. A total of 1304.5 feet of hole was drilled in 21 working days or an average of 62 feet per 8 hour day.

PLACING AND GROUTING STEEL RAILS

The hoisting line from the "A" frame of the drill rig was used to place the rails in the hole. A hand pump with flexible metal hose was used to remove as much water as possible before the grout was placed. The grout was mixed in proportion of 1 part cement to 3 parts of fine aggregate in a portable box on the reef and tamped into the hole flush with the top of the reef. No attempt was made to protect the top of the grout, as it was found that it eroded only a few inches in depth and this was filled with the grout placed over the reef just preceeding the placing of the concrete of the breakwater. The rails were sprung into the proper curve and bolts thru the flanges or 1/2" "U" bolts with plate clamps were used to hold the rails in proper alignment. A few places near the ends of the rails were heated to bring the ends into line. The vertical bent rails in section 1 were heated in the forge and bent to template by hand.

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PREPARATION OF FOUNDATION FOR BREAKWATER

The foundation for Section 1 was inclosed by the cofferdam formed by the two cribs, the bluff at the shore and the reef. The excavation for foundation for Section 1 was roughly done by a clam-shell bucket operated from a boom rigged on the point of the leads of the pile driver. (See Photograph BP 11). The material excavated was deposited west of the west crib and part inside the east crib. The final cleaning up was done by hand, after the cofferdam was unwatered. The unwatering was done at low tides by the jet and sand pumps. The foundation on the reef was prepared by cleaning off all marine growth with the pneumatic spades, which were also used for cutting the bond trenches and the inner toe trench. The foundation was always cleaned off with the jet using salt water and then a final cleaning with fresh water and a wire brush. As much care was exercised in this as if the foundation was being prepared for a high concrete dam.

ESTABLISHING POINTS FOR FORMS:

The center point for the curve of the breakwater was permanently established and a 200 foot steel tape swung from this center point was used to establish the 165 foot radius of the centerline. As this center point was not accessible at high tides a series of center line points were established on 2 x 4 inch cleats spiked and braced to the center piles of the trestle. Grade points were established daily as required, and in addition, points of known elevation were set and marked on the inside row of vertical steel rails after these were in place and grouted. The alignment and grade of all forms were checked before the concrete was placed. The center line of the shore tangent was established both on the reef and the

bluff. For points on the reef and bluff nails were driven into the rock and marked with red lead paint or red flagging.

FORMS FOR CONCRETE OF BREAKWATER

Forms for the portion of the breakwater inside the cofferdam, including the sluiceways and up to the lower part of the outside curve or elevation 6 were built up in place, in the dry, braced against the caps for preventing flotation when the cofferdam was allowed to fill. The upper curved forms for the sections inside and outside the cofferdam were panel forms. The panels were in general about 10 feet long for the upper outer curved portions and about 6 feet long for the lower portion of the outer battered face. The step forms were about 18 feet long. The lumber used for all except the upper curved form panels was 10 inch wide Oregon pine shiplap 1-5/8" thick, surfaced on the side next to the concrete. All form surfaces next to the concrete were oiled. The studs were set 24 inches apart and double 2 x 4 inch walers were set 30 inches apart and held with Williams form clamps which are a 3/4" "she" bolt provided with eye bolts for the tie wire and a wing nut for drawing up. The wing nut when reversed against a nail inserted in a hole provided in the outer end locked the bolt to unscrew from the eye bolt embedded in the concrete. Cone washers 3 inches long were set over the inner ends of the "she" bolts. These are very satisfactory form clamps and they were used on this job for all forms including the 8 inch walls.

The walers for the inside and outside of the breakwater on the portion where the alignment of the center line follows a 165 foot radius arc, were cut in the mill to the proper curve. (See Photograph BP 40).

CONCRETING THE BREAKWATER

A Koshring 13-E paving mixer was mounted on a platform about 20 feet south from the shore end of the breakwater. (See Photograph BP 20). Concrete for the breakwater was discharged into a steel hopper provided with a gate and was spouted directly into the lower portion of section 1 of the breakwater. For other portions of the breakwater the concrete was discharged from the hopper to wheel carts thence to a conical steel hopper and thru a flexible metal spout to place in the forms. The aggregates for the breakwater concrete were batched in the trucks and delivered directly to the mixer as follows:

Number	Size	Weight in pounds	Cubic feet
1	2-1/2	918	20
2	1-1/2	884	
4	3/8 to dust	945	10

This was the same proportion and same rock and sand as was being used under State specifications for the Rose Canyon Highway which was under construction at the same time. A small emergency stock pile of aggregates was maintained southwest of the mixer. The 34 cubic feet of concrete materials made .8023 cubic yard of concrete in place. This was average for the 1557.3 cubic yards in the breakwater proper.

Cement was Riverside brand delivered by truck from the railroad cars at Pacific Beach siding. The cement was shipped in double paper bags. All cement was sampled and tests of each car were made by the City of San Diego's testing department. No cement was rejected. A total of 3132.5 barrels were delivered of which the contractor used 30.25 barrels for his own work.

"Celite" or diatomaceous earth was added to all concrete on the project to the extent of 8 per cent by volume of the cement.

Water for mixing and washing was piped from the City service. The City installed a 1 inch meter and service connection about 200 feet east of the center of the project near Coast Boulevard and Jenner Street. A fresh water line was laid along the outer ends of the caps of the trestle with outlet valves at intervals.

The first concrete poured was for the cutoff under section 1 of the breakwater on November 6. The last concrete poured was for top of section 7 on the night of December 24.

The placing of concrete as well as the erection of forms for all the breakwater and the lower portions of the stairway and for filling in caves had to be done during low tides which necessitated working nights. Electric lights were erected on poles at intervals along the trestle and extension cords with lights were placed to conveniently and properly light the work.

In order to prepare the cutoff trench for that portion of the breakwater built within the cofferdam, it was necessary to unwater several times. The sandstone upon exposure to air tends to slack and considerable caving and sloughing of the sides of the trench occurred. While making the final cleanup preparatory to placing concrete this became rather serious. This was the first concrete to be placed and the truck hauling of the aggregates was poorly organized and considerable delay occurred to deliveries. These delayed and increased pressure on the west crib due to the rising tide threatened the failure of this crib. Mr. Ledbetter was on the work and did all possible to speed deliveries of concrete aggregates to enable the concreting of this portion of the cutoff and foundation. The contractor was unable to pour only the cutoff, and to elevation -6.5, before the water gained on the pumps and flooded the work. The following day, November 7, the cutoff trench

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and floor were concreted to elevation -5.0, and danger to the west crib was removed insofar as a collapse into the trench was concerned.

The only other difficulties of consequence were as follows: Delays were occasioned on December 11, 12, and 13, due to heavy seas. On December 11 the newly poured concrete of section 4 was badly washed and the inside step forms were demolished, also the outside curved form for section 3 were demolished. On December 16, the lower portion of steps of section 4 were damaged. The concrete was cut away to a uniform level and a new top to the damaged steps was poured later. On December 22 the panel forms for the outside of section 7, from the rock to elevation 6, were erected and concreted. During the night of December 23 the water got under two of these panels and cut into the newly placed concrete to the extent of about 8 inches in depth. The damaged concrete was cut away for a depth of 1 foot. These two panels were replaced and new concrete poured on December 23. The only real misalignment on the outer face of the wall occurs where these panels were reset.

The sequence of the concreting of the breakwater was as follows:

Month	Day	Section	Elevation		Remarks
			From	To	
November	6	1	Bottom	-6.5	Cutoff
"	7	1 & 2	-6.5	-5.	Cutoff and floor under sluiceways
"	8	2	-5.	-3.	Cutoff and reef crevices
"	14	1 & 2	-5.	-2(x) 1.	Between sluiceway 4 & reef
"	18	1	-5.	1.	Between bluff & sluiceway 4
"	22	1	1.	6.	
"	26	1	6.	12.	
"	28	3	Bottom	3.	Cutoff and crevices

Month	Day	Section	Elevation		Remarks
			From	To	
November	28	2	1. & 3.	4.	
"	29	2	4	6.	
December	2	2	6.	12.	
"	2	3	3.	4.	
"	2	8	Bottom	2.	Cutoff at outer end
"	3	3	3	6.	
"	4	8	2.	3.	Cutoff at outer end
"	4	6 & 7	Bottom	1.5	Cutoff
"	4	7 & 8	Bottom	3.	Cutoff
"	5	3	6.	12.	
"	8	5 & 6	Bottom	Top	Cutoff
"	8	4	Reef	1.5	Foundation - east portion
"	8	5	Reef	1.5	Foundation - east portion
"	9	4 & 5	Bottom	Top	Cutoff - remaining portion
"	10	4	1.5	6.	
"	16	6	Reef	4.5	
"	16	4	6.0	12.	
"	17	6	4.5	6.	
"	18	8	3.0	6.0	
"	18	6	6.0	12.0	
"	19	5	1.5	6.0	
"	20	8	6.0	12.0	
"	22	7	Reef	6.0	
"	23	5	6.0	12.0	
"	24	7	6.0	12.0	Last section concreted.

Note (x) Sections refer to portions of breakwater between contraction joints and are numbered from the shore outward.

Vertical contraction joints were put into the wall in accordance with plans and are located as follows:

1+58.0, 1+94.4, 2+30.7, 2+67.1, 3+03.5,
3+39.9, and 3+76.2. (See accompanying profile,
(Supplemental Sheet No. 10)

Horizontal construction joints were made by filling the inside portion of the wall 0.5 foot higher. A header of 2 x 6 inch lumber was supported against the vertical rails. On section 4 the horizontal pour was bonded by raising the center portion 0.5 foot higher than the inside or outside by placing a header along the inside and outside line of vertical steel rails. (See Photograph BP 24).

"Anti Hydro", a solution to make concrete work impervious and to hasten the setting of the cement, was added at the contractor's own expense in proportion of about 1 part Anti Hydro to 10 parts of the water used in the mix. This was added to the concrete of the last 0.5 foot of thickness of all pours exposed to the action of the waves. Very good results were obtained and the preservation of much of the concrete from destruction depended upon the quick setting of the cement due to the use of "Anti Hydro". Its use was only permitted after an investigation by the City's testing department. (See Photograph BP 38)

Upon the completion of the concreting of the breakwater, the Koehring 13-M paving mixer was removed.

CONCRETING OF CAVES

Four caves entering into the point from the south beach and two caves entering into the bluff from the pool side were completely filled with concrete to protect the adjacent structures. The concreting of these caves was carried on as an extension of the

schedule items of the contract. Cave S-1 (See Supplemental Sheet No. 7) passed entirely thru the point just west of the shore end of the breakwater. Caves S-3 and P-1 also joined by a small opening thru the point. The mixer, a Koehring 20 was set on the point above Cave S-3 and in this position mixed the concrete for caves S-1, S-2, S-3, S-4 and P-1. The excavation preparatory to concreting all caves consisted of the cutting of a cutoff trench about 20 inches wide and about 18 inches deep into the rock floor at the entrance to the cave. A slot was cut extending into the rock at the sides of the cave above the cutoff. The concrete used was the same as for the breakwater. The forms were erected somewhat above the cutoff on the outer line of the cutoff. The cutoff and entire floor of the cave, after being cleaned with fresh water, was concreted solidly. Two foot sections of 2 inch pipe were set into this first pour and set to incline inward at their tops. These pipes served as anchors for the forms which were then erected and poured the second day. Cave S-1 has been formed with 18 inch steps on its south face to facilitate access to the south beach. The upper 6 feet of the front face form for the concrete of cave P-2 was the old curved form panels from the breakwater. The top was set back 1 foot from the lower part of the form thus making a concave surface. The mixer was moved to the east end of the bluff and west of the parking for concreting the cave P-2 and the curbs and paving. There were 308.8 cubic yards of 1:2½:5 concrete poured in the caves.

STORM DRAIN

A standard storm drain cleanout was constructed in accordance with the drawing 1197-B City of San Diego-Operating Department on the existing storm drain at a point 13.3 feet south of the rear parapet wall of the stairway. From this cleanout northerly the old drain was demolished, and a new 15 inch concrete storm drain was constructed for 200 feet southwesterly to discharge on the south beach. A concrete pier was constructed over the concrete of Cave S-4 to support the outer joint of this pipe. The trench for the pipe and manhole was dug with the crane and clamshell bucket. A standard type "D" catch basin (drawing 1167 B) was constructed into the old drain at the west edge of the old concrete paving. A standard type "B" curb inlet (drawing 1165 B) was constructed into the old storm drain at the west curb at the easterly end of the project.

STAIRWAY STRUCTURE (See Photograph BP 49)

The excavation for the stairway structure was begun down to the upper platform level by hand and completed except for trimming by the crane which was equipped with a clamshell bucket. The trimming of the front of the bluff for the front retaining wall was done by pneumatic spades and the material was removed from the beach by the cranes. The old concrete steps were broken up with paving breakers and dynamite. It was necessary to carry the front retaining wall footing down to elevation 2.2 and a cutoff wall at the front edge of this footing slab was made 2.0 feet wide and carried to elevation -1.0 or about 2 feet into the rock. The footings under the lower stairway landings were poured solid. The cutoff under the retaining wall footing was returned across the ends under

the buttresses and for 18 inches into the bank under the return of the retaining wall proper. The portion of the cave under the old stairs and also of the cave at the foot of the old stairs was poured solid with concrete, after being shaped and stepped in the bottoms to retain the concrete independent of any wall later to be built up in front of these concreted caves. After the cut-off and footing slab and blocks under the lower stairway landings were concreted, forms for the front stair wall and the front retaining wall were built up. These forms were composed of the 1-5/8 x 10 inch shiplap lumber previously used for the face forms for section 1 of the breakwater. The studs were placed 24 inches centers and double 2 x 4 inch walers were set horizontally spaced 30 inches apart and held with Williams form clamps. The stairs were poured monolithic with the side walls on this entire stairway structure. The inside of the front stairway wall and the front face of the front retaining wall under the stairs were stripped and pointed before the landing at the top of the lower stairs was concreted. The forms for the entire stairway structure were built up the same as the front stairway wall and front retaining wall. To insure the proper stability and alignment to the front stairway and front retaining wall forms, 10 x 12 inch vertical posts were set at about 8 foot intervals outside the front wall forms. These posts were set into notches in the rock at their foot and were anchored at their tops by 3/4 inch anchors grouted into holes drilled into the sand rock of the back of the front retaining wall. In addition to these ties, the posts were braced with batter braces on the outside. The front wall forms were braced to these posts and a continuous 3 x 12 inch waler was put between the posts to facilitate this bracing.

The concreting of the stairway structure was done in sequences as follows:

Month	Date	Portion of Structure	Elevation	
			From	To
January	19	Front retaining wall cutoff and footing	-1.0	3.2
"	20	Lower stairway landings (solid blocks)	3.2	6.6
"	21	Portion of cave back of front retaining wall also cave west of west buttress		
"	22	Balance of cave back of front retaining wall		
"	26	Front wall, front retaining wall and buttress	3.2	10.5
"	29	Front wall and front retaining wall	10.5	19.5
"	30	East half of floor and rear wall footings	19.5	20.17
"	31	West half of floor and rear wall footings	19.5	20.17
February	6	Parapet, seat, walls and counterforts	20.17	22.75
"	9	East lower landing of outside stairs	Beach	6.0
		Rear retaining wall and stairs and end walls	22.75	28.25
"	11	Lower east outside stairs and parapet	Beach	6.0
"	13	West lower landing of outside stairs and parapet of rear retaining wall	Beach	6.0

STEPS TO BREAKWATER

The fifteen 8 x 26 inch steps leading to the breakwater were concreted as a monolith with the 4 inch footing slab and for the full width of the excavation which was 6.3 feet at the breakwater and tapering to 9.3 feet, 18 feet from the breakwater then 9.3 feet at the upper end. The 1/2 inch square reinforcing bars transverse across the 4 inch slab extended up into the side walls and were spaced at 12 inches. 3 longitudinal bars were placed in each side

wall. The side walls were poured after the steps. (See Supplemental Sheet No. 9)

PARAPET WALLS

The 8 inch parapet walls either side of the stairway structure were formed using the sawn segmental walers of 165 foot radius which were previously used on the breakwater. For the shorter radius curve 1 inch forms were used and the lumber was sprung to curve and held by the studs braced to the ground on the inside of the curve. The footings, 1 foot thick by 3 feet wide, were poured into a trench dug to neat line. The reinforcing steel consisted of 1/2 inch square bars set transversely at 12 inch centers and bent up into the inside face of the parapet. Horizontal 1/2 inch square bars were set on the outside of the vertical bars at 12 inch centers. There were 2 longitudinal 1/2 inch square bars in the footing. The 8 inch parapet wall was set so its inside or landward face was 24 inches from the landward side of the footing, thus leaving a 4 inch projection on the outside. The footings were poured first and then forms for the wall erected upon this footing slab. The alignment and original profile of this parapet wall and steps to the breakwater are shown on drawing Supplemental Sheet No. 9.

CURBS

Concrete curbs were laid out as shown on Supplemental Sheet No. 7, adjacent to the automobile parking areas. The curb line is set 21.23 feet westerly from the westerly edge of the existing 30 foot paving of Coast Boulevard. The curb has a top width of 8 inches, a total height of 24 inches, a base width of 14 inches and the top is 12 inches above the pavement. The concrete was mixed in the Koehring 20 mixer, set westerly from the easterly parking area, and wheeled in carts to a platform adjacent to the work from

which platform the concrete was shoveled into the forms. The exposed surface was plastered. Expansion joints were provided opposite those of the paving.

PAVING

The subgrade for the paving was graded with fresnos and hand finished rolled and trimmed to template. The paving is 6 inches thick of 1:2:4 concrete and was cured under water held by earth checks for 14 days after being poured. The mixer was set westerly from the easterly parking area and materials were hauled by truck and shoveled to the hopper of the mixer by hand. The concrete was distributed by carts. The old fence along the westerly edge of the paving was made over on horses into panels to act as barriers for fencing off the work. Red lights were set out at night.

EXCAVATION OF BATHING ZONE

After the pile driver was dismantled, the double drum hoist was set on the bluff between the point at the shore end of the break-water and the stairway structure. A 1 inch cable was stretched from the inside pile of the outer bent of the trestle to a "deadman" in the top of the bluff at the easterly point of bluff. A "snatch-block" was rigged on this cable with ropes to move the "snatch-block" along the cable. A 5/8 inch cable was run from the hoist thru the "snatch-block" and returned to the hoist. Attached to this cable by bridle at each end, was a "stone-boat" of 3/8" steel plate with 3 x 8 inch wooden ledges on each side. With this rig the boulders in the bathing zone area and along the beach were moved into a pile adjacent to the foot of the bluff and below the hoist. The boulders were loaded onto the "stone-boat" either by hand or rolled with bars by men working in the pool at low tide. After the boulders were gathered into a pile, a Northwest dragline equipped with boom and

a 1/2 cubic yard clamshell bucket, removed them to the south beach. This dragline was also used to remove the timbers and filling of the timber cribs, to excavate the sand and rock at the inner and outer ends of the sluiceways and to remove the material required to be excavated from the bathing zone. This latter work required the use of a dragline bucket, backhauled by the pile driver hoist rigged as for removing boulders. The material was piled on the beach in the cove in front of Cave P-1 and thence moved by clamshell bucket to the south beach. The material at the south edge of the pool required shooting. Holes were augered into the sand-rock and shot with 40 per cent dynamite. The operations of shooting the rock, dragging the material to pile on the beach and then by clamshell removing it to the south beach became a daily routine so that no material would be left on the pool beach during high tide. About 3500 cubic yards were excavated in this way.

One accident caused a delay of about 3 days during this work. On January 2, while being moved to the point to work on the west crib, the dragline got out of control and plunged off the bluff to the south beach, between Caves S-1 and S-2. The machine was dismantled, removed in pieces and hauled away. It was replaced by a larger Northwest shovel which arrived on the work January 3 and was used in salvaging the old dragline from the beach and later, when rigged with the boom from the old machine, was used to complete the excavation.

(d) EQUIPMENT:

The following is the principal equipment used by the contractor on the work:

- 1 54 foot demountable type ^{pile} driver with
- 1 40 H.P. double drum Ledge wood hoist.

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- 1 14 inch 1800 pound star bit with 16 inch drilling casing
- 1 28 inch 4200 pound star bit with 32 inch drilling casing
- 1 Rotary drill rig LeRoi engine for turntable and double drum
Ledgewood hoist with LeRoi engine all on skids
- 1 6 inch Byron-Jackson 2 stage pressure pump
- 1 4 inch open runner type Byron-Jackson sand pump
- 1 Hercules power unit Model G - 50 H.P. for sand pump
- 1 Climax power unit 125 H.P. for pressure pump
- 1 Chicago air compressor connected to 4 cylinder gas engine all
on wheels - capacity 220 cubic feet of free air per minute
- 2 Ingersoll-Rand pneumatic spades
- 1 Koehring 20 concrete mixer
- 1 Air cutoff saw
- 1 Air rip saw
- 2 Air augers
- 1 Oxygen acetylene welding outfit
- 1 Blacksmith shop outfit complete
- Miscellaneous hand tools
- 1 Koehring 13-E mixer
- 1 Koehring 20 mixer
- 1 Northwest No. 3 dragline serial No. 1044 (rented from H.G. Fenton
Material Co.)
- 1 Koehring 13-E paving mixer (also rented from H.G. Fenton
Material Co.)

(e) Power: Gas engines were used for all power except for electric lighting. Electricity for lighting was supplied by the local power company.

(f) Ten day and Monthly progress: Ten day and monthly progress reports are attached hereto.

(g) Monthly summary of progress - Estimates: The following is a statement of the monthly estimates:

Estimate	Date	Earnings	
		Month	To Date
No. 1	September 30, 1930	\$ 840.00	\$ 840.00
No. 2	October 31, 1930	3,214.50	4,054.50
No. 3	November 30, 1930	13,999.62	18,054.12
No. 4	December 31, 1930	15,376.48	33,430.60
No. 5	January 31, 1931	10,009.30	43,439.90
No. 6	February 28, 1931	7,668.86	51,108.76
No. 7	Final March 31, 1931	4,572.24	55,681.00

There is attached hereto a copy of the Final Estimate.

2-6-31

Copy/m

ELLEN BROWNING SCRIPPS
Bathing Pool for Children
at La Jolla, California.

H. N. Savage, Engineer in Charge,
624 F Street,
San Diego, California.

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COPY

San Diego, California,
July 1, 1930.

MONTHLY REPORT - JUNE, 1930. - INCLUSIVE.

In 1922, Miss Ellen Browning Scripps, Dr. J. C. Harper, Attorney in fact, representing and acting, invited my cooperation in determining the practicability and feasibility of the accomplishment of a bathing pool for children in the Ocean at La Jolla, California.

After several months of world wide research, assembly and study, a comprehensive report dated March 22, 1923 was compiled and transmitted to Miss Scripps with specific recommendations, featuring the accomplishment of a bathing pool in Ocean adjacent to and fronting the location of the present Casa de Manana Hotel.

May 1930, Captain W. C. Crandall, representing and acting for Miss Scripps and Dr. Harper invited my cooperation in the accomplishment of the projected splendid gratuity-bathing pool for children at La Jolla.

June 6, 1930, an official preliminary conference was had with Major W. H. Lanagan, District Engineer, U. S. War Department at Los Angeles, California, preliminary to an application to the U. S. War Department for permission to construct the breakwater feature of the projected bathing pool.

June 20, 1930, the construction of the projected bathing pool was authorized by Miss Scripps at the hand of Dr. Harper, Attorney in fact. The work to be administered and accomplished as a gratuity from Miss Scripps to children, under the direction of H. N. Savage, Civil Engineer at the expense of Miss Scripps. Mr. Savage's engineering, administrative and executive services in cooperation with Miss Scripps to be also a gratuity to children.

The construction of the projected bathing pool breakwater and excavation was roughly estimated to cost about \$50,000, with some additional expense for the necessary dressing stall structure.

June 20, 1930, Mr. Harold Wood, Associate Member American Society of Civil Engineers, who has had responsible breakwater and construction experience in California and Alaska was employed to act as Resident Engineer, reporting to H. N. Savage, Engineer in Charge.

June 21, 1930, formal application was made through Major W. H. Lanagan to the U. S. War Department, accompanied by the drawings as required by the Department, requesting permission to construct the

breakwater feature of the bathing pool.

The U. S. War Department's District Engineer has publicly advertised the projected construction of the breakwater and has invited inspection by abutting land owners of the drawings of the breakwater feature which were on exhibition in his office at Los Angeles up to Saturday, July 12, inclusive. It is understood that the U. S. War Department's reaction and presumably final approval may be expected about August 1, 1930.

Simultaneously, as legally required, formal applications for permission to construct the projected bathing pool were also made to each:

The State of California, Department of Public Works;
City of San Diego, Mayor and Common Council;
City of San Diego, Board of Park Commissioners, and
City of San Diego, Board of Playground Commissioners.

It is anticipated that the approval of each the State of California, the City of San Diego and its various commission departments will be in hand by the time permission is received from the U. S. War Department.

It is planned to advance the project along formal legal policies, and methods. Drawings and specifications are being drafted and after conference with and approval by Captain W. C. Crandall will be submitted to responsible contractors who have demonstrated by successful experience their qualifications and dependability for the accomplishment of the projected work. Surety bonds will be secured to protect and insure Miss Scripps in the faithful performance of the work and also to insure payment by the contractor for all material and supplies furnished in the performance of the work, and for any and all work or labor done in connection therewith.

A brief comprehensive report will be made by me about monthly for the information of Miss Scripps and her agents.

H. N. Savage,
Engineer in Charge.

HNS/f

66
ELLEN BROWNING SCRIPPS
Bathing Pool for Children
at La Jolla, California

H. N. Savage, Engineer in Charge
624 F Street,
San Diego, California.

San Diego, California,
August 1, 1930.

MONTHLY REPORT - JULY, 1930 - INCLUSIVE.

Surveys for a topographic map of the area adjacent to the Ocean Cliff faced by Casa de Mamana was begun July 7 and completed July 13. The purpose being to obtain sufficient data to enable studies to be made of the dressing stall feature and the approach to the beach. The topographic map was prepared and prints were sent to the architect, Wm. Templeton Johnson.

July 10, accompanied by the Vice President and Treasurer of Merritt-Chapman & Scott Corporation, marine contractors, I visited the site of the proposed work, conferred relative to the location and design of the breakwater. These gentlemen who have had a wide experience in breakwater construction and who were recommended as competent contractors by Captain W. C. Crandall, stated that the design of the breakwater was well chosen for this location for permanency and economy.

July 21, Wm. Templeton Johnson reported that accompanied by Colonel Bent, Colonel Robins and Major Borden, U. S. Engineer Officers, a joint inspection was made of the projected bathing breakwater with the result that the Engineer Officers concluded and announced that provided the breakwater was constructed as designed, it would stay until "Kingdom Come".

As pointed out in my report of June, it is planned to advance the project along formal legal policies. To this end, the formal permits for the construction have been received from the City of San Diego, Mayor and Common Council; City of San Diego, Board of Park Commissioners, and City of San Diego, Board of Playground Commissioners. The U. S. War Department's District Engineer has advised me, by letter, that no action can be taken upon your application until they are advised of the action upon your application by the State of California. In response to several letters and telegrams to State Officials, an offer to cooperate was secured from the Division of State Lands to which Division the matter was referred by the State Engineer. The Division of State Lands advises that there is no Legislative Act requiring the issuance of permits for breakwaters in the Pacific Ocean. Correspondence with the Division of State Lands has developed a requirement that if we occupy State Lands we must secure an Act of the Legislature giving the Division of State Lands the authority to issue a permit. It is hoped, however, to secure favorable action by the State without Legislative action.

Tracings from which the contract drawings will be made have been completed and the contract and specifications have been edited and when bound with the drawings will be submitted to Captain W. C. Crandall for his approval, and as soon as approved by him, will be submitted to responsible contractors who have demonstrated by experience their qualifications and dependability for accomplishment of the proposed work.

Mr. Templaten Johnson prepared the architectural drawing of the dressing stall feature and Resident Engineer Wood prepared the necessary tracings showing structural details for the contract drawings.

This is the second brief report which will be made by me about monthly for the information of Miss Scripps and her agents.

H. N. Savage,
Engineer in Charge.

HW/r

ELLEN BROWNING SCRIPPS
 Bathing Pool for Children
 at La Jolla, California.

H. N. Savage, Engineer in Charge,
 524 F Street,
 San Diego, California.

San Diego, California,
 September 1, 1930.

MONTHLY REPORT - AUGUST, 1930, INCLUSIVE.

Correspondence with the Division of State Lands has been continued and efforts to secure favorable action to your application before the State and U. S. War Department has continued relentlessly during the month.

Several conferences between Mr. Savage and Senator Edwin A. Mueller and others have been had to assist in securing the favorable action by the State. Help in this direction has also been given by several prominent citizens of San Diego.

Direct effort upon the part of Mr. Savage with officials in Washington, D. C. has had the result of securing approval of the Chief Engineer of the U. S. War Department. The following telegram was received on August 29:

"Washington, D.C.
 August 29, 1930 12:52 P.M.

H. N. Savage
 524 F Street,
 San Diego, California

Scripps pool approval mailed district engineer August twenty-five.

F. H. Nowell"

Ten sets of the contract and specifications have been typed and bound with letter size photographic reductions of the six sheets of drawings.

This is the third brief report which will be made by me about monthly for information of Miss Scripps and her agents.

H. N. Savage,
 Engineer in Charge.

HW/r

BRONING SCRIPPS
Pool for Children
Jolla, California.

COPY

San Diego, California,
July 9, 1930

From : Harold Wood
to : H. N. Savage, Engineer in Charge
Subject : Ten Day Report June 30 to July 9 inclusive

Surveys for a topographic map of the area adjacent to the Ocean Cliff faced by the Casa de Manana Hotel was begun July 7 and was continued to July 9.

Captain Grandall visited the site of the work during the morning of July 8.

Wood made an examination of the foundation rock of the reef and in the area to be excavated in bathing zone, at low tide July 8.

The specifications are to be changed to include 2 items of concrete. Reinforcing steel is to be furnished by the principal architect's drawings of the building will be included in the plans.

Arrangements are being made for an assistant to work with Wood. To facilitate the general direction of the work Wood is to communicate with Mr. Savage every other day.

The topographic survey will be completed on July 11 and the topographic map completed on July 12.

H. Wood (Signed)

ELLEN BROWNING SCRIPPS
Bathing Pool for Children
at La Jolla, California

H. N. Savage, Engineer in Charge,
824 F Street,
San Diego, California.

San Diego, California,
July 18, 1930

From : Harold Wood
To : H. N. Savage, Engineer in Charge
Subject : Ten Day Report July 10 to July 20, 1930.

Surveys for a topographic map of the area adjacent to the Ocean Cliff faced by Casa de Manana Hotel was completed Sunday July 13. This topographic survey was worked up and a tracing made on July 14, and prints were made for the architect for the dressing stalls structure on July 15.

On July 10 Mr. Savage visited the site of the work and a conference on the ground was had with Mr. Skofield representing Merritt-Chapman & Scott, contractors. Mr. Woodie, Treasurer of the Company from New York, was with Mr. Skofield. Mr. Skofield stated that the design of the breakwater was well chosen for this location for permanency and economy.

Mr. Skofield's company has been investigated by both Mr. Savage and Captain Crandall and found to be well experienced, and responsible.

The proposal, contract and specifications were changed to include all steel furnished by principal and to include an item of concrete for dressing stalls and steps.

Estimates of quantities involved in the above changes were made. One copy of the re-typed contract and specifications was delivered to Mr. Savage on July 17 for his approval.

It was expected that Major Wm. H. Lanagan, District Engineer, would be at Casa de Manana, on July 17, but he did not come.

It was desired to convey the information to him that the project would be willing to stand the expenses of telegrams between Major Lanagan and Washington D. C. if entirely consistent with his pleasure and convenience. Also it was desired to show him the site of the project. All of this was to further the speedy issuance of permit for the construction by the War Department. Mr. Savage conveyed the above information by letter dated July 17.

It was learned that Major H. T. Livingston of the War Department, Washington, D. C., whose approval to our project must be secured, was at Casa de Manana and had been shown the site of the project by Captain Crandall on July 17.

A letter requesting action by the State on our application for permit to construct the breakwater was sent out July 17.

The entire correspondence file on this project was reviewed by resident engineer Wood on July 17.

Architect W. Templeton Johnson has been furnished prints of the plan of the breakwater and the topography of the adjacent bluff for his use in designing the dressing stalls structure and a conference was had by Mr. Savage on July 17 and it is expected his drawing will be ready to bind in the contract and specifications about July 22.

The Merritt-Chapman Scott Company had a man, for the greater part of three days, making test borings of the foundation rock for the breakwater, to give them data to enable them to bid on the work.

Approval for the construction has been received from the Board of Park Commissioners and the City of San Diego.

Resident Engineer Wood began the rough draft of the Feature History which will be prepared as the work progresses as a record of the work.

During next ten days the breakwater will be laid out on the ground and topography of the pool area will be taken. The architect's drawings will be bound into the specifications. A tide staff will be set and checked for elevation. Investigations of contractors will be continued and every effort made to secure the necessary permits from the U. S. Government and State. Requests for bids on the work will be sent out to a selected few well experienced and responsible contractors.

Harold Wood (Signed)
Harold Wood
Resident Engineer

HW/p

ELLEN BROWNING SCRIPPS
Bathing Pool for Children
at La Jolla, California

H. N. Savage, Engineer in Charge,
524 F Street,
San Diego, California.

San Diego, California
July 29, 1930

From : Harold Wood
To : H. N. Savage, Engineer in Charge
Subject : Ten Day Report - July 21 to July 31.

On July 21 a letter was received from Merritt-Chapman & Scott Corporation signed by G. L. Skolfield, Vice-President, which requested more detail data on the proposed construction of the breakwater, dressing stalls and pool excavation. This letter was answered and additional plans set to Merritt-Chapman & Scott Corporation.

On July 22 two blue prints of the dressing stall structure were received from the architect, Wm. Templeton Johnson. Mr. Wood proceeded with the design of the structural features and reinforcing steel and prepared a specification drawing of the dressing stalls which Mr. Johnson approved and signed on July 25.

Mr. Wood made an estimate of concrete, steel and excavation for the dressing stalls, and proceeded to modify the specifications and proposed schedule to include the dressing stalls items.

On July 28, letters were received from W. S. Kingsbury, Chief of Division of State Lands relative to State permit for the construction of the proposed breakwater. The letter contained descriptions of two parcels of land leased by the State. It was found that neither of these parcels was anywhere near the La Jolla Breakwater project. The letter stated that the Legislature had not passed an act specifically requiring the issuance of permits for the construction of breakwaters in the Pacific Ocean. A letter was sent, special delivery, to Mr. Kingsbury requesting an official letter from the department, stating that no permit was required for the construction of the proposed breakwater. The proposed breakwater will occupy no tide lands as the structure joins the shore at a vertical bluff about 20 feet high.

Mr. Wood prepared a drawing showing sections of the bathing pool and thereon indicated the excavation required. On July 29 this drawing was traced to form a letter size specification drawing.

On July 24 the Board of Park Commissioners passed a resolution granting permission to Ellen Browning Scripps to construct a breakwater upon such lands as the Park Commission may have jurisdiction

as requested in application dated June 20 and signed J. C. Harper.
Certified copy of this resolution has been received.

The United States Engineers' office at Los Angeles is holding the application for permit in suspense until they are advised of the action by the State. Every effort will be made to secure some definite action by the State.

On July 17 Wm. Templeton Johnson explained the project to three United States Army Engineers at the site of the work. These engineers expressed themselves as all well pleased with the design of the proposed breakwater and stated it would last until "Kingdom Come."

Harold Wood (Signed)
Harold Wood

HW/p

LEN BROWNING SCRIPPS
Swimming Pool for Children
La Jolla, California.

N. Savage, Engineer in Charge,
14 F Street,
San Diego, California.

San Diego, California,
August 9, 1930.

From : Harold Wood
To : H. N. Savage
Subject : Ten Day Report - August 1 to August 10.

In an endeavor to secure favorable action by the State of California, for the construction of the proposed breakwater, it has developed that formal application for the use of a portion of the Pacific Ocean will be necessary. To satisfy this formality a survey was made August 3 and the following were prepared and sent on August 6 to W. S. Kingsbury, Chief of Division of State Lands:

1. Legal description of boundary of area for use and maintenance of the proposed breakwater.
2. Sheet 1 of 2 sheets accompanying original application to State on which was shown the area and tie to City monument.
3. Plan of breakwater being sheet 1 of the contract drawings on which was shown area and tie.
4. Map of adjacent subdivision on which was also shown area and tie.
5. Map of a portion of San Diego showing location of proposed breakwater.

The entire set of 6 contract drawings have been completed and on August 6 were sent to be photo-reduced-reproduced to letter size for binding with the specifications and contract.

Conferences were had with State Senator Edwin A. Mueller and with United States Senator Phil D. Swing to the end that their efforts will be added to help secure prompt action, by the State and U. S. War Department, respectively, on our application for permit to construct the breakwater.

A system of coordinates for laying out the proposed breakwater were calculated and all is now in readiness to locate the structure in the field.

HW/f

Harold Wood (Signed)
Resident Engineer.

1-9-31
COPY/m

75

ELLEN BROWNING SCRIPPS
'ng Pool for Children
La Jolla, California

H. H. Savage, Engineer in Charge
524 F Street,
San Diego, California.

San Diego, California
August 19, 1930

From : Harold Wood
To : H. H. Savage
Subject : Ten Day Report - August 11 to August 20.

Several conferences between Mr. Savage and Senator Edwin A. Mueller, who is helping to secure favorable action by the State on the application for permit to construct the breakwater, have been had. Copies of the drawings accompanying the original application have been prepared, colored and sent with a letter by Senator Mueller to the State Division of Lands.

A telephone communication from Major Lanagan's office in Los Angeles was had to the effect that by sending on additional copies of the application and drawings to the District Engineer's office in Los Angeles, it was thought possible a permit would be granted immediately. The requested data was sent out on August 11. On August 12, Mr. Savage received a telephone request for permission to change the date on the applications sent the day before to facilitate prompt action. This permission was given.

In view of the time spent by members of Mr. Savage's office staff on this project it was thought entirely proper that Mr. Wood devote some time on Water Development matters as a way of compensating for the time spent on this project by other members of the staff. This was approved by Mr. Savage and Mr. Wood, when not engaged on the preparation of data or arranging for conferences, has devoted some time to work not directly bearing on the bathing zone breakwater.

Harold Wood (Signed)
Harold Wood

HM/p

ELLEN BROWNING SCRIPPS
Bathing Pool for Children
at La Jolla, California.

H. N. Savage, Engineer in Charge
524 F Street,
San Diego, California.

San Diego, California,
August 30, 1930.

From : Harold Wood
To : H. N. Savage
Subject : Ten Day Report - August 21 to August 31.

During this period conferences between Mr. Savage and Senator Edwin A. Mueller, State Legislators and United States Congressmen have been had to the end that favorable action by the State of California to the application for permit to construct the breakwater may be secured.

Several prominent citizens of San Diego have contributed help through various State officials to the securing of the State permit for the construction.

Direct effort upon the part of Mr. Savage with officials in Washington, D. C. has had the result of securing approval of the Chief Engineer of the United States War Department for the construction of the breakwater. The following telegram was received on August 29:

"Washington, D. C.
August 29, 1930 12:52 P.M.

H. N. Savage,
524 F Street,
San Diego, California.

Scripps pool approval mailed district engineer August twenty-five.

F. H. Newell"

The drawings for the contract and specifications, consisting of six sheets have been photographically reproduced to letter size to bind into the contract and specifications. Five additional sets of the notice to bidders, proposal, contract and specifications have been typed, making ten sets in all. These ten sets together with the letter size drawings have been completed and bound.

HW/r

Harold Wood (Scripps)
Harold Wood

1-9-31
copy/m

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ELLEN BROWNING SCRIPPS
Swimming Pool for Children
La Jolla, California.

H. N. Savage, Engineer in Charge
524 F Street,
San Diego, California.

San Diego, California
September 9, 1930.

From : Harold Wood
To : H. N. Savage
Subject : Ten Day Report - September 1 to September 10.

During this period a permit, from the War Department, for the construction of the La Jolla Breakwater, dated September 2, was received. Also a letter dated September 4 was received through Senator Leroy A. Wright from Attorney General U. S. Webb. The essential parts of this letter follow:

"If the tide lands be involved the Federal Government's permit also will be required, but it will not furnish the complete authority, nor is any department of the State Government vested with the authority to lease, grant, or issue permits affecting any part of the tide lands."

"- - - it would require action by the State to restrain or cause abatement of such structure, and I am quite sure no such action would be taken, nor would it be justified, and the action of the legislature could follow when it meets again."

Contract drawings and specifications for the work have been released to the following contractors, who have been invited to bid on the work. The bids are to be received at Mr. Savage's office until noon September 10.

Merritt, Chapman-Sectt Corporation of San Pedro.
Healy-Tibbitts Construction Company of San Francisco.
H. G. Fenton of San Diego
W. M. Leadbetter & Company of Los Angeles
Chas. Steffgen of San Diego.

Considerable time has been spent during this period in conferences with representatives of these contractors, except W. M. Leadbetter & Co., whom to date, has not been heard from.

Mr. Savage called on Healy-Tibbitts Construction Co. in San Francisco and thus secured their interest in bidding. Mr. Savage also conferred with Attorney General U. S. Webb.

HW/f

Harold Wood (Signed)
Harold Wood

9-31
copy/m

LIEN BROWNING SCRIPPS
Swimming Pool for Children
at La Jolla, California.

COPY

H. N. Savage, Engineer in Charge,
24 F Street,
San Diego, California.

San Diego, California,
September 19, 1930.

From : Harold Wood
To : H. N. Savage
Subject : Ten Day Report - September 11 to September 20, 1930.

During this period, a letter from Attorney General, Honorable U. S. Webb was received by Mr. Savage; also Mr. Savage addressed a letter to U. S. Webb and a reply was had relative to the construction of the breakwater.

On September 15, after conference with Captain W. O. Grandall, W. M. Ledbetter & Company of Los Angeles, were awarded the contract for the construction. Bonds were executed on this day by W. M. Ledbetter & Company and Indemnity Insurance Company of North America by Austen G. Brown, attorney-in-fact. The attorney for Miss Scripps reviewed the contract, bonds and specifications, and on September 16, Captain W. O. Grandall signed the contract for Miss Scripps as her Agent.

On September 17, the first of the contractor's equipment arrived at the site of the work. The contractor's forces to date have consisted of twelve men, including carpenter, foreman, Sam Heary, and superintendent, Carl Gadeburg.

A fence has been erected outside the concrete paving, fencing off the site of the work. A water line has been laid; a temporary building to house office, blacksmith shop and tools has been erected.

A cement shed of 2 carload capacity is being built on the left or south side of the bluff.

On September 19 the contractors certified checks accompanying bids were returned.

On September 19 Mr. J. G. Wright, Vice President of the W. M. Ledbetter & Company visited the work and outlined to Mr. Wood, resident engineer, the details of construction methods. Mr. Wright also was in conference with Mr. Savage.

A pile driver is being assembled on the point on the bluff and materials for a pile trestle have been arriving each day.

The next ten day period will see the pile trestle under way

outward from the point with tops of caps at elevation 20, and entirely over the site of the breakwater. The next work will be the erection of two timber cribs on each side of the breakwater at the shore end, thus closing off the gap between the bluff and the reef.

A complete experience record of the contractor, W. M. Ledbetter & Company and their proposed methods for handling this work were delivered with a duplicate copy of the contract to Captain W. C. Grandall.

Harold Wood (Signed)
Resident Engineer.

HW/1

1-9-31
copy/m

ELLEN BROWNING SCRIPPS
Bathing Pool for Children
at La Jolla, California.

COPY

H. N. Savage, Engineer in Charge,
524 F Street,
San Diego, California.

San Diego, California,
September 29, 1930.

From : Harold Wood
To : H. N. Savage
Subject : Ten Day Report - September 21 to September 31, 1930.

During this period, the contractor has completed assembly of the pile driver and continued construction of his temporary false work consisting of a five pipe bent trestle reaching from the point of the bluff at the shore end of the breakwater, across the open channel between the reef and bluff. This work is progressing in a northerly direction. Holes for the piling are being drilled into the sand rock to about - 15. The tops of the caps of the false work are set to elevation 20.

The contractor's equipment is well adapted to the work and the crew of eleven men and Superintendent are apparently well skilled.

The cement shed has been completed.

The center line of the breakwater with the exception of the outer 80 feet has been laid out on the reef. Grades for all false work are being given as the work progresses.

The next ten day period will see the trestle advanced over the reef. There will only be two piles per bent required for the portions over the high parts of the reef and three piles per bent over the lower sections of the reef. The coffer dam cribs will be built under the false work caps and lowered into place across both sides of the channel between the bluff and the reef. A trench will be cut in the sandstone bottom for founding the lower members of the cribs. After the cribs are completed and backfilled the space between the cribs will be partially unwatered at low tide to permit hand excavation and cleaning up and preparation of foundation. A 6" pump for pumping sand and a 4 inch high pressure centrifugal pump arrived on the work and also a large 6 cylinder gasoline power plant for driving the pumps.

The drilling of the holes for the piles about 10 feet deep has taken an average of about 2 hours per hole.

Cement will be arriving in a few days to permit time for the necessary tests.

HN/r

Harold Wood (Signed)
Resident Engineer.

ELLEN BROWNING SCRIPPS
Bathing Pool for Children
La Jolla, California.

H. N. Savage, Engineer in Charge,
524 F Street,
San Diego, California.

San Diego, California,
October 11, 1930.

From : Harold Wood
To : H. N. Savage
Subject : Ten Day Report - October 1 to October 10, 1930.

During this period, the contractor has completed the pile trestle to within 60 feet of the outer end of the reef. The bents forming this trestle are composed of three piles set an average of about 6 feet into the rock of the reef, braced with 4-3x12 sash braces to a double 3x8 girt set 5 feet below the top of the caps which are at elevation 20.00.

The crew has been increased to 18 men including the superintendent.

There are 1200 sacks of cement in the warehouse at the site of the work. Sample of the cement is undergoing test.

The west crib of the coffer-dam at the channel, between the bluff and the reef, was lowered to place October 9, and loaded with sacks of sandy clay from the top of the bluff at the site of the proposed ramp. The sides of the crib were raised 5 feet and 3x8 lagging driven along the inside face of the west wall of the crib, on October 10. Additional sacks of sand were added and the crib blocked to the bluff and to the piles.

The engineering work accomplished during this period by Wood and Bonham consisted of completing of the layout of the center line of the breakwater, the establishing of a working base line for the cross sections and the cross sectioning of the foundation area from the outer end of the proposed breakwater to the seaward side of the channel. A study of these cross sections was made for determination of the height of the toe-wall. The outside or seaward side of the toe-wall was then laid out on the reef from the outer end of the proposed structure to the seaward side of the channel.

During the next ten day period it is anticipated that the trestle will be completed, the driver will be turned around and will be fitted with a boom and put to work on the excavation of the foundation across the channel. The east coffer-dam crib should be completed. The rotary drill should be at work on the drilling of the holes for the steel rails.

Mr. C. W. Crandall is a daily visitor to the work and Mr. Savage has made inspections and conferred with Wood on the work on October 5, 10 and 11.

Orders for the steel rails and the reinforcing steel will be placed within the next few days.

Harold Wood (Signed)
Resident Engineer

ALLEN BROWNING SCRIPES
Bathing Pool for Children
at La Jolla, California.

L. N. Savage, Engineer in Charge,
524 F Street,
San Diego, California.

San Diego, California,
October 20, 1930.

from : Harold Wood
to : H. N. Savage
subject : Ten Day Report - October 11, to October 20, 1930.

1. During this period the contractor has completed the 21 bent pile trestle to the outer end of the reef. On October 15, the pile driver was turned around, moved shoreward and began drilling the 32 inch diameter holes for the cutoff trench at a point 10 feet seaward from the outer end of the shore tangent. Photographs were taken October 15.

2. The two timber cribs forming the cofferdam at the channel between the bluff and the reef have been completed and the loading with sacks of earth completed on the west crib. The east crib is being loaded with material removed for the shoreward end of the breakwater. 70 cubic yards of excavation for the bathing stalls was sacked and moved into the west crib. This excavation was stopped October 13.

3. The order for steel rails was placed with Shannahan Bros., Inc. of Los Angeles who were the low bidder. The order was only placed after inspection of the steel by Wood on October 13, and calls for 31.77 tons at \$26.00 per ton.

4. The order for reinforcing steel was placed with H. G. Fenton Material Company of San Diego who were the lowest bidders, and calls for 9980 pounds at \$2.95 per cwt.

5. The construction force was increased to 25 men on October 14.

6. The drilling for the cutoff wall has progressed since October 15, from a point 10 feet seaward from the outer end of the shore tangent, across the channel for 41 feet and to elevation -15.0.

7. The engineering work accomplished during this period by Wood and Bonham consisted of the completing of all cross sections of foundation area except across the channel. The channel was sounded using a 1½ inch jet under 150 lbs. per square inch pressure, and from these soundings determined the depth and position of the cutoff wall. The outer face of the cutoff wall is set 10.54 feet seaward from the center line of the breakwater and is being drilled to -15.

8. During the next ten day period should see the cutoff trench drilling 70 per cent complete and the drilling for the rails underway and the foundation cleaned and concreted for the channel of the breakwater.

Harold Wood,
Resident Engineer

1-8-31
Copy/m

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ELIEN BROWNING SCRIPPS
Swimming Pool for Children
La Jolla, California.

H. H. Savage, Engineer in Charge,
524 F Street,
San Diego, California.

La Jolla, California
October 30, 1930.

From : Harold Wood
To : H. H. Savage
Subject : Ten Day Report - October 21, to October 31, 1930.

1. During this period the contractor has drilled the 32 inch diameter holes for the cutoff trench from the shore end of the breakwater out for 92 feet or 37 percent completed. The excavating of the top average 1.5 feet of depth has progressed ahead of the drilling for 150 feet.

2. The pile driver has been rigged with a boom and a clam-shell bucket and has been excavating for the last 4 days within the coffer-dam on the channel section foundation and cut-off trench trimming.

3. Three temporary concrete bulkheads have been poured across the channels thru the reef to cutoff the flow of water into the coffer-dam.

4. The first steel rails were delivered by Shammahan Bros. Inc., of Los Angeles on October 26. Hauling will continue until the 31.77 tons are delivered which is the full order.

5. The construction force has been increased to 25 men and during this period the force has been split into two shifts with 5 men of the 25 men working during low tide a night.

6. A rotary drill rig arrived on the work and began drilling the 7 inch diameter holes for the steel rails at the outer end of the reef, on October 22, and has drilled 47 holes to October 28, when the drilling discontinued until excavation for the channel section foundation could be completed. This work is 36 per cent complete.

7. 1200 sacks of cement arrived October 27, making two car loads or 600 barrels on the work.

8. The engineering work accomplished by Wood during this period consisted of checking concrete forms, completion of all cross sections for foundation excavation calculations. Blotting and computing quantities for estimate 2. Keeping records and posting progress, laying out drill holes and cutoff trench.

9. The next 10 days should see the foundation portion of the channel section poured and the concrete poured to elevation $\frac{1}{2}$ l.

10. A 13-H Kookring 18 cubic foot concrete mixer arrived October 28.

1-8-31
copy/m

84

ELIEN BROWNING SCRIPPS
Bathing Pool for Children
At La Jolla, California.

H. N. Savage, Engineer in Charge,
524 F Street,
San Diego, California.

San Diego, California,
November 8, 1930.

From : Harold Wood
To : H. N. Savage
Subject : Ten Day Report - November 1 to November 9, inc.

1. During this period the Contractor has continued drilling, trimming and cleaning the cut-off trench from the shore end of the structure for 94 feet and has drilled an additional 20 feet beginning at a point 133 feet out on the structure and progressing shoreward. This drilling is now 42 percent complete.

2. The drilling of the holes for the rails was discontinued until November 8 when it was resumed in the channel section of the structure. The drilling of holes is 39 percent complete.

3. On November 6 the cut-off trench and a portion of the channel section foundation was concreted to elevation - 4.0. On November 7, the floor of the channel section forming the inverts of the sluiceways was concreted to elevation - 5.0.

4. Concrete aggregates are batched, 4 to the truck, and delivered directly to the concrete mixer. Some 30 cubic yards of aggregate is stored for the concreting of the rock seams in that portion of the reef lying adjacent to the outside of the channel which will be done November 8.

5. The contractor's force has consisted of 25 men until November 6 when a mixer man was added.

6. The engineering work during this period consisted of computations for the second progress estimate, upon which payment to the contractor is based. Posting of progress, general supervision and laying out of the work.

7. The next ten days should see the second section of the breakwater concreted to elevation + 4. The channel section completed to + 1 and the foundation and cutoff trench completed for the third section of the structure. (By sections is meant the 36 foot lengths of structure between contraction joints, numbered from the shore end outward.)

HW/m

Harold Wood (Signed)
Resident Engineer.

ELLEN BROWNING SCRIPPS
Swimming Pool for Children
at La Jolla, California.

H. N. Savage, Engineer in Charge,
524 F Street,
San Diego, California.

San Diego, California,
November 20, 1930.

From : Harold Wood
To : H. N. Savage
Subject : Ten Day Report - November 10 to 20, incl.

1. During this period the contractor has progressed the drilling of the cutoff trench to a point 83 feet from the outer end of the breakwater. This drilling is now 77 per cent complete. The trimming and completion of the trench is complete for 92 feet or 29 per cent.

2. The drilling of the holes for the steel rails has progressed so there remains 14 holes to drill. This work is 89 per cent complete. The vertical rails for Sections 1 and 2 have been set and grouted. The horizontal rails for Section 1 are in place, and 7 sets of rails have been placed in the outer end of the reef. The placing of steel rails is now 33 per cent complete. The entire order of 31.77 tons of steel rail has been delivered to the work.

3. Concrete has been poured for Section 1 to the tops of the sluiceway openings and the seams in the reef and the cutoff trench in Section 2 have been concreted to elevation +3. This brings the concrete work all above elevation 0.0 with the exception of three short sections of steps which are required at three crevices in the reef, and the cutoff wall. The concrete work is now 26 per cent complete. This was the most important part of the entire work and certainly the most costly to the contractor.

4. The contractors force has been increased since November 15 to 27 men as the rotary drill for the rail holes has been carried on night and day.

5. The engineering work during this period consisted of inspection and checking all forms and inspection of placing all concrete. Progress reports, computations for quantities for the regular monthly estimate, setting of grades and general supervision of the layout of the work has gone ahead as routine.

6. The next ten day period should see the cutoff trench and rail hole drilling completed. The cutoff trench for Sections 4 and 5 concreted and Section 1 complete ready for the railing.

Harold Wood
Engineer

-31
y/m

ELLEN BROWNING BROWN
Bathing Pool for Children
at La Jolla, California.

H. M. Savage, Engineer in Charge,
524 F Street,
San Diego, California.

San Diego, California,
November 29, 1930.

From : Harold Wood

To : H. M. Savage

Subject : Ten Day Report - November 21 to 30, inclusive.

1. During this period the contractor has completed the drilling of the cutoff trench. The trimming of this trench and final excavation is completed to a point 180 feet from the outer end of the breakwater or 41 per cent complete.

2. The drilling of the holes for the steel rails and setting and grouting of the rails is completed. The placing of the horizontal rails is 37 per cent complete.

3. The excavation for the foundation of the breakwater is complete except for bend trenches.

4. Concreting of Section 1 is completed. Section 2 is completed to within 6 feet of its top. Section 3 is concreted to elevation +3. The cutoff trench is concreted to 180 feet from the outer end of the breakwater. Concrete in the structure is 31 per cent complete.

5. The contractor is preparing to remove the pile driver, 30 inch casing and bits and the drill rig. The hoist from the drill rig will be used on the removal of rock from the bathing zone. The contractor's force has averaged 26 men this period.

6. The engineering work, during this period, consisted of inspection and checking all forms and placing of all concrete. Progress reports, computations of quantities for the monthly estimate, setting of grades and general supervision of the layout of the work has gone ahead as routine.

7. During the next 10 day period the cutoff trench should be completed and concreted. Sections 1, 2 and 3 completed and Sections 4 and 5 concreted to elevation +4.

Harold Wood
Resident Engineer.

HW/r

ELLEN BROWNING SCRIPPS
Bathing Pool for Children
La Jolla, California.

H. N. Savage, Engineer in Charge
524 F Street,
San Diego, California.

La Jolla, California,
December 10, 1930.

From : Harold Wood
To : H. N. Savage
Subject : Ten day Report - December 1 to 10, inclusive.

1. During this period the contractor has completed the out-off trench excavation and has concreted it for its entire length and to full height.

2. The drill rig and the jet pump used on the drilling of holes for the rails have been removed from the trestle and loaded out to some other work. The placing of the vertical steel rail is complete and the placing of the horizontal steel is 72 per cent complete.

3. The foundation excavation under the base of the breakwater has been completed. The excavation at the shore for clearance at the sluiceways remains to be done. Excavation is 54 per cent complete. ★

4. The concreting of the breakwater has progressed with Sections 1, 2 and 3 completed and the foundation portion of Sections 4 and 5 concreted. The concrete in the breakwater is 52 per cent complete. The forms have been removed from Section 1 and a portion of Section 2.

5. The gasoline hoist from the pile driver, which has been removed from the trestle, is being used to drag boulders from the bathing zone area to the adjacent beach in the pool.

6. The contractor's force has consisted of 26 men during this period. Some time was lost on December 8 due to heavy ground swells running. Also about three hours per day has been lost the last three days from the same cause.

7. The engineering work, during this period, consisted of inspection and checking all forms and placing of all concrete. Progress reports, computations of quantities for the monthly estimate, setting of grades and general supervision of the layout of the work has gone ahead as routine. Mr. Savage visited the work November 30 and December 5. Dr. Harper visited the work in the evening of December 5 and the morning of December 6.

8. During the next 10 days the contractor expects to complete Sections 4, 5 and 8, and to have the bathing zone cleared of rock.

HW/f

Harold Wood
Resident Engineer.

1-3-31
Copy/m
ELLEN BROWNING SCRIPPS
Bathing Pool for Children
at La Jolla, California.

H. N. Savage, Engineer in Charge
524 F Street,
San Diego, California.

La Jolla, California,
December 19, 1930.

From : Harold Wood
To : H. N. Savage
Subject : Ten Day Report - December 11 to 20, inclusive.

1. During this period the contractor has continued the concreting of the breakwater and has completed Sections 1, 2, 3, 4 and 6 and has concreted Sections 5 and 8 to elevation 6. The concrete in the breakwater is 71 per cent complete.

2. Boulders are being dragged from the bathing zone to a pile on the beach within reach of a dragline which will be used later to remove the boulders to the beach south of the bathing beach. This work was begun on December 15.

3. There was no work on December 11, 12 and 13 because of heavy seas. Step forms on Section 4 and outer curve forms on Section 3 were demolished.

4. An extension of time of completion to January 30, 1931 was granted W. M. Ledbetter & Company, the contractor. The approval of this extension was concurred in by the Indemnity Insurance Company of North America, the bonding company.

5. As a result of a conference had on December 16, between Mr. Savage, Dr. Harper and Captain Grandall certain caves in the bluffs adjacent to the bathing zone are to be concreted. Improvements along the fronting bluff above the bathing zone and a modification of the bathing stalls structure to eliminate the stalls but to retain the steps and parapet walls were decided. Resident Engineer Wood was instructed to prepare drawings and estimates of these improvements. These drawings and estimates are being prepared.

6. Inspection and checking of all forms and placing of all concrete, progress reports, computations of quantities for the monthly estimate, setting of grades and general supervision of the layout of the work has gone ahead as routine. Mr. Savage visited the work on December 16. Mr. Pyle from Mr. Savage's office visited the work on December 19.

7. During the next ten days the contractor expects to complete all concrete in the 8 sections of the breakwater. The bathing zone should be clear of all loose rock and the start made on removal of the rock from the bathing zone beach to the beach south of the point.

HW/r

Harold Wood
Resident Engineer.

ELLEN BROWNING SCRIPPS
Bathing Pool for Children
at La Jolla, California.

H. N. Savage, Engineer in Charge
524 F Street,
San Diego, California.

La Jolla, California,
December 30, 1930.

From : Harold Wood
To : H. N. Savage
Subject : Ten Day Report - December 21 to 31, inclusive.

1. During this period the contractor has completed the concreting of the breakwater proper. The last section was completed the night of December 24.
2. There remains painting and cleaning up to do on the breakwater.
3. Materials for the pipe railing are on the work.
4. The pile driver hoist has continued dragging boulders from the pool and there are 270 cubic yards now piled on the beach.
5. The walkway and all lower girts and sash braces on the trestle have been removed.
6. The contractor's force was reduced to 16 men after December 24.
7. A dragline was moved onto the work on December 29 and loaded the pile driver and moved the stock pile of concrete aggregates to shallow bunkers built near the point of the bluff.
8. A 2-sack concrete mixer was moved onto the job on December 29 and the Keshring mixer was moved off the work.
9. A start was made December 29 on preparing for concreting the caves on the south side of the point. This work was ordered by Mr. Savage on December 23.
10. The engineering work progressed as usual and in addition to the routine work cross sections of the pool and pool boulders were made. A drawing on tracing linen was prepared to show additional improvements along the bluff and an estimate of cost of these improvements in detail has been prepared. Measurements for quantities for all caves has been made upon which the above estimates are based. Grillages and gates for the 4 sluiceways are being built, in accordance with plans prepared by Wood.

-2-

11. Mr. Savage visited the work and conferred with Mr. Wood on December 23 and 26.

12. The next ten days should see the pool cleared, the south caves concreted, excavation for steps complete and the timber cribs and trestle removed.

Harold Wood.

LEN BROWNING SCRIPPS
ing Pool for Children
Jolla, California.

N. Savage, Engineer in Charge,
4 F Street,
San Diego, California.

La Jolla, California,
January 10, 1931.

From : Harold Wood
To : H. N. Savage
Subject : Ten Day Report - January 1 to 10 inclusive.

1. During this period the contractor has made excavation for the cutoff trenches in caves S-1, S-2, and S-3 and has concreted the cutoffs of these caves above mean tide.

2. During low tide pointing has been done on the breakwater. This work is now about 60 per cent complete.

3. About 80 per cent of the timber in the trestle has been removed.

4. The boulders piled on the pool beach were removed by a dragline and about 80 per cent were loaded onto Park Commission's trucks and hauled and dumped onto the south beach adjacent to the highway. The remainder were deposited on the south beach opposite cave S-4.

5. The west crib began to show movement due to flotation on January 2. The dragline while being moved to the point preparatory to remove the west crib timbers, went off the bluff and landed on its side on the south beach opposite caves S-1 and S-2. On January 3 a new Northwest shovel from H. G. Fenton Material Company was delivered to the work and was used in removal of the dragline from the beach. This work was completed and the old machine loaded on trucks and removed from the work the following day.

6. Temporary tie rods were installed between the piles on either side of the west crib on January 2 and additional wedging and blocking was done. On January 6 this west crib began to break up. The shovel was rigged as a dragline and began removal of the west crib. The timbers of both cribs with the exception of the piles were removed and hauled away from the work by January 8. Rock from the east crib and point at inside of sluiceways is being removed by the dragline.

7. The 4 outer grillages have been completed and are ready for final coat of Hermetic. Work of framing the 4 gates was begun January 6.

8. Excavation on the steps structure was resumed by hand and with pneumatic spades. The dragline has piled the excavated material on the bluff ready for making the backfill later.

9. The redesign of the dressing stalls structure has been made and tracing on linen is being prepared.

10. Correspondence relative to the completion of landscaping and parking has been interchanged.

11. H. N. Savage, W. M. Ledbetter, Captain W. C. Grandall and W. A. Stebbins visited the work January 3.

12. The anticipated progress for this period as given in the previous ten day report fell short of accomplishment due to the delays occasioned by the accident to the dragline. The next ten days should see the south caves concreted and the footing and front retaining wall and floor of steps structure poured.

Harold Weed
Resident Engineer.

HW/p

4/30/31
Copy/m

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EILEEN BROWING SCRIPPS
Bathing Pool for Children
At La Jolla, California

COPY

H. N. Savage, Engineer in Charge
524 F Street
San Diego, California.

2448 Adams Avenue
San Diego, California
January 19, 1931

From : Harold Wood
To : H. N. Savage
Subject : Ten Day Report - January 11 to 20 inclusive

1. The point of the bluff was shot and excavated at the inside end of the first sluiceway and the last of the timbers of the east crib were removed leaving only the piles.

2. Advantage has been taken of the low tides during this period to blast the rock in that portion of the pool to be excavated. ★
Excavation with a drag line bucket was begun January 19. The material excavated is being temporarily deposited on the beach in front of Cave P-1 and then rehandled to the beach south of the point.

3. The excavation for the cleanout box and storm drain was made January 12 by drag line using a clamshell bucket. The trimming was done by hand. The concrete pipe and cleanout box were placed and backfilled on January 14.

4. The blacksmith work on the gates and inner grillages was continued during this period. ★

5. The work of concreting the caves S-1, S-2 and S-3, which was interrupted by the drag line falling onto the beach, was resumed January 13 and these caves were completely concreted January 16. The runways and sills at the point were removed and the mixer moved to the east end of the stairway structure.

6. Excavation for the stairway structure was completed January 19 and the concreting completed for the footing slab of the front retaining wall.

7. The engineering work during this period has consisted of supervision and inspection of all work accomplished, setting all grades and points for the structures and preparation of drawings of the redesigned dressing stalls structure to form stairway structure. Harold Wood, Resident Engineer, conferred with members of the Ledbetter Company, contractors for the work, relative to the balance of the work to be done along the bluff.

8. Mr. H. N. Savage visited the work on January 10 and January 17. Mr. W. A. Stebbins also visited the work on January 17 and 19.

9. There has been an average of 20 men employed on the work during this period.

10. It is expected that the bathing pool excavation and the stairway structure will be completed during the next ten days. This will complete the original contract work with the exception of the pipe railing on the breakwater.

Harold Wood
Resident Engineer

HW/p

4/20/31
COPY/m

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MILLEN BROWNING SCRIPPS
Bathing Pool for Children
at La Jolla, California.

H. N. Savage, Engineer in Charge
524 F Street,
San Diego, California.

San Diego, California.
January 31, 1931.

From : Harold Wood
To : H. N. Savage
Subject : Ten Day Report - January 21 to 31 inclusive.

1. Material from the point of the bluff has been removed from the inside end of the sluiceways and the remaining timber and concrete of the west crib have been removed and the bottom both inside and outside the breakwater excavated below the bottom of the sluiceways. A

2. Work on dragging material from the pool was continued during this period and a total of 722 cubic yards were excavated therefrom as a part of the original contract.

3. The dragline was employed on an hourly basis to remove the excess sand from the beach and bar adjacent to the pool. This work was begun January 22 and was completed in the morning of January 31. About 3500 cubic yards of sand was removed by dragging to a pile in front of cave P-1 during low tide then removing the pile by clamshell bucket to the south beach. The entire bar was lowered about 5.5 feet. This is now about 2 feet lower than before any construction work started. The top of the lowest part of the bar is now -1.0. The beach near the steps has been lowered 6.5 feet.

4. The grillages and gates were completed January 23 and the gates were set into the slots on January 24. The gates are blocked up so as not to obstruct the sluiceways and are set so the flap gates open west. A

5. Excavation for the cutoff for cave P-2 was begun January 27 and was completed and concreted January 29.

6. The stairway structure has been concreted from the beach upward to and including the platform or floor at elevation 20. The counterfort footings are also concreted.

7. The inner and outer grillages were moved out onto the breakwater January 26. They have not been set into position in the sluiceways as yet.

8. An average of 16 men have been engaged upon the work during this period.

9. Mr. J. C. Wright, Vice-President for the W. M. Ledbetter & Company, and Mr. Ledbetter visited the work on January 29 and conferred with resident Engineer Wood relative to the remaining work to be done along the bluff.

10. Mr. Jorgenson, City Engineer of San Diego, visited the work on January 22. Mr. Savage arranged for the necessary legislation at Sacramento during this period and visited the work January 31. Mr. W. A. Stebbins visited the work January 24, 27 and 28.

11. It is expected that the stairway structure will be completed and caves S-4, P-1 and P-2 concreted during the next 10 days. The parapet wall and ramp and concrete curb should also be completed.

Harold Wood
Resident Engineer

HW/p

4/28/31
Copy/m

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ELLEN BROWNING SCRIPPS
Bathing Pool for Children
at La Jolla, California

H. N. Savage, Engineer in Charge
524 F Street,
San Diego, California.

La Jolla, California
February 9, 1931.

From : Harold Wood
To : H. N. Savage
Subject : Ten Day Report - February 1 to 10, inclusive.

1. The four outer sluiceway grillages and the lower sections of the inner grillages have been set in place.

2. The sand in the bathing zone remains at about elevation -1.0 at the lowest point of the sand bar. The width of the bar has increased about 30 feet during the last few days and is incroaching upon the deep pool to the east.

3. The forms for the concrete at cave P-2 have been removed.

4. The stairway structure has been concreted to elevation 28.25. The east landing at the beach has also been concreted. The forms for this work were underway during this period.

5. An average of 16 men have been engaged during this period. The rain interrupted the work February 4 and the forenoon of February 5.

6. The pipe railing has been erected on the breakwater and is being grouted into place.

7. Excavation for the steps to the breakwater is 80 percent complete.

8. Mr. Savage visited the work on February 7. Mr. Templeton Johnson, the architect for the stairway structure, visited the work and inspected this structure and the revised plans- supplemental Sheet No. 8, on February 7. Mr. Melville Dozier, Jr., manager of the Los Angeles division of the General Contractor's Association visited the work February 9.

9. It is expected that the stairway structure will be completed during the next ten day period.

Harold Wood (Signed)
Resident Engineer.

2/20/31
Copy/m
ELLEN BROWNING SCRIPPS
Bathing Pool for Children
at La Jolla, California.

H. N. Savage, Engineer in Charge
524 F Street
San Diego, California.

San Diego, California.
February 19, 1931.

From : Harold Wood
To : H. N. Savage
Subject : Ten Day Report - February 11 to 20 inclusive.

1. During this period the contractor has completed the concreting of the lower two landings and steps to the beach at the footing of the stairway structure. The upper parapets of the stairway structure were also concreted thus completing all concrete in this structure proper. The stripping and pointing is also being done.

2. The pipe railings on the breakwater have been completed, grouted into place, cleaned and painted two coats of Hermastic paint.

3. The concrete steps leading to the breakwater and the adjacent parapet walls have been concreted and stripped.

4. The west parapet wall, between the stairway structure and the steps leading to the breakwater, was laid out, the footing excavated and concreted.

5. Cave P-1, under the point of the bluff was concreted. Cave S-4, on the west side of the point of the bluff, was concreted. A pier built above this concrete supports the outer end of the storm drain.

6. A slip scraper operated by the small hoist has been used to backfill the material back of the stairway structure. This backfill is now 80% complete.

7. The cleaning up of the breakwater, reef and rocks adjacent to the stairway structure has been going on.

8. Mr. Savage visited the work on February 15. Mr. Jorgensen, City Engineer, visited the work on February 19.

9. The following work remains to be done:

- (a) 21 foot strip of parking area paving.
- (b) Curb adjacent to parking area
- (c) Construction of curb inlet and catch basin into storm drains
- (d) Concreting of upper part of west parapet wall and all of the east parapet wall.
- (e) Grading and leveling up the area between the curb and the parapet walls.

Harold Wood (Signed)

Resident Engineer

4/30/31
Copy/m

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MILLEN BROWNING SCRIPTS
Bathing Pool for Children
at La Jolla, California

H. N. Savage, Engineer in Charge
524 F Street,
San Diego, California.

San Diego, California
February 28, 1931

From : Harold Wood
To : H. N. Savage
Subject : Ten Day Report - February 21 to 28, inclusive.

1. During this period the contractor has completed the concreting of the east parapet wall and has completed the backfilling of the stairway structure and parapet walls.

2. The subgrading, trimming and rolling of the subgrade for the paving has been completed and the curbs are 25 per cent completed.

3. The surplus material, - (about 110 cubic yards) removed from the paving area has been spread over the area to be parked and the ground brought to proper elevation adjacent to the parapet walls.

4. An extra work order No. 4 has been issued to cover the excavation and curing of the concrete paving. An extra work order No. 5 has been issued to cover hauling and spreading of material to complete the filling of the area to be parked.

5. The curb inlet at the east end of the parking area and the catch basin opposite the stairway structure has been concreted.

6. Mr. Savage visited the work on February 21. Dr. Harper visited the work on February 27.

7. The work remaining to be done consists of completion of the curbs and paving and the hauling and leveling of the material for the park area.

Harold Wood
Resident Engineer

HW/p

ELLEN BROWNING SCRIPPS
Bathing Pool for Children
at La Jolla, California

H. N. Savage, Engineer in Charge
524 F Street,
San Diego, California.

March 10, 1931.

From : Harold Wood
To : H. N. Savage
Subject : Ten Day Report - March 1 to 10, inclusive.

1. During this period the contractor has completed the concrete curb adjacent to the parking area. The curb inlet was also concreted. Cave P-2 was completely concreted.

2. Captain Crandall requested a 7 inch extension on the west wall of the steps to the breakwater to meet the shore end of the outer pipe railing on the breakwater. This was completed.

3. Pouring of concrete paving for the parking area was begun on March 3 and completed March 4.

4. On March 4, W. Templeton Johnson, Captain Crandall, Dr. Harper and Miss Gardener had conference relative to the work. I attended this conference which was at the work. The extreme appearance of height and "angularity" of the stairway structure and parapet walls was criticised. A coloring of the walls was suggested by Mr. Johnson; also the addition of a balcony on the upper stairway landing, and a reduction in height of the parapet wall was also suggested.

5. About 360 cubic yards of fill material was hauled on March 5 and spread to bring the grounds between the parking area and the parapet wall to proper grade elevation. This material was obtained from Muirlands for the price of hauling, and was done under extra work order 5.

6. The engineering work this period consisted of calculations of quantities and preparation of construction estimate 6 for February. Payment to the contractor based upon this estimate has been made. The grades for curb and pavement were established and the above work supervised.

7. The pavement is being kept wet by standing water retained by small earth checks.

8. The sand bar between the sluiceways and the pool remains at a less height than before work on the project began. There is some tendency for the sluiceway to sand up. The upper inner grillages

3/10/31

on the sluiceways were installed upon instructions from Captain Crandall.

9. Mr. Savage visited the work on March 8. Mr. Lockwood, City Manager of Operation and Mr. Jorgensen, City Engineer visited the work on March 11.

Harold Wood
Resident Engineer.

HW/r

SILLEN BROWNING SCRIPPS
Bathing Pool for Children
at La Jolla, California

H. N. Savage, Engineer in Charge
524 F Street
San Diego, California.

March 19, 1931.

From : Harold Wood
To : H. N. Savage
Subject : Ten day report - March 11 to 20 inclusive.

1. The wetting of the concrete paving of the parking area has been continued until March 19, which is two weeks since it was poured. The earth forming the checks for holding the water have been removed.

2. On March 12, Mr. Morley and Capt. Crandall conferred relative to lowering the parapet wall along the bluff as suggested by Mr. Templeton Johnson. It was decided at this conference to lower this parapet and an Extra Work Order No. 6 was therefore sent to W. M. Ledbetter & Co.

3. Orders were also received from Capt. Crandall to erect the cable between the outer end of the breakwater and the bluff and to deliver the required rope to his garage as he had a sailor who would install the penant ropes from the cable. This was done.

4. Arrangements were made and an air compressor was secured and furnished the compressed air for the paving breakers and jack hammers used on removing the concrete from the upper portion of the parapet wall. The line for the top of the parapet wall was established on the wall and reviewed and approved by Mr. Morley and Capt. Crandall before any cutting of concrete was begun. The cutting of the concrete, drilling of holes for dowels and removal of old concrete and the continuance of curing of the paving was the work accomplished by the contractor during this period.

5. The engineering work accomplished, in addition to the layout and supervision of the work, consisted of preparation of drawing showing details of foundation of breakwater as built. This profile will be traced and prints will form a part of the records. The writing of the "Feature History" has been in daily progress.

6. A crew of men working under Mr. Morley's direction has laid a 2 inch water line from the service meter at Coast Boulevard at Jenner Street to the project, passing west of the curbs and extending south to Miss Scripps grounds. Several hose outlet connections have been provided along this pipe. The City forces have raised the sanitary sewer manholes to fit the fill grade behind the curbs.

7. The sand bar inside the pool has encroached upon the inside ends of the sluiceways and on March 16 had restricted the net waterway of the openings about 50 percent. On March 20 the sand had blocked all but the top 6 inches of the inside end of sluiceway 1 and 2.

Harold Wood (Signed)
Resident Engineer

BILLY DROWNING MONUMENT
Bathing Pool for Children
at La Jolla, California.

H. H. Savage, Engineer in Charge
524 F Street,
San Diego, California.

March 31, 1931

From : Harold Wood

To : H. H. Savage

Subject : Ten Day Report - March 21 to 31 inclusive.

1. During this period the contractor has had two men building forms for, and concreting the top of the parapet walls. This work is complete except for the stripping of forms on the west parapet of the steps to the breakwater, and the final finishing and curing.

2. On March 23, a letter from Captain W. C. Crandall authorized the closing of the gates in the sluiceways. On March 25, after building up a wooden horse and securing chain blocks, gate 2 was closed. On March 26 gates 1 and 3 were closed. On March 27 gate 4 was closed. Some difficulty was encountered in closing these gates due to blocks of wood and sand having wedged above the lower cross timber and between the concrete of the gate wall and the steel plate of the gate. Gate 4 had to be freed from the bottom which required the excavation of part of the sand from the sluiceway and removal of the top part of the inner grillage. The gates were each fastened shut with 1/2 inch square reinforcing bars as drifts into the timber frame of the gate. Two drift pins were set 5 inches into each side member and two into the bottom cross timber. Sand has now deposited on the inside of the breakwater at the shore end to elevation 4.5.

3. On March 23 Captain W. C. Crandall sent thru Mr. Savage's office a check and letter of transmittal to W. M. Ledbetter & Co. for \$7,666.31, being payment of balance in full, for all work done to and including February 28, 1931.

4. On March 25, Mr. Arthur T. Raitt of Lammens Process Company of Los Angeles visited the work with Mr. Templeton Johnson. Mr. Raitt and Wood measured up the walls and stairs to be chemically colored.

5. Photographs of the pool were taken on March 30.

6. The City forces began, on March 30, the extension of the outfall of the sanitary sewer on the south beach.

7. Calculations of quantities for Estimate 7, March, and writing of Feature History has been carried on in addition to supervision of above work.

ELLEN BROWNING SCRIPPS
Bathing Pool for Children
at La Jolla, California.

H. N. Savage, Engineer in Charge
524 F Street,
San Diego, California.

April 13, 1931

From : Harold Wood

To : H. N. Savage

Subject : Ten Day Report - April 1 to 10 inclusive

1. During this period the contractor has had two men building forms and concreting the top of the parapet walls. This work was completed and the site of the work cleaned of form lumber, tool shed and refuse.

2. The concrete step opposite Station 2+01.4 on the inside of the breakwater was completed and the opening in the inside railing on the breakwater was made and the railing on the step was erected.

3. On April 4, all work by the contractor was completed. Estimate No. 7 for work done to and including April 4 was prepared and the claim signed by the contractor and payment of claim was made. This was the final estimate.

4. The preparation of a Feature History containing all official records, drawings, photographs and a description of the work is being prepared.

5. Mr. Savage is doing all possible, both in Sacramento and from his office in San Diego, to secure the necessary legislative action to obtain State title to the right-of-way for the feature.

Harold Wood
Resident Engineer

HW/p

4-27-31
Copy/m

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March 31, 1931

ELLEN BROWNING SCRIPPS

Bathing Zone Breakwater

Ellen Browning Scripps

To W. M. Ledbetter & Co.,

P. O. Box 1264, Arcade Station,

Los Angeles, California.

Contract dated September 16, 1930, for

Bathing Zone Breakwater.

Estimate for March and April 1931, Estimate No. 7 - FINAL

For articles or services as
stated in detail following.....\$ 4,572.24

I certify that the above bill is correct and just and that
payment therefor has not been received.

W. M. Ledbetter & Co. (Signed)

By W. M. Ledbetter Pres. (Signed)

Computed by Harold Wood (Signed) Checked by P. Beerman (Signed)

I certify that the materials have been received by me in good
condition and in the quantity and quality specified, or the work
performed as stated and that the stipulations of the contract and
the specifications have been complied with and that there is now
due upon this claim the amount stated, no part of which has been
paid.

H. N. Savage (Signed)
H. N. Savage, Engineer in Charge

4/27/31

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ELLEN BROWNING SCRIPPS

Bathing Zone Breakwater

Estimate No. 7 - March and April 1931 - FINAL

Item No.	Article or Service	Amount	Notations
1.	Excavation for cutoff wall and foundation of breakwater 743.4 cubic yards at \$3.80.....	\$2,824.92	
2.	Excavation for bathing zone 722 cubic yards at \$1.80.....	1,299.60	
3.	Excavation for dressing stalls 500.6 cubic yards at \$.90.....	450.54	
4.	Concrete in place in breakwater 1,968.5 cubic yards at \$12.96.....	25,511.76	
5.	Concrete in place in structures other than breakwater 284.3 cubic yards at \$19.50.....	5,543.85	
6.	Cement in place in the work 3102.25 barrels at \$2.90.....	8,996.53	
7.	Steel rails, bending, placing and grouting 63,540 pounds at \$.0065.....	413.01	
8.	Reinforcing steel, bending and placing 16,188 pounds at \$.01.....	161.88	
9.	Seven inch diameter holes drilled in sandrock 1,200 linear feet at \$2.10.....	2,520.00	
10.	Seven inch diameter holes drilled in granite 104.5 linear feet at \$3.00.....	313.50	
11.	Two inch pipe railing 609.2 linear feet at \$2.25.....	1,370.70	
13.	Furnishing in place 3-"U" bolts, 4 cover plates and 12 ladder steps.....	<u>140.50</u>	
Total Schedule Items		\$49,546.79	

4/27/31
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ALLAN BROWNING SCRIPPS

Bathing Zone Breakwater

ESTIMATE NO. 7 - MARCH 1931.

Extra Work Order No. 1				
Paid by estimate 6		\$ 1,503.06		
Pay Roll 28	\$ 56.47			
+ 15%	<u>5.47</u>	<u>41.94</u>	\$ 1,544.99	
Extra Work Order No. 2				
Paid by estimate 6		553.47		
Pay Roll 27	10.34			
+ 15%	<u>1.55</u>	<u>11.89</u>	565.36	
Extra Work Order No. 3				
Paid by estimate 6		968.45		
Pay Roll 25	12.38			
+ 15%	<u>1.86</u>	<u>14.24</u>	982.69	
Extra Work Order No. 4				
Paid by estimate 6		532.68		
Pay Roll 25	307.96			
" " 26	1.30			
" " 28	2.60			
+ 15%	<u>311.86</u>	<u>358.64</u>	891.32	
Extra Work Order No. 5				
Paid by estimate 6		0.00		
Pay Roll 25	280.68			
+ 15%	<u>42.10</u>	<u>322.78</u>	322.78	
Extra Work Order No. 6				
Paid by estimate 6		0.00		
Pay Roll 26	37.47			
" " 27	197.30			
" " 28	51.28			
" " 29	87.47			
Invoice 8806 Fenton				
Material Company	13.06			
" 8807 "	1.42			
" 8814 "	.50			
" 8823 "	8.78			
" B 5725 Wilson				
Lumber	<u>7.35</u>			
+ 15%	<u>404.63</u>	<u>465.32</u>	465.32	
	<u>60.69</u>			
			\$ 4,772.46	

No.	Article or Service	Quantity	Unit Price
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(Forward) Total Schedule Items \$9,541.79

Items	Order No. 1	\$1,524.93	
7	" " " "	\$58.36	
" "	" " 3	\$28.69	
" "	" " 4	\$31.32	
" "	" " 5	\$32.74	
" "	" " 6	\$45.7	

Gross earnings to date.....\$64,418.28

Claim for extra on falsework..... 1,361.75

Total..... 65,681.00

Ad by previous estimates..... 43,442.45

Difference..... 12,238.55

Allowed by Captain Grandall in March..... 7,666.31

Balance in full due by this claim..... \$ 4,572.24

Correct as to quantities delivered, prices, deductions and corrections

By Harold Reed (Signed) Checked by E. Deermann (Signed)

(h) Extra Work:

Six extra work orders were issued as follows:

San Diego, California
December 31, 1930.

W. M. Ledbetter & Company
P. O. Box 1264, Arcade Station,
Los Angeles, California.

Subject: Bathing Zone Breakwater
Extra Work Order No. 1
Grillage and Gates for Sluiceways.

Gentlemen:

In accordance with paragraph 14 of the drawings and specifications for Bathing Zone Breakwater, La Jolla, California, authorization is hereby given you for the performance of the following work and the furnishing of the following material to be accomplished as extra work within the meaning of the specifications:

4 outer grillages, 4 gates and frames
and 4 inner grillages, all in place including
Hermastic paint, and in accordance with
drawings furnished.

Immediately upon completion of the above work, please furnish this office with itemized statement of the cost in accordance with paragraph 14 of the specifications, which cost is not to include the 15 per cent which will be added by this office before payment is made.

Very truly yours,

H. M. Savage,
Engineer in Charge.

HW/m

cc Dr. J. C. Harper
cc Captain W. C. Grandall

San Diego, California
January 5, 1931.

W. M. Ledbetter & Company
P. O. Box 1264, Arcade Station
Los Angeles, California.

Subject: Bathing Zone Breakwater
Extra Work Order No. 2
Improvements along bluff.

Gentlemen:

In accordance with paragraph 14 of the drawings and specifications for Bathing Zone Breakwater, La Jolla, California, authorization is hereby given you for the performance of the following work and the furnishing of the following material to be accomplished as extra work within the meaning of the specifications:

- 1" Cable across bathing pool
- 4 - 1" Cable clamps
- 3 - 1-1/4" Eye bolts in place
- 130 feet of 2" hemp rope
- 1 Grating and grating support frame for catch basin
- 1 Cast iron manhole cover for cleanout box
- 2 Life buoy boxes
- 100 feet of 14 inch diameter concrete storm drain in place

Immediately upon completion of the above work, please furnish this office with itemized statement of the cost in accordance with paragraph 14 of the specifications, which cost is not to include the 15 per cent which will be added by this office before payment is made.

Very truly yours,

H. N. Savage
Engineer in Charge

HW/p

cc Dr. J. C. Harper
cc Captain W. C. Crandall

San Diego, California
January 21, 1931

W. M. Ledbetter & Company
P. O. Box 1264, Arcade Station,
Los Angeles, California.

Subject: Bathing Zone Breakwater
Extra Work Order No. 3.
Removal of excess sand from Pool.

Gentlemen:

In accordance with paragraph 14 of the drawings and specifications for Bathing Zone Breakwater, La Jolla, California, authorization is hereby given you for the performance of the following work to be accomplished as extra work within the meaning of the specifications. This order does not cover materials included in Schedule Item 2.

Excavation and removal of sand
and other materials from the
bathing zone.

Immediately upon completion of the above work, please furnish this office with itemized statement of the cost in accordance with paragraph 14 of the specifications, which cost is not to include the 15 per cent which will be added by this office before payment is made.

Very truly yours,

H. N. Savage
Engineer in Charge

HW/p

cc Dr. J. C. Harper
cc Captain W. C. Crandall

San Diego, California
February 15, 1931.

W. M. Ledbetter & Co.,
P. O. Box 1264, Arcade Station,
Los Angeles, California.

Subject: Bathing Zone Breakwater, Extra Work Order 4.
Excavation and preparing sub-grade for
paving and curing of concrete paving.

Gentlemen:

In accordance with paragraph 14 of the drawings and specifications for Bathing Zone Breakwater, La Jolla, California, authorization is hereby given you for the performance of the following work to be accomplished as extra work within the meaning of the specifications:

Excavation, trimming, rolling and preparation of sub-grade for concrete paving, and the placing of sand cover, water, watering and removal of sand cover for curing the concrete paving.

Immediately upon completion of the above work, please furnish this office with itemized statement of the cost in accordance with paragraph 14 of the specifications, which cost is not to include the 15 per cent which will be added by this office before payment is made.

Very truly yours,

H. N. Savage,
Engineer in Charge

HW/f

San Diego, California
February 24, 1931.

W. M. Ledbetter & Co.,
P. O. Box 1264, Arcade Station
Los Angeles, California.

Subject: Bathing Zone Breakwater
Extra Work Order 5.
Hauling and spreading fill material

Gentlemen:

In accordance with paragraph 14 of the drawings and specifications for Bathing Zone Breakwater, La Jolla, California, authorization is hereby given you for the performance of the following work to be accomplished as extra work within the meaning of the specifications:

Hauling and spreading fill
material for completing backfill
behind the curb and on the park
area.

Immediately upon completion of the above work, please furnish this office with itemized statement of the cost in accordance with paragraph 14 of the specifications, which cost is not to include the 15 per cent which will be added by this office before payment is made.

Very truly yours,

H. M. Savage,
Engineer in Charge.

HMS/p

San Diego, California
March 12, 1931.

W. M. Ledbetter & Co.,
P. O. Box 1264, Arcade Station
Los Angeles, California.

Subject: Bathing Zone Breakwater
Extra Work Order 6.
Changes to Parapet Walls.

Gentlemen:

In accordance with paragraph 14 of the drawings and specifications for Bathing Zone Breakwater, La Jolla, California, authorization is hereby given you for the performance of the following work to be accomplished as extra work within the meaning of the specifications:

Removing certain upper portions of the present concrete parapet wall along the bluff and at the sides of the steps leading to the breakwater, all in accordance with marks to be placed on said walls by Resident Engineer Wood. Also to place the cable from the middle "U" bolt in the outer end of the breakwater to eye bolt in bluff. The furnishing of this cable and cable clamps was a part of Extra Work Order 2.

Immediately upon completion of the above work, please furnish this office with itemized statement of the cost in accordance with paragraph 14 of the specifications, which cost is not to include the 15 per cent which will be added by this office before payment is made.

Very truly yours,

H. M. Savage,
Engineer in Charge.

HW/p

Extra Work Order No. 1: The four outer grillages were built up by oxygen-acetylene fillet welding of 3/4 by 4 inch steel bars, into a frame 3.3 feet by 6.7 feet with 5 intermediate equally spaced 3/4 by 4 inch vertical bars and one horizontal intermediate spacer of 3/4 by 4 inch bars. The grillages rest against the floor of the sluiceways, the 60 pound horizontal railroad rails across and 1" diameter dowels grouted into each side of the sluiceways the sluiceways near their top in an inclined position parallel to the outer face of the breakwater. The grillages are held in rigid position by two 1 inch hook bolts thru plates over the outside of the two side bars of the grillages and around the railroad rail.

The four inner grillages each consist of 3-3/8 inch steel plates 4.67 feet long by 20 inches wide supported by the ends of the adjacent step treads. These plates form a continuation of the step treads. 3/4 inch diameter vertical bars set 4 inches apart on line with each of the step risers forms the grillage. The tread plates are each bolted with 4-3/4 inch bolts grouted into the step treads. Each grillage is in two parts; the lower part consists of two tread plates and adjacent two sets of bars. The bars project 20 inches below the lower tread plate. The upper part consists of one tread plate and upper and lower adjacent bars. The bars are welded to the tread plates and the lower end of the bars on the two parts and the top row of bars of the upper part are welded to a 3/4 x 2 inch bar 3.92 feet long. The lower 3/4 x 2 inch bar of the upper part is bolted at its ends to the middle tread plate with 2-1/2 inch bolts. All grillages were painted two coats of Hermetic paint before installing and were retouched after installing.

The four gates are each built into a timber frame fitted into the 6 x 9 inch stop log slots in the gate wells. The frames have

an outside width of 4.8 feet and height of 10.7 feet and are of Oregon pine painted with creosote oil. The timbers are 8 x 12 inches, half lapped with 4 inch wide "U" straps with 3-3/4 inch countersunk rivets at each corner. To facilitate lifting the gates a 1 inch "U" bolt was provided in the center of the top cross member. A cross timber, dapped into the edges of the vertical side timbers, is set to leave a clear gate opening of 5.65 feet in height. This cross member is drift bolted with 3/4 inch round drifts to the side members. The gate opening is rabbeted 2 inches deep all around by 3 inches wide to form a seat for the steel plate forming the flap gate. The steel gate plate is 3/8 inch thick, 3.58 feet by 5.7 feet, reinforced on the inside with 2-2x2x1/4 inch angles, 5 feet long each riveted with 10-3/8 inch rivets to the gate plate about 8 inches from the sides of the plate. The upper edge of the plate was forged and welded to form 4 - 4 inch wide hinge members with inside clearance for a 1 x 12 1/2 inch hinge pin. Two hinge eye bolts of 3/4 inch diameter by 13 1/2 inches long are bolted thru the timber cross member of the gate frame. These bolts are set 2.55 inches apart and support the gate plate to move on the hinge pin passing thru them. The metal parts of the gate were painted two coats of Hermastic paint. The gates were hung into the gate wells by the dragline on January 24 and blocked up so as not to obstruct the waterway of the sluiceway. On March 27, upon orders from Captain W. C. Crandal, see attached letter dated March 23, 1931, the gate plates were each spiked shut with 6-1/2 inch square bars of steel driven into the wooden frame of the gate, and the gates and frames lowered to close the sluiceways. Extra Work Order No. 1 cost \$1,544.99.

The four sluiceways, four feet by six feet, fitted with gateways, were installed thru the breakwater for purposes of permitting such control with gates as might be possible to both free the floor of the pool of accumulated sand and provide a sand beach for children bathing in the pool.

It was intended that the present wooden gates would suffice to experiment with to determine what type of permanent gates, if any, might be needed. During March 1931, the sand on the pool side of the breakwater kept moving west thru the sluiceways and was carried into the open sea outside the breakwater.

The sand which passed out thru the sluiceways after the construction of the breakwater, lowered the floor of the pool about one and one-half feet. Full control wooden gates as above described were closed March 27, 1931. At the present time, May 30, 1931, the lowering of the gates has caused sand to deposit on the floor of the pool forming a sand beach at the corner between the bluff and the inside of the breakwater.

Should it seem desirable to open the gates, whether for removal, renewal, or deposit of sand, this can be done by first freeing the gates of sand by hand excavation in the sluiceways at low tide and next by jetting with the domestic water supply down thru the slots in the gate frames to free the frames of sand in the gate wells, and then raising the frames and gates with a chain block.

La Jolla, California
March 23, 1931.

H. N. Savage,
524 F Street
San Diego, California.

Dear Mr. Savage:

I have been down at the Pool and note that the sand is apparently being taken from the Childrens Pool and deposited in the pool to the south. It, therefore, seems to me that we should at this time experiment by closing the gates in the sea wall and see if the sand cannot be kept on the Childrens Pool side and give us a beach during normal tides at least.

For purposes of trying this experiment, I have authorized the fixing of the gates in the sluiceways so as to prevent washing for the present.

If this is satisfactory, it will relieve one danger that has developed, namely, the strong suction pull caused by the water running into the sluiceways and then receding.

Apparently we have accomplished two things by the Childrens Pool, namely a satisfactory childrens pool to the north for medium and high tides and also a satisfactory pool to the south which can be used under normal weather conditions. Both seem about equally used at the present time.

Very sincerely yours,

W. C. Grandall.

Extra Work Order No. 2 in addition to providing the cable for the open side of the pool, also provided for a storm drain.

A drawing, "Improvements Along Bluff", Supplemental Sheet No. 7 was prepared which incorporated the ideas for development of the landscape parking accessory as outline by Cook, Hall & Cornell, landscape architects, who were brought into the work by Captain W. C. Grandall. Letters relative to this work are attached hereto.

The storm drain trench was excavated and backfilled by the dragline equipped with the clamshell bucket. The 100 feet of pipe was 15 inches diameter standard concrete storm sewer pipe of pre-cast concrete sections and was laid with cement mortar joints. The pipe and manhole concrete sections were purchased from American Concrete Pipe Company of San Diego.

The total cost of extra work order No. 2 was \$565.36.

Extra Work Order No. 3. The removal of excess sand from the pool has been previously described. About 3500 cubic yards were removed by handling twice. The total cost was \$982.69 or \$0.281 per cubic yard.

Extra Work Order No. 4. for the subgrading for paving and the curing of the paving has been described above. The total cost was \$891.32.

Extra Work Order No. 5 for hauling and spreading fill material for area behind the curbs along the bluff, was accomplished in one day, March 5, by securing material being excavated for a road in Muirlands subdivision. The material was hauled with six trucks and was spread with 1-2 up fresno and by hand. All material obtainable from this source was hauled which was about 360 cubic yards. The total cost was \$322.73 or \$.90 per cubic yard.

San Diego, California
December 31, 1930.

Dr. J. C. Harper, and
Captain W. C. Grandall,
La Jolla, California.

Subject: Ellen Browning Scripps Bathing Pool
for Children at La Jolla.
Landscape Parking Accessory.

Dear Sirs:

In an endeavor to comply with your indicated wishes as understood for the development of the landscape parking accessory development adjacent to the Bathing Pool being formed by the concrete breakwater for Miss Ellen Browning Scripps gratuity, enclosed is copy of drawing in duplicate showing the detailed design developed by Resident Engineer Harold Wood, with some constructive cooperation on my part.

Provided the design meets your approval, it has mine.

If you desire to have any modifications made before the contractor is authorized to proceed with the grading and forming of the concrete required for the accomplishment of the accessory, please so indicate at your earliest convenience in order that the construction work may be progressed to completion at the earliest practicable date.

With sincere feelings of high esteem for you both, and with Seasonal Greetings, I am

Very cordially yours,

H. N. Savage

HNS/f

Encls. 2 prints.

January 5, 1931.

Mr. H. N. Savage
524 F Street
San Diego, California.

My dear Mr. Savage:

Your letter of December 31, with enclosure of plat for the improvements along bluff at the bathing zone breakwater, has been received and the same have received the careful consideration of Mr. Harper and myself.

So far as the general scheme is concerned, we concur in the development. On account of tidal conditions and labor conditions, we would ask that you have the following work completed under the W. D. Ledbetter contract, i.e. that the caves S-1, S-2, S-3, S-4, P-1 and P-2 be completed as per your program; that the bathing zone be likewise completed; that the parapet wall and entrance be completed as outlined; that the drainage be installed and completed; and that the fills, curbs and concrete parking space along Coast Boulevard be made according to the plan.

We would ask you to defer having concrete work done in caves N-1 and N-2.

Trusting that this program will also meet with your approval, I am

Very sincerely yours,

W. C. Crandall, Agent

Ellen B. Scripps.

San Diego, California
January 9, 1931.

Dr. J. C. Harper and
Captain W. C. Crandall,
La Jolla, California.

Subject: Ellen Browning Scripps Bathing Pool Zone,
Coast Boulevard planning,
Landscaping and Parking.

Dear Sirs:

Receipt is acknowledged of and you have my appreciation for your letter dated January 5, 1931, discussing and accepting the general suggestions for completing the landscaping and parking feature of the Bathing Zone Project as shown on supplemental drawing No. 7.

The erosion prevention work suggested for accomplishment at Cave N-1 and Cave N-2 features is deemed important, although it may be performed later on in the season when less obstruction may be offered by "Old Ocean".

The Manager of Operation, F.M. Lockwood, reported that he has suggested that the adjacent proposed curb along the outside of the concrete paved parking space should be moved out northwesterly and thereby relieve somewhat the potential "bottle neck" reach in the Coast Boulevard.

The suggested set back will materially benefit the Casa de Manana grounds and as a minor compensation therefor the Casa de Manana owners should gladly accept the opportunity of setting back the curb at the inside of the Coast Boulevard at the northwesterly corner of their grounds.

A minor modification may be advisable in providing another catch basin in the northwesterly storm drain, thereby eliminating what otherwise may be a surface puddle of water.

The purport of the above reaction has been discussed and developed in conjunction with the Resident Engineer, Harold Wood, who will further discuss the matter with you. Whatever conclusions you and Mr. Wood may reach will be entirely satisfactory to me.

The evolution of the entire Bathing Zone gratuity increasingly appeals to me as being one of the most splendid provisions, developments and donations I have ever known of and the increasing developments make the entire proposition further outstanding.

Very cordially yours,

H. N. Savage,
Engineer in Charge.

HNS/f

4/30/51
Copy/m

124

W. C. Grandall
P. O. Box 494
La Jolla, California.

March 5, 1951.

Mr. H. N. Savage,
524 F Street,
San Diego, California.

My dear Mr. Savage:

Yesterday afternoon Mr. Templeton Johnson together with Mr. Harper, Miss Gardner, Mr. Woods and myself were down at the children's pool. Mr. Harper had asked Mr. Johnson to stop as there was some criticism of a few of the lines in the terrace part of the pool project.

After some consideration Mr. Johnson stated that with your permission he would be glad to get in touch with a man he knows in Los Angeles who is able to tint concrete walls so that they may have the appearance of the color of the surrounding soil. We all felt that this would tend to relieve the stark appearance of this section. May I ask you to advise Mr. Johnson if it is acceptable to you for him to get in touch with such a man.

It was also agreed that the sharp contour of the upper portion of the wall might be relieved somewhat by making a balustrade along the portion of the wall of the first flight of steps, thus giving an oblique line against the rear wall. Mr. Harper also pointed out the fact that such a balustrade would be of great assistance to elderly people who are using the steps to go from the street level to the beach. Accordingly we asked Mr. Woods to consult with you, and have a work order made out if satisfactory for this slight change.

The land end of the southerly wall leading from the ramp seemed to end rather abruptly, and at a suggestion from Mr. Johnson a very simple plan was arranged upon that would relieve the sharp line at the end of this wall. Accordingly with your consent Mr. Woods will make the slight change indicated.

The question of the thinness of the long stretch of walls was brought up and a suggestion was made that later on the upper portion be widened so as to give an effect of massiveness that is not apparent now. Either Mr. Harper or myself hope to see you sometime when you are out here so that we may take this matter up with you.

The question of the use and availability for nurses and those in charge of small children came up, and it was pointed out that many of them might, during the morning, desire to sit on the sunny steps of the breakwater. At the present time there is no easy method to get from the walkway on top of the breakwater to the first step below. It was suggested then that one step be placed somewhere along the first section of the breakwater, and that the railing be led around so as to make a more easily available entrance from that side. This suggestion seemed to receive the unanimous support of those

March 6, 1931

HNS-2

who were present at the conference.

Another question that has been raised many times is the placing of a Jacob's ladder on the sea face of the sea wall in order that anyone who became marooned on the reef might have a safe way of getting off from the reef if caught by a high tide. The majority of people do not feel that permanent steps should be placed on this reef as permanent steps would suggest that it would be a nice thing to go down on the reef. It is well agreed that there be no such suggestion made, but there should be easily available a Jacob's Ladder for helping get people out of difficulty.

I have heard many many comments on the beautiful lines of the breakwater and the beautiful way it is coloring from the effect of the algae. If the sand will now rearrange itself somewhat in accordance with our wishes, I think we may call the project one that is most successful and one in which we may be well pleased to have had a part.

Very sincerely yours,

W. C. Crandall
W. C. Crandall

WCC:AR

Extra Work Order No. 6 was issued for certain work called to Mr. Savage's attention by Captain Crandall in letter of March 5, 1931, copy attached. The alterations of the parapet walls was accomplished during the period March 13 to April 4, inclusive. An air compressor and tools were rented by W. M. Ledbetter & Co. from H. G. Fanton Materials Company for operating the paving breakers and air tools for cutting the concrete. The concrete was cut 3 inches lower than the finished top of the wall, the vertical steel was thus exposed to project 2 inches into the new top concrete and a horizontal bar was wired to the top ends of these vertical bars to insure a proper bond between the old and new work. Forms were built of 1 inch surfaced lumber edged to proper grade and bent to proper alignment. These form boards were held in place by clamps at 2 foot intervals made of two 2 x 4 inch studs 30 inches long provided with 1/2 x 20 inch bolts with washers thru the center of the vertical studs and with spreader at the top. There was also built as part of this order an 18 inch step 8.8 feet long on the top step of the breakwater opposite station 2+01.4. An 8 foot section of pipe railing on the breakwater was cut out, end fittings provided and an 8 foot section of railing and two posts were erected along the outside/^{line} of this step. All the work was done by W. M. Ledbetter & Co. under paragraph 14 of the specifications. The cost was \$465.32.

(j) Changes:

Alignment of Breakwater: Upon laying out the breakwater, it was found that following the alignment as shown upon the drawing, sheet 1 of 6, the outer end would lie northwesterly of the high part of the reef. The arc of the center line was therefore lengthened and the 80 foot tangent was reduced to 20 feet. The excavation of

the shore end was not carried into the bluff as far as shown on the drawing sheet 1 of 6, but the tangent centerline length was reduced which makes the breakwater 303.6 feet long instead of 313 feet.

Foundation for Breakwater: It was found upon drilling the cutoff trench that the reef is a homogeneous sandstone with some ingeous boulders embedded in it. It was only necessary to excavate the reef for the foundation for the bond trenches cutoff trench and to remove all marine growth. Also it was found unnecessary to go into the bluff at the shore end as far as anticipated when the original estimates of schedule item quantities was prepared. (See Supplemental sheet No. 10). These are not in reality changes, but because of the reduction in anticipated concrete yardage in the breakwater they are here mentioned. The following is a comparison of anticipated quantities and the actual quantities:

San Diego, California
January 21, 1931

From : Harold Wood
To : H. N. Savage
Subject : Preliminary quantity estimate for breakwater
Compared to actual quantities

Preliminary estimate data	Estimated	Actual
Total length of breakwater	313 feet	303.6 feet
MAXIMUM SECTION		
Length	90 "	62.6 "
Average elevation of base	-7.5 "	-3.5 "
Average elevation of bottom of cutoff	-17.5 "	-17.2 "
Average depth of cutoff	10.0 "	12.1 "
Average cross sectional area	359.2 sq ft	269.3 sq ft
Concrete yardage including cutoff	1119.0 cu yd	503.4 cu yd
Deducted for gate wells	0.0 " "	8.3 " "

Preliminary estimate data	Estimated	Actual
MINIMUM SECTION		
Length	223.0 feet	241.0 feet
Average elevation of base	2.0	1.9
Average elevation of bottom of cutoff	- 3.0	-6.2
Average depth of cutoff	5.0	9.3
Average cross sectional area	111.8 sq.ft	122.6 sq ft
Concrete yardage including cutoff	924.0 cu yd	1053.9 cu yd
Total concrete maximum & Minimum sections	2043.0 " "	1557.3 " "
Added for contingencies	457.0 " "	
Total schedule item in breakwater	2500.0 " "	1557.3 " "
Concrete in caves S-1, S-2, S-3, S-4, P-1 and P-2 (not in original schedule)	303.0 " "	

Summarizing the above we see that the yardage in the maximum or shore section was decreased due to better foundations than anticipated, but the minimum section was increased due to going deeper with the cutoff and because of increased length of minimum section with a resulting total decrease in concrete of about 640 cubic yards when the caves are taken into consideration, or a decrease of 25.5 per cent.

HAROLD WOOD
Resident Engineer.

HW/p

Stairway Structure: (See supplemental sheet No. 8). The excavation and method of construction of this structure has been previously herein described. This structure was originally referred to as "Dressing Stalls" and is shown on drawing sheet 4 of 6. Objection to the stalls was raised and it was decided to eliminate them. A new drawing supplemental sheet No. 8, print attached, was prepared to show the new design.

San Diego, California
January 13, 1931

Dr. J. C. Harper, and
Captain W. C. Crandall,
La Jolla, California.

Subject: Ellen Browning Scripps,
La Jolla Bathing Zone Breakwater,
Stairway.

Dear Sirs:

Enclosed are two copies of Supplemental Sheet No. 8, showing designs developed for Bathing Zone Breakwater Stairway as modified from the original tentative development, which I have approved as to location and technical design.

I am under the impression that this advances specifically the solution you two and I had unanimously agreed upon.

Very cordially yours,

H. N. Savage
Engineer in Charge.

HNS/f

Encls. (2)
Supplemental Sheet No. 8.

The length of the structure was reduced, stalls were eliminated and end walls or buttresses were added also side walls of the center stairs were added and the entire rear retaining wall was re-designed as a counterfort wall partly supported by the end buttresses and side walls of the center stairs. The extra depth to secure proper footing for the front retaining wall also required a closer spacing of the 1/2 inch square vertical reinforcing bars in this wall. The vertical bars are spaced at 6 inches instead of 12 inches as shown on the plans. Because of the extreme depth to the foundation it became necessary to extend the stairs to the lower beach level. The beach level has lowered from elevation 8.2 at the foot of the old stairs to elevation of about 1.6 at the foot of the east stairs. Solid blocks of concrete were poured outside the front face of the original stairway structure. These made landings at elevation 6. The outside of the landing blocks had cutoff walls carried 18 inches wide and about 18 inches deep into the rock. Parapet walls and steps 4.3 feet wide were cast solid to the rock at the beach level.

Parapet walls: (See supplemental sheet No. 9). After these walls were poured, stripped and finished it was decided to change the height and to taper the top elevation. The method of doing this work was described under Extra Work Order No. 6. The portion of wall removed is shown on the above drawing by hatched area.

(k) Organization: The entire work on this project with the exception of the laying of the 2 inch water pipe and planting which were done by City forces, has been done by W. M. Ledbetter & Co. under their contract with Miss Ellen B. Scripps, signed September 16, 1930. This organization is composed of the following:

Name	Title	Residence Address
W. M. Ledbetter	President	109 Avenue 34, Venice
J. C. Wright	Vice-president	1805 W. Twelfth Place, Los Angeles
W. H. Spear	Secretary-Treasurer	636 North Lucerne, Los Angeles

The superintendent on the work was Carl Gadeberg and he was paid \$12.00 per day.

Mr. Sam Narey was general foreman and he was paid \$9.00 per day.

Skilled labor was paid \$7.00 per day and common labor was paid \$5.00 per day.

(1) Completion of Work: Two extensions of time of completion of the work were granted the contractor. The contract called for completion within seventy-five days from date of signing contract or on December 1. Attached is copy of the request made which contained the approval of the Indemnity Insurance Company of North America, the surety company.

This request was granted and the time was extended to January 29, 1931 by Capitan Crandall in letter of December 9, 1930, copy of which is attached hereto.

A second request for extension of time was received as follows:

January 28th, 1931

Miss Ellen B. Scripps,
c/o Mr. H. N. Savage,
524 F Street,
San Diego, California.

Dear Miss Scripps:

On account of the considerable amount of extra work which has been requested in accordance with terms set forth in paragraph 14 of our contract for construc-

tion of the bathing zone breakwater at La Jolla, we find it impossible to complete the work within the allowed time.

We therefore request a further extension of 45 days time in which to complete the work.

Trusting that this request meets with your approval, we remain,

Yours truly,

W.M. LEDBETTER & CO.

BY W. H. Spear,
Secretary.

APPROVED THIS 30 DAY OF January 1931

Indemnity Insurance Company
of North America

By C. F. Batchelder
Attorney-in-fact

(SEAL)

This second request also contained the approval of the surety company and extended the time of completion of work to March 15, 1931.

San Diego, California
February 3, 1931.

W. M. Ledbetter & Co.,
P. O. Box 1264, Arcade Station,
Los Angeles, California.

Subject: Bathing Pool Breakwater Contract;
Application for extension of time.

Gentlemen:

Consideration has been given to your request of January 28, 1931, for a second extension of time for completion of Bathing Zone Breakwater at La Jolla, California.

You are hereby granted an extension of time to and including March 15, 1931, within which to complete the Bathing Zone Breakwater at La Jolla, California, as provided in that certain contract entered into by and between W. M. Ledbetter & Co., and Ellen Browning Scripps on September 16, 1930.

ALLEN BROWNING SCRIPPS

By W. C. Crandall
Attorney-in-fact

APPROVED:

H. N. Savage
Engineer in Charge

The contract schedule item work was completed before this last extension expired.

(m) Release of Contract: The following letter was received from W. M. Ledbetter & Co.:

February 21st, 1931

Miss Allen B. Scripps,
c/o Mr. H. N. Savage
524 F Street,
San Diego, California.

Dear Miss Scripps:

With the exception of some extra work we have completed the construction of the Bathing Zone Breakwater at La Jolla, in accordance with our contract dated September 16, 1930.

We therefore request that you acknowledge acceptance of the work specified to be done in the contract as soon as you have assured yourself that satisfactory completion of that portion of the work has been accomplished.

Yours truly,

W. M. LEDBETTER & CO.

By W. H. Spear

At Captain W. C. Crandall's request the following letter was written, signed by Captain Crandall and Mr. Savage. This letter was then held by the resident engineer until March 19,

1931 when upon Captain Crandall's request it was delivered to Dr. J. C. Harper. A check to W. M. Ledbetter & Co. for \$7,666.31, being the retained 15 per cent withheld on the total amount of the work done to February 28, 1931, was received from Captain Crandall on March 22 and was mailed March 23 with Captain Crandall's letter of transmittal.

ELLEN BROWNING SCRIPPS
Bathing Pool for Children
at La Jolla, California.

H. N. Savage, Engineer in Charge,
524 F Street,
San Diego, California.

San Diego, California,
February 26, 1931.

W. M. Ledbetter & Co.,
P. O. Box 1264 Arcade Station,
Los Angeles, California.

Subject: Bathing Zone Breakwater;
Completion of Contract.

Gentlemen:

The contract between your Company and Ellen Browning Scripps for Bathing Zone Breakwater at La Jolla, California, has been fully completed in compliance with the drawings and specifications and contract requirements.

The date for completion of the work was extended by letter dated December 9, 1930 to and including January 29, 1931, and a second extension of time was extended by letter dated February 3, 1931 to and including March 15, 1931.

The work was completed on February 10, 1931.

Respectfully,

H. N. Savage,
Engineer in Charge.

Approved:

By
W. C. Crandall, Attorney in Fact.

HW/f
cc Capt. W. C. Crandall

March 19, 1931

Note: The original and duplicate original of this, both signed by Capt. Crandall and Mr. Savage were given by me to Dr. Harper at 11 A.M. March 19, 1931, under circumstances as follows: Dr. Harper and I while inspecting the work, met Capt. Crandall. Capt. Crandall asked if I had these papers and I told him I had and was awaiting instructions. He requested the papers and I gavethem directly to Dr. Harper who read them and then passed them to Capt. Crandall.

H. Wood.

The check and Captain Crandall's letter of transmittal were mailed to W. M. Ledbetter & Co. on March 23. This entire transaction was very much out of order as the extra work which is as much a part of the contract as the schedule items was not completed until April 4, 1931.

Condition "h" of the permit from the War Department for the work requires a written notice of the completion of the work, be sent to District Engineer of the War Department. Copy of this notice is attached.

Copy of letter to the surety company, advising them as to the completion of the work, is attached.

December 3, 1930

Miss Ellen B. Scripps,
c/o H. H. Savage
524 F Street
San Diego, California.

Dear Miss Scripps:

In constructing the concrete bathing zone breakwater at La Jolla, for which we have contract to complete, we have endeavored to place the greater portion of the concrete in the lower portion of the structure without use of tremie.

This procedure results in a better grade of concrete than can be obtained from concrete deposited under water. It has been necessary that we pour concrete during low tides and hence we have been unable to perform the work continuously.

We therefore request an extension of 60 days time in which to complete the work.

Trusting that such extension meets with your approval, we remain,

Yours truly,

W. M. Ledbetter & Co.

By W. M. Ledbetter

APPROVED this 5th day of
December 1930,
Indemnity Insurance Company
of North America

By C. F. Batchelder
Attorney-in-fact

4-6-31

P

San Diego, California
December 9, 1930.

W. M. Ledbetter & Co.,
P. O. Box 1264, Arcade Station,
Los Angeles, California.

Subject: Bathing Pool Breakwater Contract;
Application for Extension of Time.

Gentlemen:

Consideration has been given to your request of December 3, 1930, for an extension of time for completion of Bathing Zone Breakwater at La Jolla, California.

You are hereby granted an extension of time to and including January 29, within which to complete the Bathing Zone Breakwater at La Jolla, California, as provided in that certain contract entered into by and between W. M. Ledbetter & Co., and Ellen Browning Scripps on September 16, 1930.

Ellen Browning Scripps,

By W. C. Crandall

W. C. Crandall, Attorney in Fact.

Approved:

H. N. Savage
Engineer in Charge.

HNS/b

138
BATHING BEACH UNIT
Bathing Pool for children
at La Jolla, California

H. E. Savage, Engineer in Charge
524 E Street
San Diego, California.

San Diego, California
April 8, 1931

Office of the Division Engineer
South Pacific Division
United States Engineer Office
414 Custom House, San Francisco.

Attention: Thomas M. Robins
Lieut. Colonel, Corp. of Engineers,
Division Engineer.

Subject: PERMIT - ELLEN BROWNING SCRIPPS
San Diego, California.

Gentlemen:

Notice is hereby given, in accordance with paragraph (h)
of above permit, that work on the concrete breakwater in the
Pacific Ocean at La Jolla, California, is complete.

Very truly yours,

Engineer in Charge
for
Ellen Browning Scripps

HW/p

cc Dr. J. C. Harper, Attorney-in-fact
cc Captain T. C. Crandall, Agent

ELLEN BREWING SCRIPPS
Bathing Pool for Children
at La Jolla, California.

H. H. Savage, Engineer in Charge
524 F Street,
San Diego, California.

San Diego, California
April 8, 1931.

Indemnity Insurance Company of North America
548 South Spring Street,
Los Angeles, California.

Attention: Mr. C. F. Batchelder
Attorney-in-fact

Subject: Bond No. 194755

Gentlemen:

The work on the Bathing Zone Breakwater at La Jolla, California, Contract with W. M. Ledbetter & Co. of Los Angeles, has been completed.

The total amount paid W. M. Ledbetter & Co. was less than the original amount in proposal schedule.

The contract work has been executed to the satisfaction of Resident Engineer, and in my personal knowledge, based upon frequent inspection, has been carried on and out in a prominently efficient and satisfactory manner.

Very truly yours,

Engineer in Charge
for
Ellen Browning Scripps

HW/p

cc Dr. J. C. Harper
cc Captain W. C. Crandall

COSTS

(a) Statement of costs to contractor: No field accounts were kept other than those kept by the contractor, but upon completion it was stated by Mr. J. C. Wright, Vice President of W. M. Ledbetter & Co., that the total cost not including their Los Angeles office overhead, was about \$46,000, of which about \$21,000 was for labor and \$10,700 was for installation and removal of outfit, falsework and cofferdam. The total of all payments to the contractor was \$55,681.00. These figures indicate a fair profit to the contractor.

(b) Statement of costs to Miss Scripps: The cost of work performed under direction of Mr. H. N. Savage to May 12, 1931, was as follows:

W. M. Ledbetter and Co., Contractor	\$ 55,681.00
Shannahan Bros. Inc., steel rails	826.02
H. G. Fenton Material Co. reinforcing steel	506.62
Indemnity Insurance Company of North America bond premium	828.22
Benchas, fertilizer, and incidentals	639.49
Sub-total	<hr/> 58,481.35
Resident Engineer and Inspection	2,738.43
Administrative Engineering	<hr/> 1,570.24
Total cost to May 12, 1931	\$ 62,790.02

INSPECTION

(a) Routine inspection: Inspection of all forms, mixing and placing of all concrete and the setting of alignment and grade points for all forms was part of the routine inspection. This was done by Resident Engineer Wood and his assistant Mr. W.M. Bonham.

(b) Special inspection: Mr. Savage inspected the work at least once a week and some weeks twice. Captain W. C. Crandall was almost a daily visitor to the work and during the more important operations inspected the work. He inspected the work several times when important operations were under way at night.

(c) Inspection of materials: Mr. J. Y. Jewett, Testing Engineer of the City of San Diego's testing laboratory made the tests on each car of cement received. These tests were made gratuitously by Mr. Jewett. There was no cement which failed to pass these tests. The concrete aggregates for the breakwater were being delivered at the same time that the same proportions of materials were being delivered to the State of California, Department of Highways, and we were thus afforded the benefit of their tests and inspection at the rock plant of H. G. Fenton Material Company at Murray Canyon. Reports, diary, calculations of quantities upon which payments to the contractor were made and all monthly estimates were made by the Resident Engineer.

SANITATION

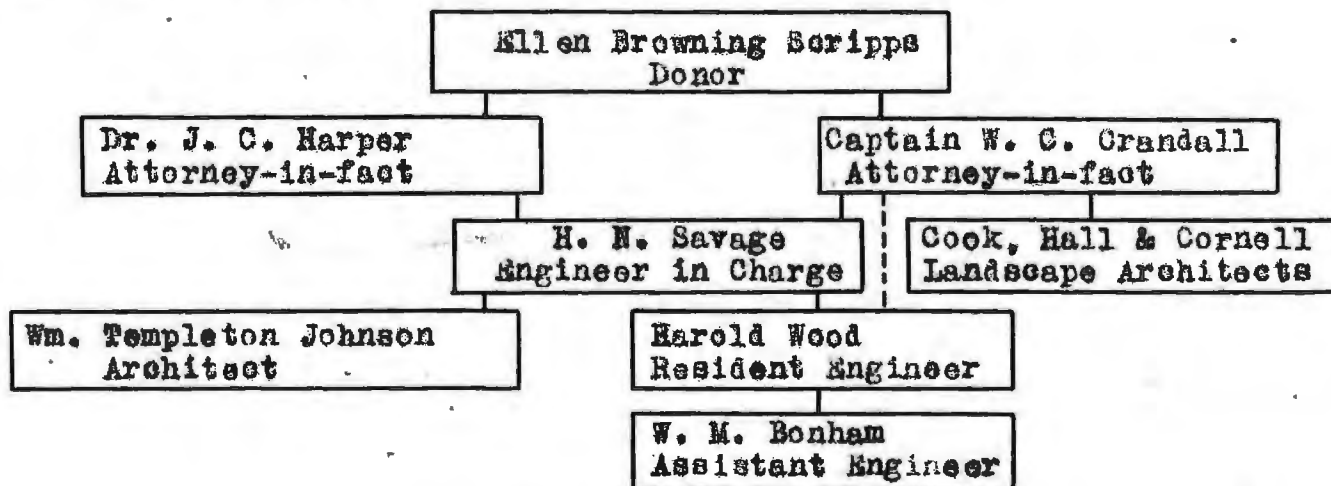
(a) Medical and hospital attendance: No medical or hospital attendance was required on the work except the usual first aid dressings applied by the men themselves for minor cuts and bruises.

(b) Accidents: No accident of any serious nature occurred.

A temporary toilet was erected over one of the sanitary sewer manholes at the west side of the bluff and maintained by the contractor.

OFFICIAL PERSONNEL ORGANIZATION

During the progress of the work, from June 1930 to April 1931, the interests of Miss Ellen Browning Scripps were represented as required by the following organization:



Incident to the absence of Dr. J. C. Harper in Europe, Miss Scripps was represented by Captain W. C. Crandall who by cooperation materially advanced the construction of the work.

Mr. H. N. Savage served gratuitously as Engineer in Charge of the work, conditioned upon being permitted to join with Miss Scripps in her gratuity.

LITIGATION

(a) No litigation was necessary in connection with this project.

CIRCULAR LETTERS AND REGULATIONS

No circular letters or regulations were posted.

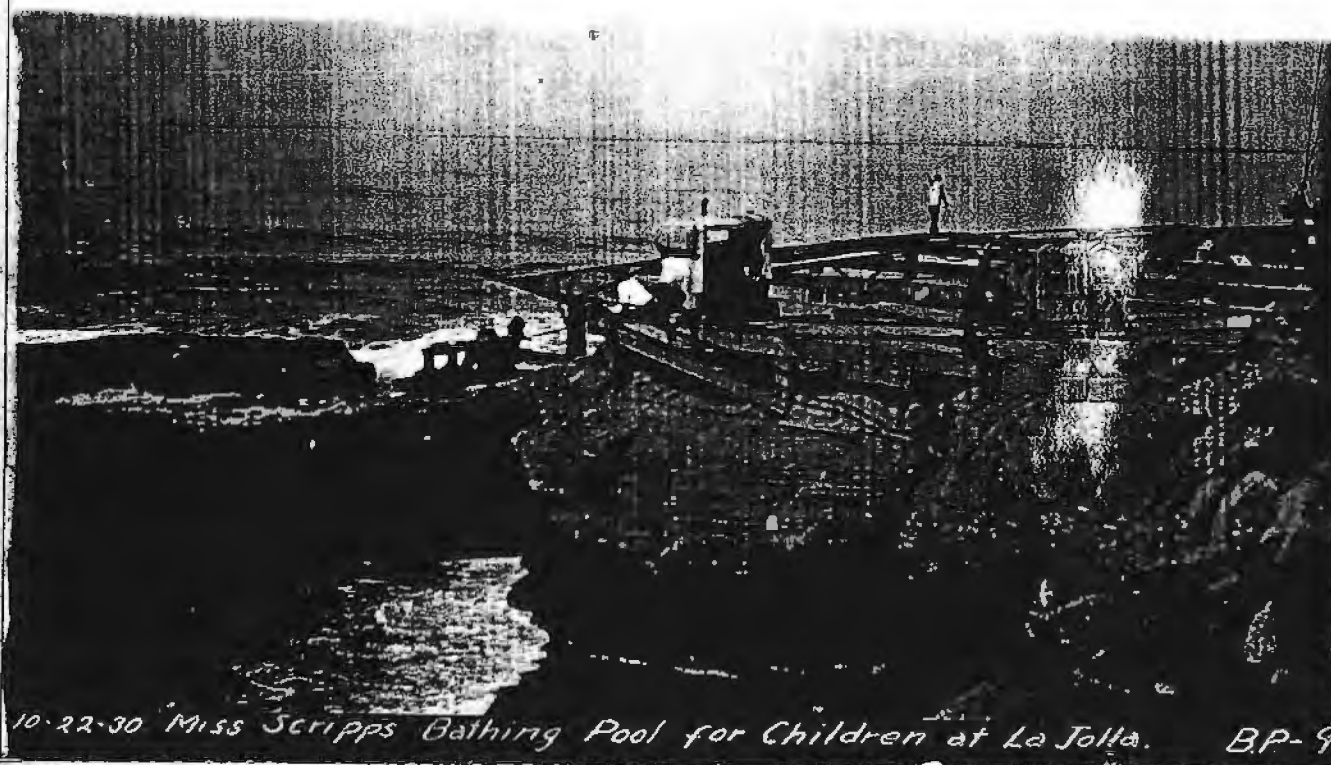
FILING SYSTEM

The field office filing system consisted of letter file folders properly marked which were carried to and from the work as required in a brief case by the Resident Engineer. In addition to the folders, there were two field books and a record book, this latter containing the resident engineer's diary. Upon completion of the work the entire field file, together with correspondence files kept in Mr. Savage's office, were brought together and are filed in Mr. Savage's office and are indexed as follows:

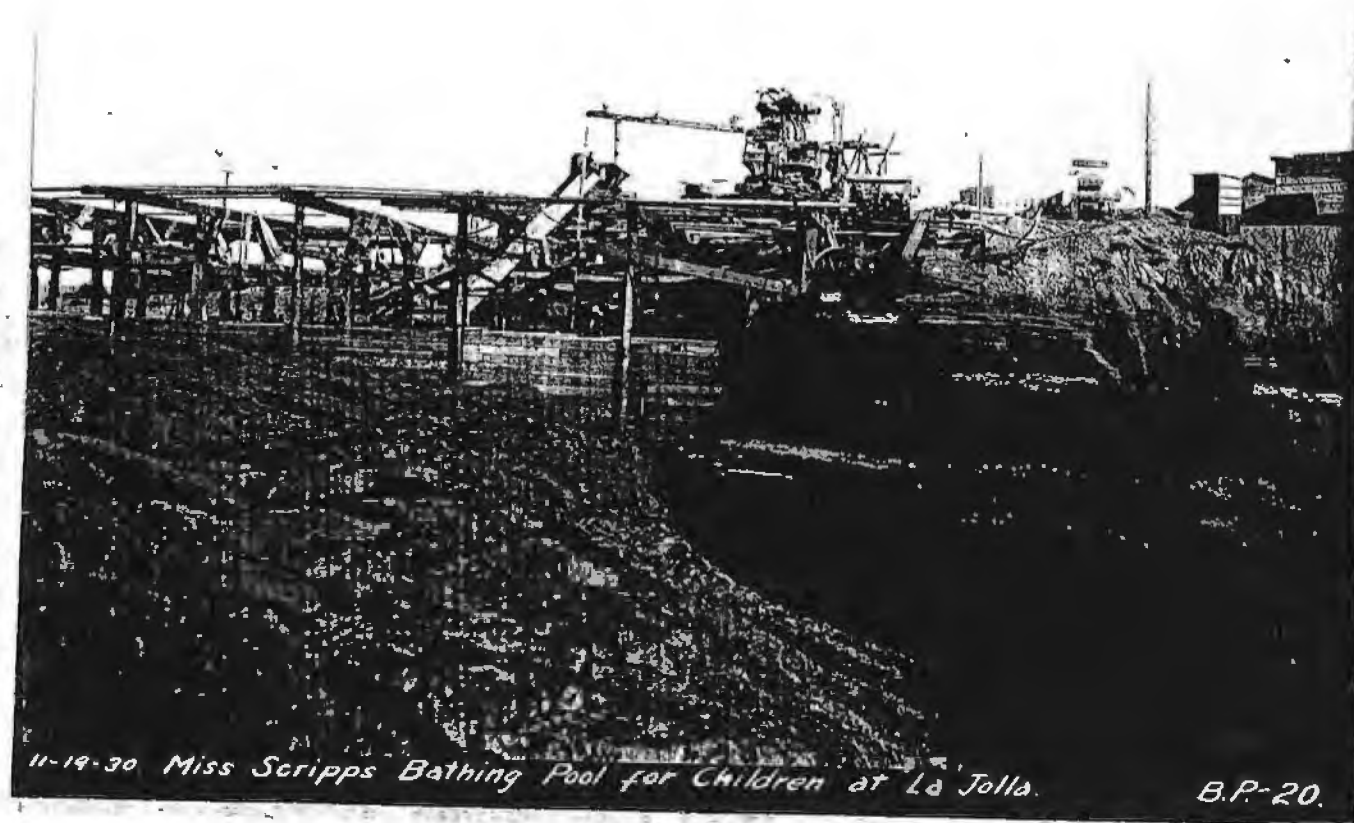
General	Letters, memoranda
Permit	State of California and correspondence
Permit	U. S. War Department and correspondence
Permit	City of San Diego and correspondence
Steel	Lists of steel rails, reinforcing steel ordered letters, delivery tags.
Estimates	Calculations of quantities. Copies of estimates and claims.
Extra Work	Copies of extra work orders 1 to 6, inclusive, and correspondence.
Drawings	All miscellaneous drawings; prints used by contractor sketches of grillages and gates; Architect's drawing for stairway Landscape Architect's original sketches Landscape Architect's drawings
Tracings	All tracings of drawings kept in H. N. Savage's personal file.
Ten Day Reports	June 30, 1930 to April 10, 1931, and Monthly Report June 1930 to
Photographs	Negatives are kept in H. N. Savage's personal photograph file.



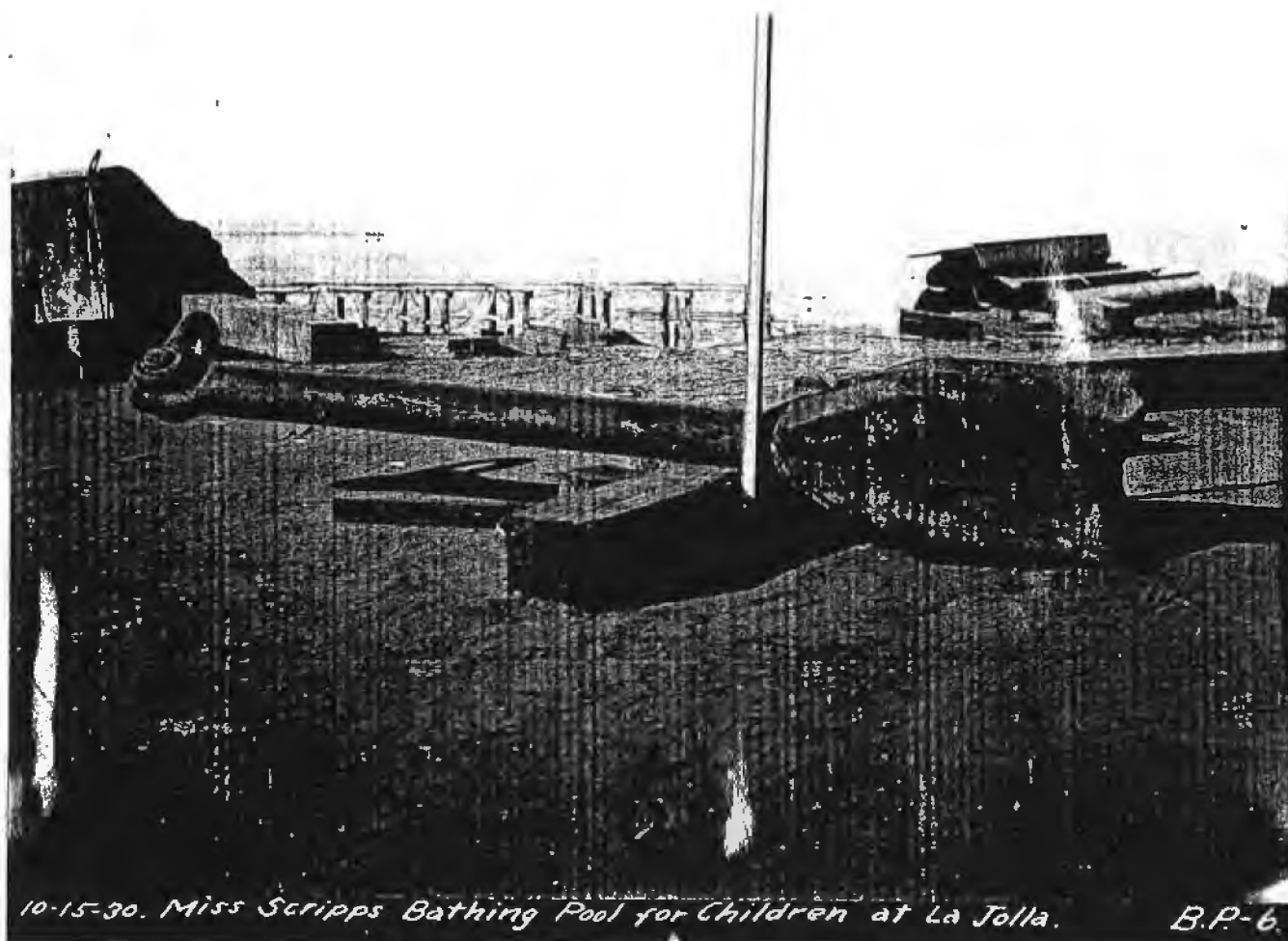
General view of completed breakwater, pool
and stairway structure.



Jet pump belted to Climax 125 H.P. engine,
top of false work and Hercules 50 H.P. engine
being moved to false work.



West crib, false work, pumps and concrete mixer
at shore end of breakwater.



10-15-30. Miss Scripps Bathing Pool for Children at La Jolla.

B.P.-6.

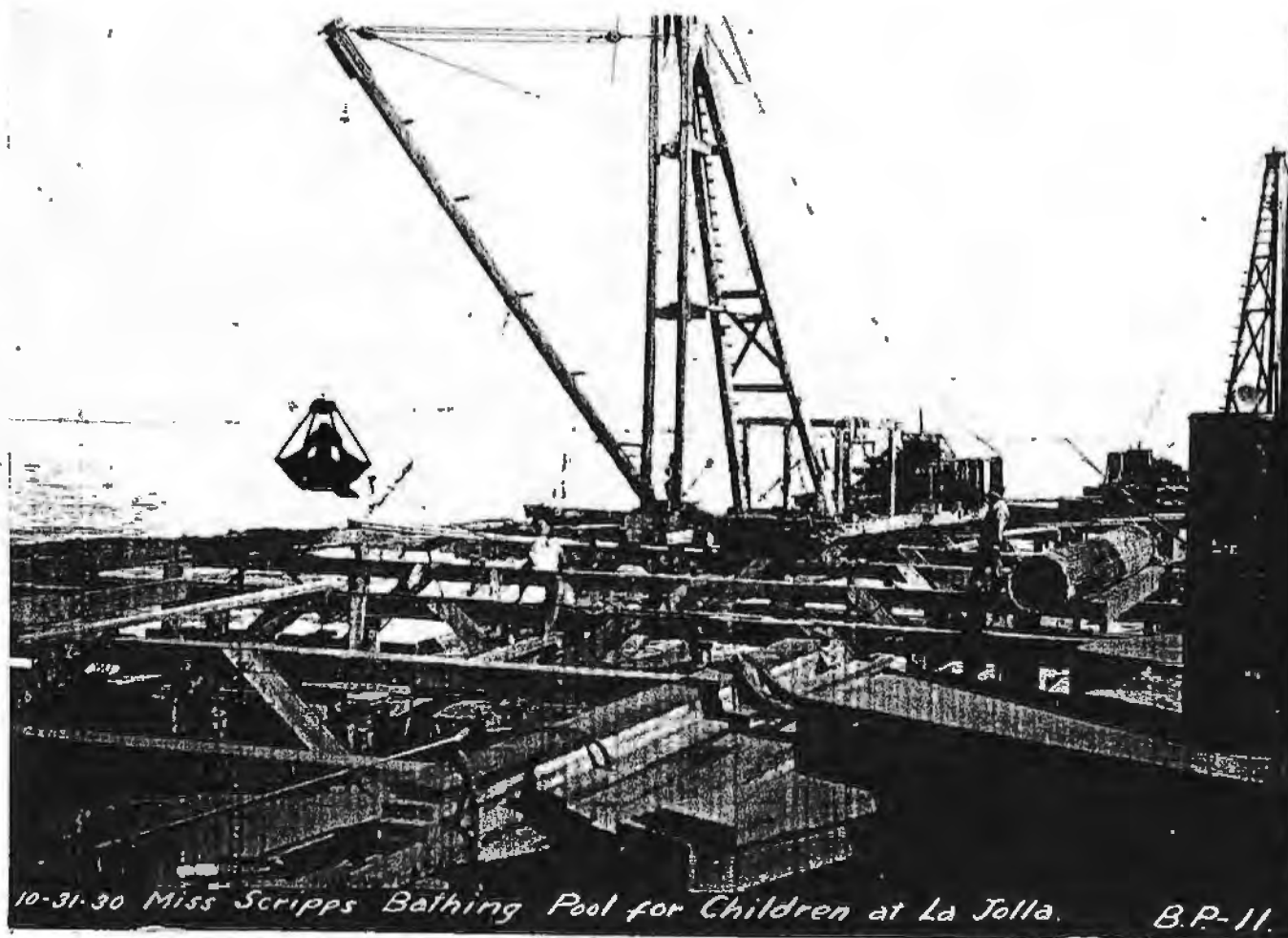
28 inch bit used for drilling cutoff trench



11-19-30 Miss Scripps Bathing Pool for Children at La Jolla.

B.P.-17.

Portion of cutoff trench from opposite 2+30 outward
before unwatering. Note man using pneumatic spade
to cut pilot trench in advance of drilling.

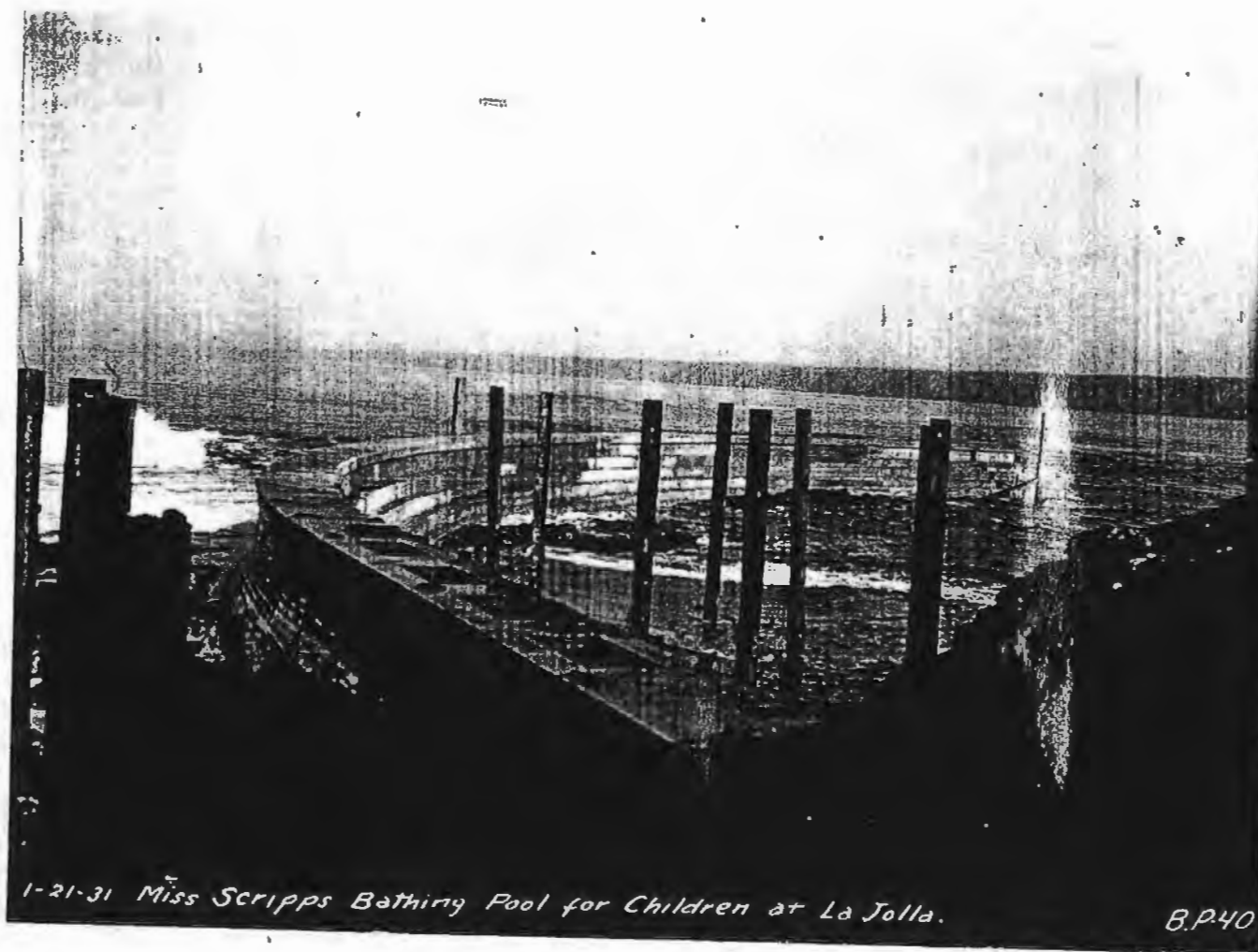


10-31-30 Miss Scripps Bathing Pool for Children at La Jolla.

B.P.-11.

Pile driver rigged as derrick with clamshell bucket
excavating for foundation within coffer dam.

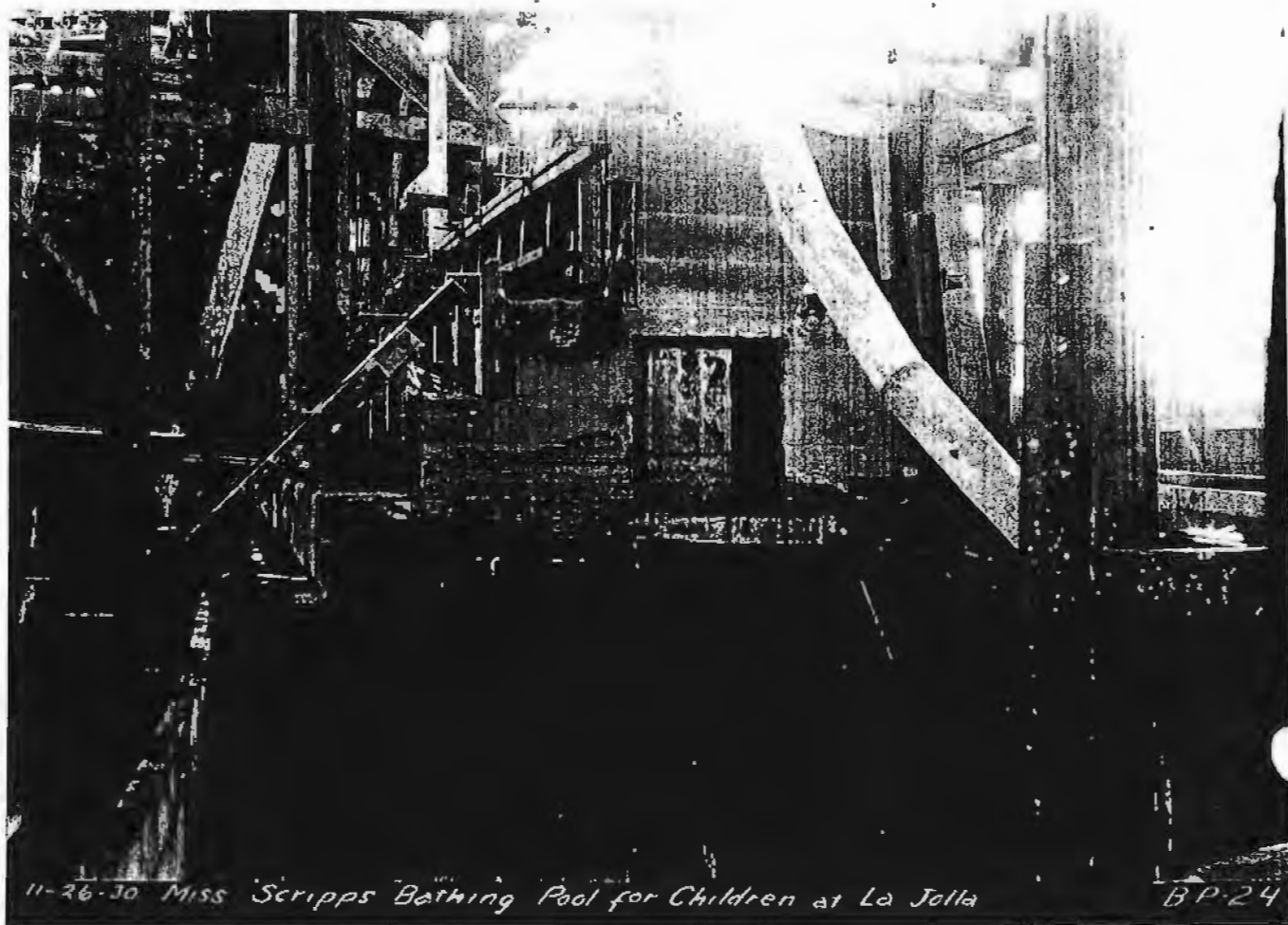
Note the 32 inch casing on the false work to the right.



1-21-31 Miss Scripps Bathing Pool for Children at La Jolla.

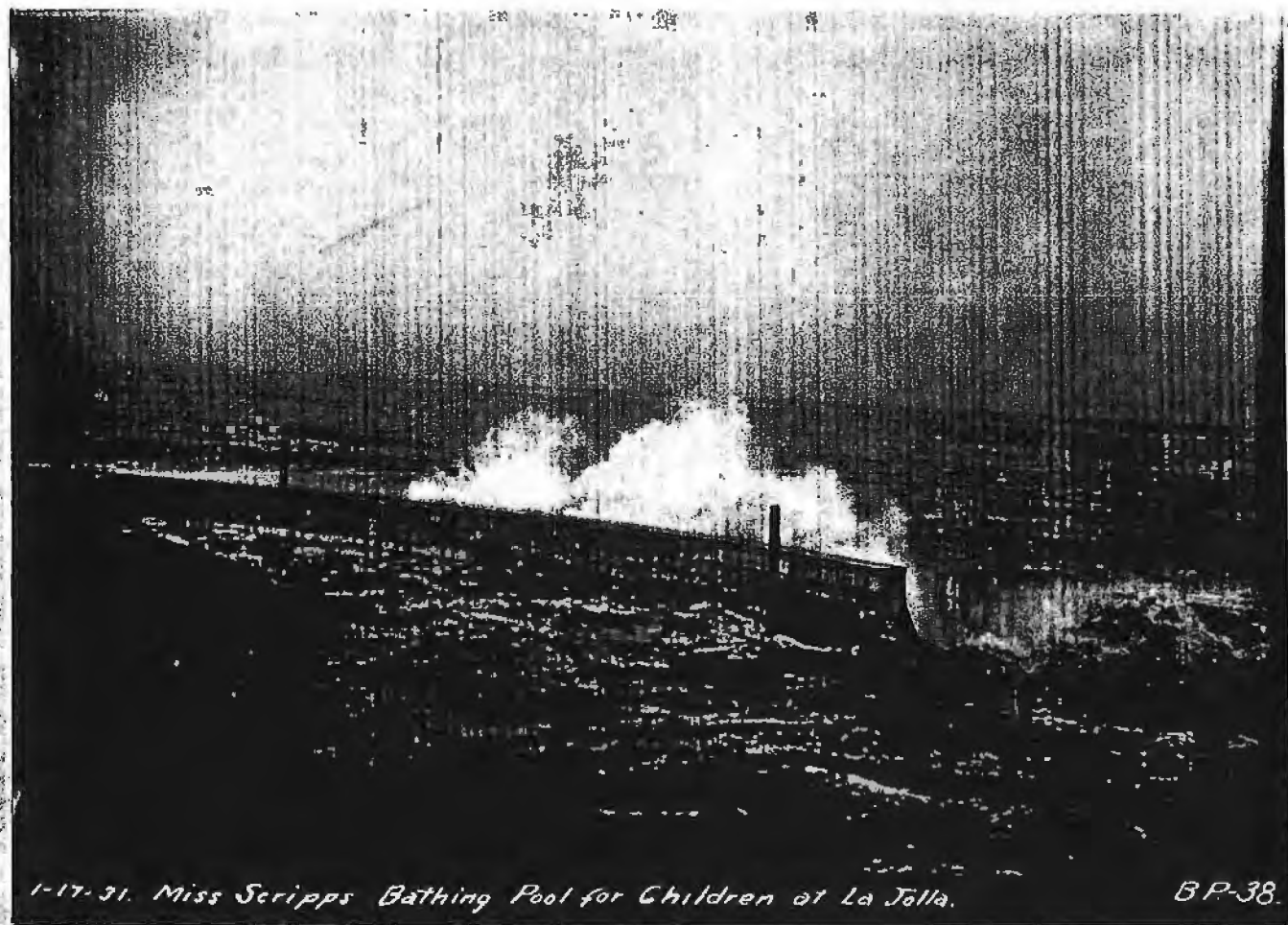
B.P.40

Breakwater - showing outside slope and curves.
Gate recesses over sluiceways in wall are in
the foreground.



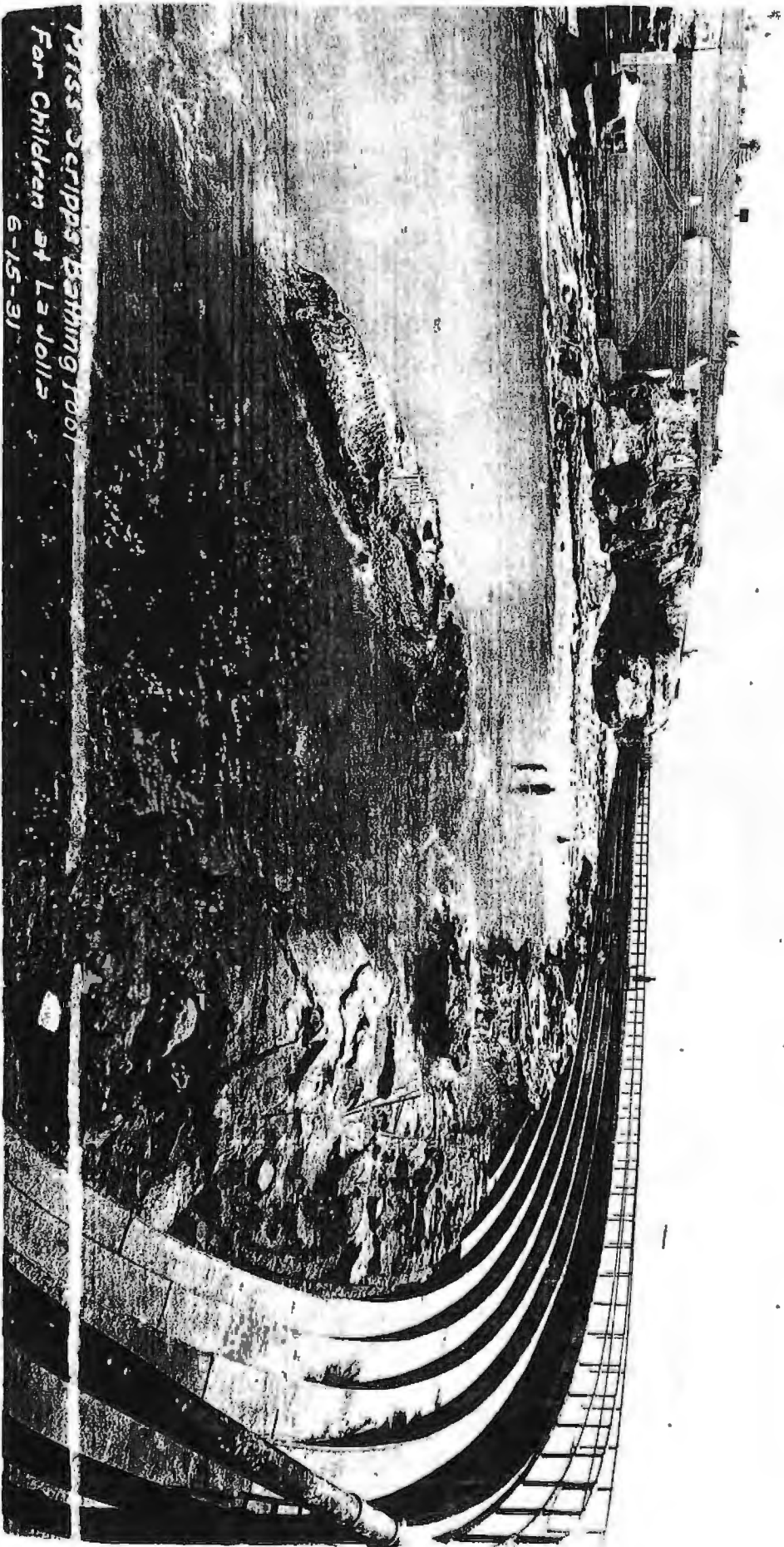
Contraction joint at outer end of section 1
(Station 1+58.0)

Note rails in place and horizontal step in
first pour of section 2.



Seas breaking against breakwater.

Second section from outer end has concrete only
three weeks old - no damage.



Miss Scripps Bathing 1901
For Children at La Jolla
6-15-31

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ELLEN BROWNING SCRIPPS

BATHING ZONE BREAKWATER

LA JOLLA, CALIFORNIA

Hiram Newton Savage
Engineer

INFORMATION FOR BIDDERS, PROPOSAL, DRAWINGS
and
SPECIFICATIONS

Proposals will be received at 524 F Street, San Diego,
California, until 12 o'clock noon, **Sept. 5**, 1930.

Information for Bidders

- Proposal
- Guaranty of Bonds
- Schedule
- Form of Contract
- Form of Faithful Performance Bond
- Form of Labor and Materialmen's Bond

SPECIFICATIONS--

General Conditions:

1. Form of proposal and signature
2. Proposal
3. Certified check
4. The contract
5. Contractor's bonds
6. Transfers
7. Engineer
8. Contractor
9. Samples or Specimens
10. Material and workmanship
11. Delays
12. Suspension of contract
13. Changes
14. Extra work or material
15. Delays-no extra compensation
16. Changes at contractor's request
17. Inspection
18. Contractor's financial obligations
19. Experience
20. Specifications and drawings
21. Local conditions
22. Data to be furnished by the contractor
23. Restrictions on disposition of plant, etc.
24. Damages
25. Character of workmen
26. Staking out work
27. Methods and appliances
28. Climatic conditions
29. Quantities and unit prices
30. Removal and rebuilding of defective work
31. Protection of work and cleaning up
32. Streets and fences
33. Bench marks and survey stakes
34. Right to construct
35. Sanitation
36. Subcontractors
37. Infringement of patents
38. Workman's compensation and indemnity insurance
39. Compliance with laws
40. Laborers and Mechanics

DETAIL SPECIFICATIONS--

Special Conditions:

41. Requirement
42. List of drawings
43. Commencement, prosecution and completion of work
44. Failure to complete the work in the time agreed upon
45. Progress estimates and payments

Excavation:

46. Excavation
47. Classification
48. Blasting

Concrete Structure:

49. Concrete breakwater
50. Anchor holes
51. Concrete composition
52. Cement
53. Diatomaceous earth
54. Steel rail and reinforcement
55. Sand
56. Broken rock or gravel
57. Water
58. Mixing
59. Placing
60. Tremie concrete
61. Finishing
62. Protection
63. Forms
64. Contraction joints
65. Payment for concrete structure

Appurtenances:

66. Appurtenances
67. Pipe railing
68. Page Hi-way guard
69. U bolts, cover plates and ladder steps

INFORMATION FOR BIDDERS

San Diego, California, June 25, 1930

Sealed proposals will be received at the office of H. N. Savage Engineer for Ellen Browning Scripps, 524 F Street, San Diego, California, until 12 o'clock noon, **September 5, 1930**, for the construction of Bathing Zone Breakwater, involving about 2200 cubic yards of excavation and furnishing and placing of about 2600 cubic yards of concrete, the furnishing of about 3150 barrels of cement and the placing and grouting of about 66,000 pounds of steel rail, and placing 12,000 pounds of reinforcing steel, all as more particularly and in detail set forth in those certain drawings and specifications attached hereto.

The proposed work is located in the Pacific Ocean opposite Casa de Manana, La Jolla, California. The contractor shall employ laborers and mechanics who are citizens of San Diego to the extent available and qualified in the construction of all the proposed work.

Work shall be commenced by the contractor within ten days after the execution of the contract on behalf of Ellen Browning Scripps and shall be completed within seventy-five days from date of signing contract.

Each proposal must be accompanied by an unconditional certified check for an amount not less than ten per cent of the aggregate sum of the bid, payable to the order of Ellen Browning Scripps, as a guaranty that the bidder will, if successful, promptly execute a satisfactory contract and furnish bonds for the faithful performance of the work as required by paragraph five of these specifications.

All proposals shall be made upon the forms attached hereto and must be placed in a sealed envelope, endorsed with the bidder's name, marked "Proposal for Bathing Zone Breakwater" and addressed to H. N. Savage, Engineer, 524 F Street, San Diego, California.

No bidder will be permitted to withdraw his proposal after the hour fixed in the information for bidders without rendering his certified check subject to forfeiture to Ellen Browning Scripps as liquidated damages as in case of refusal to execute contract and bond after award.

Bidders must satisfy themselves as to local conditions affecting the work, and no information derived from the maps, plans, specifications, profiles, or drawings, or from the engineer or his assistants, will relieve the contractor from any risk, or from fulfilling all of the terms of his contract. The accuracy of the interpretation of the facts disclosed by borings or other preliminary investigations is not guaranteed. Each bidder or his representative should visit the site of the work and familiarize himself with local conditions.

The quantities stated in the schedule are estimates and for comparing bids only, and no claim shall be made for increased cost by reason of excess or deficiency therein, actual or relative. Payment at the prices agreed upon will be in full for the completed work and

will cover materials, supplies, labor, tools, machinery, and all other expenditures incidental to satisfactory compliance with the contract, unless otherwise specifically provided.

The proposal and schedule submitted must not be detached from the drawings and specifications.

For and on behalf of the successful bidder Ellen Browning Scripps will purchase and pay for a bond, with a satisfactory surety company, in the sum of fifty thousand dollars (\$50,000) conditioned upon the faithful performance of said contract.

For and on behalf of the successful bidder Ellen Browning Scripps will purchase and pay for a labor and materialmen's bond, with a satisfactory surety company, in an amount of twenty-five thousand dollars (\$25,000), conditioned upon the payment by said contractor of all material or supplies furnished in the performance of the work contracted to be done by the terms of the contract, and for any work or labor done thereon of any kind.

The right is reserved to reject any and all bids, and/or to accept any part and reject any other part of any bid.

H. N. SAVAGE,

Engineer.

5-1-31

P

PROPOSAL

September 8, 1930

To Ellen Browning Scripps,
524 F Street,
San Diego, California.

Madam:

Pursuant to request inviting bids, and to information for bidders, the undersigned bidder herewith submits proposal on the schedule attached hereto and made part hereof, and binds himself on award, by Ellen Browning Scripps to execute in accordance with such award, a contract, with necessary bonds, of which this proposal, and the said information for bidders and specifications shall be a part, for performing and completing said contract within the time required and at the prices named in the specifications and in the schedule hereto attached.

The bidder furthermore agrees that, in case of his default in executing said contract with necessary bonds, the certified check accompanying this proposal and the money payable thereon shall become and remain the property of Ellen Browning Scripps.

W. M. Ledbetter & Co.

By J. C. Wright, Vice.Pres.

Signature _____

(CORPORATE SEAL)

By W. H. Spear, Secy.

P. O. Box 1264 Arcade Sta.

Address _____

Los Angeles, Calif.

(SEAL)

Names of individual members
of firm or names and titles
of all officers of corpora-
tion and their addresses.

Wm. M. Ledbetter, Pres.

109 Ave 34, Venice Cal.

W. H. Spear, Secy & Treas.

636 N. Lucerne Los Angeles

J. C. Wright, Vice.Pres.

1805 W. 12th Pl. Los Angeles

Corporation organized under the laws of the State of California.

Affidavit showing authority of officers of corporation to
execute contract must be attached hereto.

BATHING ZONE BREAKWATER

SCHEDULE

Item	No.	Work or Material	Quantity and Price	Amount
1.		Excavation for cutoff wall and foundation of breakwater 850 cubic yards at _____ words	(\$ 3.80)per cubic yard	\$ 3230.00
2.		Excavation for bathing zone 1000 cubic yards at _____ words	(\$ 1.80)per cubic yard	\$ 1800.00
3.		Excavation for dressing stalls and steps, including backfill and disposal of surplus material 300 cubic yards at _____ words	(\$ 0.90)per cubic yard	\$ 270.00
4.		Concrete in place in breakwater exclusive of cement and steel reinforcement 2500 cubic yards at _____ words	(\$ 12.96)per cubic yard	\$23400.00
5.		Concrete in place in structures other than breakwater exclusive of cement and steel reinforcement 140 cubic yards at _____ words	(\$ 19.50)per cubic yard	\$ 2730.00
6.		Cement in place in the work 3150 barrels at _____ words	(\$ 2.90)per barrel	\$ 9135.00
7.		Steel rails, bending, placing and grouting 66,000 pounds at _____ words	(\$0.0065)per pound	\$ 429.00
8.		Reinforcing steel, benging and placing 12,000 pounds at _____ words	(\$0.01)per pound	\$ 120.00
9.		Seven inch diameter holes drilled in sand rock 1,400 linear feet at _____ words	(\$2.10)per linear foot	\$ 2940.00

Item	No. Work or Material	Quantity and Price	Amount
10.	Seven inch diameter drill holes in granite rock 120 linear feet at _____ words	(\$ 3.00)per linear foot	\$ 360.00
11.	Two inch pipe railing in place 650 linear feet at _____ words	(\$ 2.25)per linear foot	\$1462.50
12.	Twenty-four inch width Page Hi-way Guard in place 330 linear feet at _____ words	(\$ 0.60)per linear foot	\$ 198.00
13.	Furnishing in place 3 - 1½" "U" bolts in outer end of breakwater 4 cover plates for gate and gate hoist recesses and 12 ladder steps at _____ words	(\$140.50)lump sum	\$ 140.50

The bid as given in detail above is contingent on the entire work being let in one contract.

W. M. Ledbetter & Co.

By J. C. Wright, Vice.Pres.

FORM OF CONTRACT

THIS AGREEMENT, made and entered into at The City of San Diego, County of San Diego, State of California, this 16 day of September, 1930, by and between ELLEN BROWNING SCRIPPS, a private individual residing in the County of San Diego, State of California, the party of the first part, and _____

W. M. Ledbetter & Co.

party of the second part, and hereinafter sometimes designated as the Contractor, WITNESSETH:

ARTICLE I. That for and in consideration of the covenants and agreements hereinafter contained on the part of Ellen Browning Scripps, and the sums of money hereinafter designated to be paid to the contractor by Ellen Browning Scripps, in manner and form as hereinafter in attached specifications provided, the contractor hereby covenants and agrees to and with Ellen Browning Scripps to furnish all labor, tools, appliances, equipment, plant and transportation, and any and all other expense necessary or incidental to the performance of certain work hereinafter specified, and to build, erect, construct, complete and install a Bathing Zone Breakwater at La Jolla in the County of San Diego, State of California, as per information for bidders, proposal of contractor, schedule, and plans and specifications hereunto attached and by reference thereto incorporated herein and made a part hereof as though in this paragraph fully set forth.

ARTICLE II. In consideration of the construction and completion of the work by the contractor herein undertaken, according to the terms of this contract, and the faithful performance of all the obligations and covenants by the contractor herein undertaken and agreed upon, the contractor shall be paid as is provided in the specifications attached hereto.

ARTICLE III. The contractor hereby agrees that he will be bound by each and every part of the plans and specifications, and do and cause to be done all of said work and improvement as specified in the specifications and as shown upon the plans, as the same may be interpreted by H. N. Savage, Engineer for Ellen Browning Scripps.

ARTICLE IV. No interest in this agreement shall be transferred by the Contractor to any other party, and any such transfer shall cause annulment of this contract, so far as Ellen Browning Scripps is concerned. All rights of action, however, for any breach of this contract are reserved to Ellen Browning Scripps.

ARTICLE V. The contractor shall keep harmless and indemnify Ellen Browning Scripps, her attorney in fact and agents, from all damage, cost or expense that arises or is set up for infringement of patent rights of any one for use by Ellen Browning Scripps of articles supplied by the contractor under this contract, of which he is not patentee, or which he is not entitled to use or sell.

IN WITNESS WHEREOF, this contract is executed by Ellen Browning Scripps; and the contractor has caused these presents to be executed, and its corporate name and seal to be hereunto attached by its proper officers, thereunto duly authorized, the day and year first hereinabove written.

ELLEN B. SCRIPPS

By W. C. Grandall, Agent

W. M. Ledbetter & Co. (SEAL)

By W. M. Ledbetter, Pres.

By W. H. Spear Secy
Contractor.

(If executed by an individual or partnership contractor, appropriate changes shall be made in the last preceding paragraph.)

Approved by H. N. Savage
Engineer.

STATE OF CALIFORNIA }
County of San Diego } SS.

I, W. H. Spear, being first duly sworn depose and say that I am Secretary of W. M. Ledbetter & Co. and that in accordance with the by-laws of the W. M. Ledbetter & Co., the following officers are authorized to sign any and all bids made by the Company: -
W. M. Ledbetter, as President, and W. H. Spear, as Secretary.

W. H. Spear

Subscribed and sworn to before me
this 16th day of September 1930

W. E. Stevens
Notary Public in and for the County
of San Diego, State of California (SEAL)

IN WITNESS WHEREOF, this contract is executed by Ellen Browning Scripps; and the contractor has caused these presents to be executed, and its corporate name and seal to be hereunto attached by its proper officers, thereunto duly authorized, the day and year first hereinabove written.

ELLEN B. SCRIPPS

By W. C. Crandall, Agent

W. M. Ledbetter & Co. (SEAL)

By W. M. Ledbetter, Pres.

By W. H. Spear Secy
Contractor.

La Jolla, California

September 15, 1930

Mr. W. C. Crandall:

In my authorization for the Pool, under date of June 23, 1930 I authorized you to proceed and to draw upon my funds up to \$50,000.00 therefor. You have now provided the information that it will cost about \$70,000.00 for the construction of this pool.

I therefore authorize you to sign contracts in my name and to do any and all other things necessary in the premises, up to the sum of Seventy Thousand Dollars (\$70,000.00).

Ellen B. Scripps.

I hereby certify that the above is a true and correct copy of the original document, signed by Miss Scripps Sept. 15th, 1930.

Ellen Morrill Mills

(SEAL)

Notary Public in and for the
City and County of San Diego,
State of California.
My commission expires Jan. 30th,
1932.

FORM OF FAITHFUL PERFORMANCE BOND

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KNOW ALL MEN BY THESE PRESENTS, That _____

W. M. Ledbetter & Co.,

as principal, and Indemnity Insurance Company of North America
a corporation organized and existing under and by virtue of the laws of
the State of Pennsylvania as surety, are held and firmly
bound unto Ellen Browning Scripps, a private individual in the County
of San Diego, State of California, in the sum of Fifty Thousand Dollars
(\$50,000), lawful money of the United States of America, to be paid to
Ellen Browning Scripps, for the payment of which, well and truly to be
made, we hereby bind ourselves, our heirs, administrators, executors,
successors and assigns, jointly and severally, firmly by these presents.

Signed by us and dated this 15 day of September 1930.

The condition of the above and foregoing obligation is such that
whereas, the said principal has entered into the annexed contract with
Ellen Browning Scripps to furnish all materials, and all labor, tools,
appliances, transportation and other expenses necessary or incidental
to the construction, completion and installation of a Bathing Zone
Breakwater at La Jolla in the County of San Diego, State of California,
all as more particularly and in detail set forth in the plans and
specifications attached to said contract and made a part thereof as in
said contract provided; and reference is hereby made to said contract
and to said plans and specifications for a particular description of
the work to be done.

Now, therefore, if the said principal shall faithfully perform the
said contract, then the above obligation to be void, otherwise to remain
in full force and effect.

IN WITNESS WHEREOF, the said principal and surety have caused these
presents to be executed and their corporate names and seals to be here-
unto attached by their proper officers, thereunto duly authorized, the
day and year first hereinabove written.

STATE OF CALIFORNIA, }
County of San Diego } ss.

On this 15th day of September in the year one thousand nine
hundred and thirty, before me R. DARYL COLLINS, a Notary Public
in and for the County of San Diego personally appears Austen G.
Brown known to me to be the person whose name is subscribed to
the within instrument as the Attorney-in-fact of the INDEMNITY
INSURANCE CO. OF NORTH AMERICA, and acknowledged to me that he
subscribed the name of the Indemnity Insurance Co. of North
America thereto as principal, and his own name, as Attorney-in-
fact.

R. DARYL COLLINS

Notary Public in and for the County
of San Diego, State of California.

(SEAL)

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FORM OF LABOR AND MATERIALMEN'S BOND

KNOW ALL MEN BY THESE PRESENTS, That

W. M. Ledbetter & Co.

as principal, and

Indemnity Insurance Company of North America

a corporation organized and existing under and by virtue of the laws of

the State of Pennsylvania, as surety, are held and firmly bound unto Ellen Browning Scripps, a private individual in the County

of San Diego, State of California, in the sum of Twenty-five Thousand Dollars (\$25,000), lawful money of the United States of America, to be paid to said Ellen Browning Scripps for the payment of which, well and truly to be made, we hereby bind ourselves, our heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

Signed by us and dated this 15 day of September 1930.

The conditions of the above and foregoing obligation is such that whereas, the said principal has entered into the annexed contract with Ellen Browning Scripps to furnish all materials, and all labor, tools, appliances, transportation and other expenses necessary or incidental to the construction, completion and installation of a Bathing Zone Breakwater at La Jolla in the County of San Diego, State of California, all as more particularly and in detail set forth in the plans and specifications attached to said contract and made a part thereof as in said Contract provided; and reference is hereby made to said contract and to said plans and specifications for a particular description of the work to be done.

And, whereas, the aforesaid penal sum of Twenty-five Thousand Dollars (\$25,000), being not less than one-half of the total amount payable by the terms of said contract, is intended and is hereby made to inure to and for the use of any and all persons, companies or corporations who perform labor on or furnish materials to be used in the said work;

Now, therefore, if the above bounden principal fails to pay for any materials or supplies furnished in the performance of the work contracted to be done by the terms of said contract, or for any work or labor done thereon, of any kind, that the said surety will pay the same in an amount not exceeding the sum specified in this bond.

IN WITNESS WHEREOF, the said principal and surety have caused these presents to be executed and their corporate names and seals to

be hereunto attached by their proper officers thereunto duly authorized, the day and year first hereinabove written.

W. M. Ledbetter & Co. (SEAL)

Principal

ATTEST:

By W. M. Ledbetter, Pres.

By S. H. Spear, Secy.

Indemnity Insurance Company of

North America Surety

ATTEST:

By Austin G. Brown (SEAL)

Attorney-in-fact

(If executed by an individual or partnership contractor, appropriate changes shall be made in the last preceding paragraph.)

Approved by H. N. Savage

STATE OF CALIFORNIA

County of San Diego

} SS.

On this 15th day of September in the year one thousand nine hundred and thirty, before me R. DARYL COLLINS, a Notary Public in and for the County of San Diego personally appears Austin G. Brown known to me to be the person whose name is subscribed to the within instrument as the Attorney-in-fact of the INDEMNITY INSURANCE CO. OF NORTH AMERICA, and acknowledged to me that he subscribed the name of the Indemnity Insurance Co. of North America thereto as principal, and his own name as Attorney-in-fact.

R. DARYL COLLINS

(SEAL)

Notary Public in and for the County
of San Diego, State of California

SPECIFICATIONS

General Conditions

1. FORM OF PROPOSAL AND SIGNATURE.- The proposal shall be made on the form provided therefor and shall be enclosed in a sealed envelope marked and addressed as required in the information for bidders. The bidder shall state in words and figures the unit prices or the specified sums, as the case may be, for which he proposes to supply the materials or machinery and perform the work required by these specifications. If the proposal is made by an individual it shall be signed with his full name, and his address shall be given; if it is made by a firm it shall be signed with the copartnership name by a member of the firm, who shall also sign his own name, and the name and address of each member and the address of the firm shall be given; and if it is made by a corporation, it shall be signed by an officer with the corporate name attested by the corporate seal, and the names, addresses and titles of all officers of the corporation and the address of the corporation shall be given. No telegraphic proposal or telegraphic modification of a proposal will be considered.

2. PROPOSAL.- Blank spaces in the proposal should be properly filled. The phraseology of the proposal must not be changed, and no additions should be made to the items mentioned therein. Unauthorized conditions, limitations or provisos attached to a proposal will render it informal and may cause its rejection. Alterations by erasure or interlineation must be explained or noted in the proposal over the signature of the bidder. If the unit price and the total amount named by a bidder for any item do not agree, the unit price alone will be considered as representing the bidder's intention. A bidder may withdraw his proposal before the expiration of the time during which proposals may be submitted, without prejudice to himself, by submitting a written request for its withdrawal to the officer who holds it. No proposals received after said time or at any place other than the place of opening as stated in information for bidders will be considered. Bidders, their representatives, and others interested, are invited to be present at the opening of proposals. The right is reserved to reject any or all proposals, to accept one part of a proposal and reject the other, and to waive technical defects, as the interest of Ellen Browning Scripps may require.

3. CERTIFIED CHECK.- Each bidder shall submit with his proposal an unconditional certified check for the sum stated in the information for bidders, payable to the order of "Ellen Browning Scripps." Any condition or limitation placed upon a certified check will render it informal and may result in the rejection of the proposal under which such check is submitted. If the bidder to whom an award is made fails or refuses to execute the required contract and bond within the time specified in paragraph four, or such additional time as may be allowed by the engineer, the proceeds of his check shall become the property of Ellen Browning Scripps, the proceeds of said check being hereby agreed upon as liquidated damages to Ellen Browning Scripps on account of the delay in the execution of the contract and bond and the performance of work thereunder, and the necessity of accepting a higher or less desirable bid resulting from such failure or refusal to execute contract and bond as required. The check of the successful bidder will be returned after the execution of his contract and

delivery of his bonds; and the checks of the other bidders will be returned at the expiration of thirty days from the date of opening bids, or sooner if contract is executed prior to that time.

4. THE CONTRACT.- The bidder to whom award is made shall execute written contract with Ellen Browning Scripps and furnish good and approved bonds within ten days after award of contract is made. The contract shall be made on the form attached hereto. If the bidder to whom award is made fails to enter into contract as herein provided, the award will be annulled, and an award may be made to the next lowest responsible bidder, and such bidder shall fulfill every stipulation embraced herein as if he were the party to whom the first award was made. The information for bidders, proposal, general conditions, and detail specifications will be incorporated in the contract. A corporation to which an award is made will be required, before the contract is finally executed, to furnish evidence of its corporate existence and evidence that the officer signing the contract and bond for the corporation is duly authorized to do so.

5. CONTRACTOR'S BONDS.- The contractor shall furnish and Ellen Browning Scripps will pay for a labor and materialmen's bond in an amount of Twenty-five Thousand Dollars (\$25,000), lawful money of the United States of America, to be paid to Ellen Browning Scripps, conditioned upon the payment by said contractor of all materials or supplies furnished in the performance of the work contracted to be done by the terms of said contract, and for any work or labor of any kind done hereon.

The contractor shall also furnish and Ellen Browning Scripps will pay for a faithful performance bond in the amount of Fifty Thousand Dollars (\$50,000), lawful money of the United States of America, to be paid to Ellen Browning Scripps, conditioned upon the faithful performance by the contractor of all covenants and stipulations in the contract.

If, during the continuance of the contract, any of the sureties is, or, in the opinion of Ellen Browning Scripps, are or become irresponsible, Ellen Browning Scripps may require additional sufficient sureties, which the contract shall furnish and Ellen Browning Scripps will pay for, to the satisfaction of Ellen Browning Scripps, within ten days after notice, and in default thereof the contract may be suspended by Ellen Browning Scripps and the materials purchased or the work completed as provided in paragraph 12.

6. TRANSFERS.- No interest in this agreement shall be transferred to any other party, and any such transfer shall cause annulment of the contract so far as Ellen Browning Scripps is concerned; all rights of action, however, for breach of this contract are reserved to Ellen Browning Scripps.

7. ENGINEER.- The work "Engineer" used in these specifications or in the contract means H. N. Savage Engineer for Ellen Browning Scripps. He will be represented by assistants and inspectors authorized to act for him. On all questions concerning the acceptability of material, quality, the classification of material, the execution of the work, conflicting interests of contractors performing related work, and the determination of costs, the decision of the said engineer shall be final and binding upon both parties.

every of his bonds; and the checks of the other bidders will be returned at the expiration of thirty days from the date of opening proposals, or sooner if contract is executed prior to that time.

4. THE CONTRACT.- The bidder to whom award is made shall execute written contract with Ellen Browning Scripps and furnish good and approved bonds within ten days after award of contract is made. The contract shall be made on the form attached hereto. If the bidder to whom award is made fails to enter into contract as herein provided, the award will be annulled, and an award may be made to the next lowest responsible bidder, and such bidder shall fulfill every stipulation embraced herein as if he were the party to whom the first award was made. The information for bidders, proposal, general conditions, and all specifications will be incorporated in the contract. A corporation to which an award is made will be required, before the contract is fully executed, to furnish evidence of its corporate existence and evidence that the officer signing the contract and bond for the corporation is duly authorized to do so.

5. CONTRACTOR'S BONDS.- The contractor shall furnish and Ellen Browning Scripps will select the surety company and pay for both faithful Performance Bond and Labor and Materialmen's Bond.

The contractor shall pay for a faithful performance bond in the sum of \$50,000, lawful money of the United States of American, to be paid to Ellen Browning Scripps, conditioned upon the faithful performance by the contractor of all covenants and stipulations in the contract.

If, during the continuance of the contract, any of the sureties or, in the opinion of Ellen Browning Scripps, are or become irresponsible, Ellen Browning Scripps may require additional sufficient sureties, which the contract shall furnish and Ellen Browning Scripps shall pay for, to the satisfaction of Ellen Browning Scripps, within ten days after notice, and in default thereof the contract may be suspended. Ellen Browning Scripps and the materials purchased or the work completed as provided in paragraph 12.

6. TRANSFERS.- No interest in this agreement shall be transferred to any other party, and any such transfer shall cause annulment of the contract so far as Ellen Browning Scripps is concerned; all rights of Ellen Browning Scripps, however, for breach of this contract are reserved to Ellen Browning Scripps.

(Add to paragraph 7)

and Ellen Browning Scripps or her legal representative may change the engineer referred to in the specifications and contract from time to time, if they be so advised, and in that event the word "engineer" shall include whatever person may for the time being be so designated as engineer by said Ellen Browning Scripps or her legal representative.

W.C.C. for E.B.S.

W.M.L. & CO.

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8. CONTRACTOR.- The word "Contractor" used in these specifications or in the contract, means the person, firm, or corporation with whom the contract is made by Ellen Browning Scripps. The contractor shall at all times be represented on the works in person or by a foreman or duly designated agent. Instructions and information given by the engineer to the contractor's foreman or agent on the work shall be considered as having been given to the contractor. When two or more contractors are engaged on installation or construction work in the same vicinity the engineer shall be authorized to direct the order, manner and rate in which each shall conduct his work so far as it affects other contractors.

9. SAMPLES OR SPECIMENS.- The contractor shall submit samples or specimens of such materials to be furnished or used in the work as the engineer may require.

10. MATERIAL AND WORKMANSHIP.- All materials must be of the specified quality and equal to approved samples if samples have been submitted. All work shall be done and completed in a thorough, workmanlike manner, notwithstanding any omission from these specifications or the drawings, and it shall be the duty of the contractor to call the engineer's attention to apparent errors or omissions and request instructions before proceeding with the work. The engineer may by appropriate instructions correct errors and supply omissions, which instructions shall be as binding upon the contractor as though contained in the original specifications or drawings. All materials furnished and all work done must be satisfactory to the engineer. Work, material, or machinery not in accordance with these specifications, in the opinion of the engineer, shall be made to conform thereto. Unsatisfactory material will be rejected, and, if so ordered by the engineer, shall, at the contractor's expense, be immediately removed from the vicinity of the work.

11. DELAYS.- If any delay is caused the contractor by specific orders of the engineer to stop work, or by the performance of extra work ordered by the engineer, or by the failure of Ellen Browning Scripps to provide material, or necessary instructions for carrying on the work, or to provide the necessary right of way, or site for installation, or by unforeseen causes beyond the control of the contractor, such delay will entitle the contractor to an equivalent extension of time, except as otherwise provided in paragraph 28. Application for extension of time must be approved by the engineer and shall be accompanied by the formal consent of the sureties, but an extension of time, whether with or without such consent, shall not release the sureties from their obligations, which shall remain in full force until the discharge of the contract. If delays from any of the above-mentioned causes occur after the expiration of the contract period no liquidated damages shall accrue for a period equivalent to such delay.

12. SUSPENSION OF CONTRACT.- If the contractor fails to begin the delivery of the material, or to commence work as provided in the contract, or fails to make delivery of material promptly as ordered, or to maintain the rate of delivery of material or progress of the work in such manner as in the opinion of the engineer will insure a full compliance with the contract within the time limit, or if in the opinion of the engineer the contractor is not carrying out the provisions of the contract in their true intent and meaning, written notice will be served on him to provide within a specified time for a satisfactory compliance with the contract, and if he neglects or refuses to

comply with such notice the engineer may with the written consent of Ellen Browning Scripps suspend the operation of all or any part of the contract, or he may in his discretion after such notice perform any part of the work or purchase any or all of the material included in the contract or required for the completion thereof without suspending the contract. Upon suspension of contract the engineer may in his discretion take possession of all or any part of the machinery, tools, appliances, animals, materials, and supplies used in the work covered by the contract or that have been delivered by or on account of the contractor for use in connection therewith, and the same may be used either directly by Ellen Browning Scripps or by other parties for her, in the completion of the work suspended; or Ellen Browning Scripps may employ other parties to perform the work, or may substitute other machinery or materials, purchase the material contracted for in such manner as she may deem proper, or hire such force and buy such machinery, tools, appliances, animals, materials and supplies at the contractor's expense as may be necessary for proper conduct and completion of the work. Any cost to Ellen Browning Scripps in excess of the contract price, arising from the suspension of the contract, or from work performed or purchases made by Ellen Browning Scripps either before or after suspension, and required on account of the failure of the contractor to comply with his contract or the orders of the engineer issued in pursuance thereof, will be charged to the contractor and his sureties, who shall be liable therefor. A special lien to secure the claims of Ellen Browning Scripps in the event of suspension of the contract is hereby created against any property of the contractor taken into the possession of Ellen Browning Scripps under the terms hereof, and such lien may be enforced by a sale of such property under the direction of Ellen Browning Scripps, and the proceeds of the sale, after deducting all expenses thereof, and connected therewith, shall be credited to the contractor. If the net credits shall be in excess of the claims of Ellen Browning Scripps against the contractor the balance will be paid to the contractor or his legal representatives. If, in the opinion of the engineer, an emergency exists for the furnishing of certain material or the performance of certain work in order to insure compliance with the terms of the contract, and if the contractor fails to furnish such material or to perform such work within a reasonable time fixed by written notice from the engineer to the contractor, then the engineer shall have the power to furnish such material or to perform such work at the expense of the contractor and his sureties, who shall be liable therefor. In the determination of the question whether there has been such non-compliance with the contract as to warrant its suspension or the furnishing of material or the performance of work by Ellen Browning Scripps as herein provided, the decision of the engineer shall be final and binding upon both parties. Suspension of the contract, or any part thereof, shall operate only to terminate the right of the contractor to proceed with the work covered by the contract or the suspended portions thereof. The provisions of the contract permitting Ellen Browning Scripps to make changes and to make proper adjustment of accounts to cover any increase or decrease of cost on account of such changes, and all other stipulations of the contract except those giving the contractor the right to proceed with work on the items covered by the suspension, shall be and remain in full force and effect after such suspension and until the contract shall have been completed and final payment or final adjustment of accounts made.

13. CHANGES.- The engineer may, without notice to the sureties on the contractor's bonds, make changes; (a) in the designs or materials or machinery; (b) in the plans for installation or construction; (c) in quantities or character of the work or material required. The changes in plans for installation or construction may also include (a) modifications of shapes and dimensions of the breakwater and other structures and excavation therefor; (b) the shifting of locations to suit conditions disclosed as work progresses. If such changes result in an increase or decrease of cost to the contractor, the engineer will make such additions or deductions on account thereof as he may deem reasonable and proper, and such action thereon shall be final, subject to approval by Ellen Browning Scripps. Extra work or material shall be charged for as hereinafter provided.

14. EXTRA WORK OR MATERIAL.- In connection with the work covered by this contract, the engineer may at any time during the progress of the work, order work or material not covered by the specifications. Such work or material will be classed as extra work and will be ordered in writing. No extra work or material will be paid for unless ordered in writing by the engineer. No extra work or material costing in excess of \$1,000 will be ordered by the engineer without the approval of Ellen Browning Scripps. Extra work or material shall be charged for at actual necessary cost, as determined by the engineer, plus fifteen per cent for profit, superintendence, and general expenses. The actual necessary cost will include all expenditures for materials, labor, additional premiums on "Workmen's Compensation and Indemnity Insurance," and supplies furnished by the contractor, and in connection with the manufacture of machinery a reasonable allowance for the use of shop and field equipment where required, but will in no case include any allowance for office expenses, general superintendence or other general expense. At the end of each month the contractor shall present in writing any claims for extra work performed during that month and extra material delivered during that month and, when requested by the engineer, shall furnish itemized statement of the cost and shall permit examination of accounts, bills, and vouchers relating thereto. No such claim will be allowed which is not presented to the engineer in writing within thirty days after the close of the calendar month, during which the extra work or material covered by such claim is alleged to have been furnished, and any such claim not so presented will be deemed to have been waived by the contractor.

15. DELAYS--NO EXTRA COMPENSATION.- The contractor shall receive no compensation for delays or hindrances to the work except, when in the judgment of the engineer, direct and unavoidable extra cost to the contractor is caused by the failure of Ellen Browning Scripps to provide necessary information, material, right of way, or site for installation. When such extra compensation is claimed a written itemized statement setting forth in detail the amount thereof shall be presented by the contractor not later than thirty days after the close of the calendar month during which extra cost is claimed to have been incurred. Unless so presented the claim shall be deemed to have been waived. Any such claim, if found correct, will be approved and the amount found due as actual extra cost will be covered by the next estimate thereafter paid under the contract. The decision of the engineer whether extra cost has been incurred and the amount thereof shall be final, subject to approval by Ellen Browning Scripps.

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16. CHANGES AT CONTRACTOR'S REQUEST.- If the contractor, on account of conditions developing during the progress of the work, finds it impracticable to comply strictly with these specifications and applies in writing for a modification of requirements or of methods of work, such change may be authorized by the engineer if not detrimental to the work and if without additional cost to Ellen Browning Scripps.

17. INSPECTION.- All materials furnished and work done under this contract will be subject to rigid inspection. The contractor shall furnish without cost to Ellen Browning Scripps complete facilities, including the necessary labor for the inspection of all material and workmanship. The engineer, or his authorized agent, shall have at all times access to all parts of the shop where such material under his inspection is being manufactured. Work or material that does not conform to the specifications, although accepted through oversight or otherwise, may be rejected at any state of the work. Whenever the contractor on installation or construction is permitted or directed to do night work or to vary the period during which work is carried on each day, he shall give the engineer due notice so that inspection may be provided. Such work shall be done without extra compensation and under regulations to be furnished in writing by the engineer.

18. CONTRACTOR'S FINANCIAL OBLIGATIONS.- The contractor shall promptly make payment to all persons supplying labor and materials in the execution of the contract, and a condition to this effect shall be incorporated in the contractor's bond.

19. EXPERIENCE.- Bidders, if required, shall present satisfactory evidence as to their responsibility and that they are fully prepared with necessary capital, machinery and material to begin the work promptly and to conduct it as required by these specifications.

20. SPECIFICATIONS AND DRAWINGS.- The contractor shall keep on the work a copy of the specifications and drawings and shall at all times give the engineer access thereto. Any drawings or plans listed in the detail specifications shall be regarded as part thereof and of the contract. Anything mentioned in these specifications and not shown on the drawings or shown on the drawings and not mentioned in these specifications shall be of like effect as though shown or mentioned in both. The Engineer will furnish from time to time such detail drawings, plans, profiles, and information as he may consider necessary for the contractor's guidance, unless otherwise provided in the contract and specifications.

21. LOCAL CONDITIONS.- Bidders shall satisfy themselves as to local conditions affecting the work, and no information derived from the maps, plans, specifications, profiles, or drawings, or from the engineer or his assistants, will relieve the contractor from any risk or from fulfilling all of the terms of his contract. The accuracy of the interpretation of the facts disclosed by borings or other preliminary investigations is not guaranteed. Each bidder or his representative should visit the site of the work and familiarize himself with local conditions.

22. DATA TO BE FURNISHED BY THE CONTRACTOR.- The contractor shall furnish the engineer reasonable facilities for obtaining such information as he may desire respecting the character of the materials and the progress and manner of the work, including all information necessary to determine its cost, such as the number of men employed, their

pay, the time during which they worked on the various classes of construction, etc.

23. RESTRICTIONS ON DISPOSITION OF PLANT, ETC.- The contractor shall not make any disposition of the plant, machinery, tools, appliances, supplies, materials, or animals used on or in connection with the work, either by sale, conveyance, or incumbrance, inconsistent with the special lien of Ellen Browning Scripps expressly created by this contract.

24. DAMAGES.- The contractor will be held responsible for and required to make good, at his own expense, all damage to person or property caused by carelessness or neglect on the part of the contractor or sub-contractor, or the agents or employees of either, during the progress of the work and until its final acceptance.

25. CHARACTER OF WORKMEN.- The contractor shall not allow his agents or employees, his sub-contractors, or any agent or employee thereof to trespass on premises or lands in the vicinity of the work. None but skilled foremen and workmen shall be employed on work requiring special qualifications, and when required by the engineer, the contractor shall discharge any person who commits trespass or is in the opinion of the engineer disorderly, dangerous, insubordinate, incompetent, or otherwise objectionable. Such discharge shall not be the basis of any claim for compensation or damages against Ellen Browning Scripps or any of her agents, servants or employees.

26. STAKING OUT WORK.- The work to be done will be staked out for the contractor who shall without cost to Ellen Browning Scripps provide such material and give such assistance as may be required by the engineer.

27. METHODS AND APPLIANCES.- The methods and appliances adopted by the contractor shall be such as will, in the opinion of the engineer, secure a satisfactory quality of work and will enable the contractor to complete the work in the time agreed upon. If at any time the methods and appliances appear inadequate, the engineer may order the contractor to improve their character or efficiency, and the contractor shall conform to such order, but failure of the engineer to order such improvement of methods or efficiency will not relieve the contractor from his obligation to perform satisfactory work and to finish it in the time agreed upon.

28. CLIMATIC CONDITIONS.- The engineer may order the contractor to suspend any work that may be subject to damage by climatic conditions. When delay is caused by an order to suspend work given on account of climatic conditions which, in the opinion of the engineer could have been reasonably foreseen, the contractor will not be entitled to any extension of time on account of such order.

29. QUANTITIES AND UNIT PRICES.- The quantities noted in the schedule of proposal are estimates for comparing bids, and no claim shall be made against Ellen Browning Scripps for excess or deficiency therein, actual or relative. Payment at the prices agreed upon will be in full for the completed work and will cover materials, supplies, labor, tools, machinery, and all other expenditures incidental to satisfactory compliance with the contract, unless otherwise specifically provided.

30. REMOVAL AND REBUILDING OF DEFECTIVE WORK.- The contractor shall remove and rebuild at his own expense any part of the work that has been improperly executed, even though it has been included in the monthly estimates. If he refuses or neglects to replace such defective work, it may be replaced by Ellen Browning Scripps at the expense of the contractor, and the contractor and his sureties shall be liable therefor.

31. PROTECTION OF WORK AND CLEANING UP.- The contractor shall be responsible for any material furnished him and for the care of all work until its completion and final acceptance, and he shall at his own expense replace damaged or lost material and repair damaged parts of the work, or the same may be done at his expense by Ellen Browning Scripps, and the contractor and his sureties shall be liable therefor. He shall take all risks from floods, storms and casualties and shall make no charge for detention from such causes. He may, however, be allowed a reasonable extension of time on account of such detention, subject to the conditions hereinbefore specified. The contractor shall remove from the vicinity of the completed work all plant, buildings, rubbish, unused material, concrete forms, etc., belonging to him or used under his direction during construction, and in the event of his failure to do so the same may be removed by Ellen Browning Scripps at the expense of the contractor, and the contractor and his sureties shall be liable therefor.

32. STREETS AND FENCES.- Streets and parks, subject to interference from the work covered by this contract shall be kept open, and the fences subject to interference shall be kept up by the contractor until the work is finished.

33. BENCH MARKS AND SURVEY STAKES.- Bench marks and survey stakes shall be preserved by the contractor, and in case of their destruction or removal by him or his employees, they will be replaced by the engineer at the contractor's expense, and the contractor and his sureties shall be liable therefor.

34. RIGHT TO CONSTRUCT.- The right to construct the works under this contract will be provided by Ellen Browning Scripps.

35. SANITATION.- The engineer may establish sanitary and police rules and regulations for all forces employed under this contract, and if the contractor fails to enforce these rules the engineer may enforce them at the expense of the contractor.

36. SUBCONTRACTORS.- The contractor shall furnish Ellen Browning Scripps the name and address of each subcontractor contracting directly with him, together with a statement showing the character and location of work, time limit, if any, and amount of money involved in each subcontract. Each subcontract shall contain a reference to the agreement between Ellen Browning Scripps and the principal contractor, and the terms of that agreement and all parts thereof shall be made a part of such subcontract, in so far as applicable to the work covered thereby. Each subcontract shall provide for its annulment at the order of the engineer if, in his opinion, the subcontractor fails to comply with the requirements of the principal contract in so far as the same may be applicable to his work, and all work or material furnished by a subcontractor shall be guaranteed by the contractor and Ellen Browning Scripps will hold the contractor responsible therefor.

37. INFRINGEMENT OF PATENTS.- The contractor shall hold and save Ellen Browning Scripps, and her agents, servants and employees, harmless from and against all and every demand, or demands, of any nature

or kind for or on account of the use of any patented invention, article, or appliances included in the material or supplies hereby agreed to be furnished under this contract, and should the contractor, his agents, servants, or employees, or any of them, be enjoined from furnishing or using any invention, article, material, or appliance supplied, or required to be supplied or used under this contract, the contractor shall promptly substitute other articles, materials, or appliances in lieu thereof, of equal efficiency, quality, finish, suitability and market value, and satisfactory in all respects to the engineer. Or in the event that the engineer elects in lieu of such substitution, to have supplied, and to retain and use any such invention, article, material or appliance, as may by this contract be required to be supplied, in that event the contractor shall pay such royalties and secure such valid licenses as may be requisite and necessary to enable Ellen Browning Scripps, or her agents, servants and employees, or any of them to use such invention, article, material, or appliance without being disturbed or in any way interfered with by any proceeding in law or equity on account thereof. Should the contractor neglect or refuse promptly to make the substitution hereinbefore required, or to pay such royalties and secure such licenses as may be necessary and requisite for the purpose aforesaid, then in that event the engineer shall have the right to make such substitution, or Ellen Browning Scripps may pay such royalties and secure such licenses and charge the cost thereof against any money due the contractor from Ellen Browning Scripps, or recover the amount thereof from him and his sureties, notwithstanding final payment under this contract may have been made. The provisions of this paragraph do not apply to articles which the contractor is required to manufacture or furnish in accordance with detail drawings furnished by Ellen Browning Scripps included in this contract. They shall apply, however, where such drawings and the specifications cover only the type of device without restriction as to details.

38. WORKMEN'S COMPENSATION AND INDEMNITY INSURANCE.- The contractor shall furnish Ellen Browning Scripps with a certificate of the insurance carrier with whom said contractor is carrying a policy of insurance, acknowledging full liability, and covering all employees connected with the work specified in this contract, and insuring said contractor against loss or liability by reason of the Workmen's Compensation Insurance and Safety Act of 1917, said certificate of the insurance carrier to bear the date of the expiration of said policy.

39. COMPLIANCE WITH LAWS.- The contractor shall conduct the work in compliance with all laws and regulations of the United States and of the State of California, ordinances of the County of San Diego and ordinances of the City of San Diego limiting or controlling the work in any manner.

40. LABORERS AND MECHANICS.- The contractor shall employ laborers and mechanics who are citizens of San Diego to the extent available and qualified in the construction of all the proposed work.

or kind for or on account of the use of any patented invention, article, or appliances included in the material or supplies hereby agreed to be furnished under this contract, and should the contractor, his agents, servants, or employees, or any of them, be enjoined from furnishing or using any invention, article, material, or appliance supplied, or required to be supplied or used under this contract, the contractor shall promptly substitute other articles, materials, or appliances in lieu thereof, of equal efficiency, quality, finish, suitability and market value, and satisfactory in all respects to the engineer. Or in the event that the engineer elects in lieu of such substitution, to have supplied, and to retain and use any such invention, article, material or appliance, as may by this contract be required to be supplied, in that event the contractor shall pay such royalties and secure such valid licenses as may be requisite and necessary to enable Ellen Browning Scripps, or her agents, servants and employees, or any of them to use such invention, article, material, or appliance without being disturbed or in any way interfered with by any proceeding in law or equity on account thereof. Should the contractor neglect or refuse promptly to make the substitution hereinbefore required, or to pay such royalties and secure such licenses as may be necessary and requisite for the purpose aforesaid, then in that event the engineer shall have the right to make such substitution, or Ellen Browning Scripps may pay such royalties and secure such licenses and charge the cost thereof against any money due the contractor from Ellen Browning Scripps, or recover the amount thereof from him and his sureties, notwithstanding final payment under this contract may have been made. The provisions of this paragraph do not apply to articles which the contractor is required to manufacture or furnish in accordance with detail drawings furnished by Ellen Browning Scripps included in this contract. They shall apply, however, where such drawings and the specifications cover only the type of device without restriction as to details.

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39. COMPLIANCE WITH LAWS.- The contractor shall conduct the work in compliance with all laws and regulations of the United States and of the State of California, ordinances of the County of San Diego and ordinances of the City of San Diego limiting or controlling the work in any manner.

40. LABORERS AND MECHANICS.- The contractor shall employ laborers and mechanics who are citizens of San Diego to the extent available and

ADDITIONAL PARAGRAPH WHICH SHOULD PROPERLY BE 40a:

Wherever in the contract or specifications the "contractor" or "Ellen Browning Scripps" is referred to, those words shall be deemed to include the successor of the contractor and the heirs or legal representative of the said Ellen Browning Scripps.

W.C.C. for E.B.S.

W.M.L. & Co. by W.M.L. by W.H.S.

DETAIL SPECIFICATIONS

Special Conditions

41. REQUIREMENT. - It is required that there be excavated and constructed in accordance with the drawings herein below listed and these specifications, a Bathing Zone Breakwater including excavation, concrete breakwater and connections and appurtenances thereto. The work is located in the Pacific Ocean opposite Casa de Manana at La Jolla, California.

42. LIST OF DRAWINGS. -

Sheet 1	of 6	Plan
" 2	" 6	Sections
" 3	" 6	Borings
" 4	" 6	Dressing Stalls
" 5	" 6	Dressing Stalls Site
" 6	" 6	Pool Excavation

43. COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK. - Work shall be commenced by the contractor within ten (10) days after the execution of the contract on behalf of Ellen Browning Scripps and shall be completed within seventy-five (75) days from date of signing contract. If Ellen Browning Scripps occupies more than fifteen days time after the opening of bids in awarding and executing contract, exclusive of the time occupied in transmitting contract and bonds to and from the contractor and in the execution of such papers by him, the contractor will be entitled to an extension of time for a period equivalent to the excess time so used by Ellen Browning Scripps.

44. FAILURE TO COMPLETE THE WORK IN THE TIME AGREED UPON. - Should the contractor fail to complete the work or any part thereof in the time agreed upon in the contract, or within such extra time as may have been allowed for delays by extensions granted as provided in the contract, a deduction of twenty-five dollars per day will be made for each and every day, including Sundays and holidays, that such work remains uncompleted after the date required for completion. The said amounts

are hereby agreed upon as liquidated damages for the loss to Ellen Browning Scripps on account of the expense due to the employment of engineers, inspectors, and other employees after the expiration of the time for completion, and will be deducted from any money due the contractor under his contract, and the contractor and his sureties shall be liable for any excess.

45. PROGRESS ESTIMATES AND PAYMENTS.- At the end of each calendar month the engineer will make an estimate of the amount earned to that date, under the terms of the contract, (1) for materials delivered on the ground, (2) for partially completed work, and (3) for completed work, classified and computed on the basis of the items and unit prices named in the contract. To the estimate made as above set forth will be added the amounts earned for extra work to the date of the progress estimate. From the total thus computed a deduction of fifteen per cent will be made, and from the remainder a further deduction will be made of all amounts due to Ellen Browning Scripps from the contractor for services rendered and any other amounts that may be due to Ellen Browning Scripps as damages for delays or otherwise under the terms of the contract. From the balance thus determined will be deducted the amount of all previous payments and the remainder will be paid to the contractor upon the approval of the accounts. The fifteen per cent deducted as above set forth will become due and payable thirty-five days after the completion of the work to the satisfaction of the engineer and its acceptance by Ellen Browning Scripps. In case of the suspension of the contract, the said fifteen per cent shall be and become the sole and absolute property of Ellen Browning Scripps to the extent necessary to repay Ellen Browning Scripps any excess in the cost of the work above the contract price. When the terms of the contract shall have been fully complied with to the satisfaction of the engineer and when a

release of all claims against Ellen Browning Scripps under, or by virtue of the contract, shall have been executed by the contractor, final payment will be made of any balance due, including the percentage withheld as above stated, or such portion thereof as may be due the contractor.

EXCAVATION

UNDER THIS HEAD ARE INCLUDED ALL EXCAVATION INVOLVED AND INCLUDED IN THE CONSTRUCTION OF BATHING ZONE BREAKWATER.

46. EXCAVATION.- The price bid for excavation shall include the cost of all power and appliances, of all labor and of all material for excavation, including blasting, coffer dams and other temporary structures, all pumping, bailing, draining and all other work necessary to maintain the excavation in good order during construction and to protect the materials of construction involved, and the work under construction until its completion. Payment for excavation and the incidentals thereto mentioned above will be made at prices bid therefor, all measurements being made in excavation to the neat lines shown on the drawings or as such neat lines may have been changed by the engineer. Excavation shall be made for the cutoff wall, the foundation of the breakwater, and bathing zone and dressing stalls as shown on the drawings or as directed by the engineer. The contractor will be permitted to use the boulders excavated from the bathing zone area for rip-rap to protect his work on the ocean side. The natural conditions surrounding the work shall not be disturbed. Should the contractor so elect, he may take boulders from the bathing zone area in excess of that required in the contract with the express understanding that such boulders in excess of the requirements of the contract will not be paid for. Material excavated for the foundation of the breakwater and the bathing zone area shall be deposited on the ocean side of the structure or as directed by the engineer. The contractor shall not remove sand from the bathing zone area.

47. CLASSIFICATION.- All excavation shall be considered as unclassified. No payment shall be made for material coming from outside of lines and grades indicated on the drawings or established by the engineer in the field. It is desired that the contractor or his representative be present during the measurement of material excavated. On written request

of the contractor, made by him within ten days after the receipt of any monthly estimate, a statement of the quantities between successive stations included in said estimates will be furnished him within ten days after the receipt of such request. This statement will be considered as satisfactory to the contractor unless he files with the engineer, in writing, specific objections thereto, with reasons therefor, within ten days after receipt of said statement by the contractor or his representative on the work. Failure to file such written objections, with reasons therefor, within said ten days, shall be considered a waiver of all claims based on alleged erroneous estimates of quantities for the work covered by such statement.

48. BLASTING.- Any blasting which in the opinion of the engineer may result in injury to the work will not be permitted and any damage done to the work by blasting shall be repaired, to the satisfaction of the engineer, by the contractor at his own expense. Whenever, in the opinion of the engineer, blasting is liable to injure the foundation rock, the required excavation shall be accomplished by drilling, plug and feathers, wedging and gadding, or other methods approved by the engineer.

CONCRETE STRUCTURE

UNDER THIS HEAD IS INCLUDED ALL CONCRETE WORK INVOLVED AND INCLUDED IN THE CONSTRUCTION OF BATHING ZONE BREAKWATER.

49. CONCRETE BREAKWATER.- The contractor shall construct the concrete breakwater to the lines and dimensions as shown on the drawings or as directed by the engineer.

50. ANCHOR HOLES.- The contractor shall drill anchor holes of a minimum diameter of seven inches and as shown on the drawings or as directed by the engineer. Payment will be made at the price bid which shall include all costs of providing holes of the required dimensions.

51. CONCRETE COMPOSITION.- Concrete shall be composed of cement, sand and broken rock or clean gravel, graduated to size as hereinafter provided, well mixed and brought to a proper consistency by the addition of water. Ordinarily about one part by volume, measured loose, of cement shall be used with about $2\frac{1}{2}$ parts of sand and about 5 parts of broken stone or gravel for the concrete of the breakwater, and about one part by volume, measured loose, of cement shall be used with about 2 parts of sand and about 4 parts of broken stone or gravel for the concrete for the dressing stalls and steps. These proportions may be modified by the engineer for concrete in any portion of the work as the character of the requirements and the nature of the materials used may render it desirable, and the contractor shall not be entitled to any extra compensation by reason of such modifications.

52. CEMENT.- All cement used on this work shall be of standard Portland cement which has been successfully used in similar construction for not less than three years. It must conform to the Standard Specifications and tests for Portland Cement, Serial Designation: 9-26, of the American Society for Testing Materials, and shall be delivered in suitable sacks or barrels with the brand and name of the manufacturer plainly marked thereon. All cement proposed for use will be tested by the engineer and the contractor shall make ample time allowance for such testing in planning deliveries. Any cement failing to

meet the requirements of the tests provided by these specifications or which has hardened due to exposure or other causes, or which has been otherwise damaged from any cause, will be rejected and must be immediately removed from the site of the work. One sack of cement shall be considered equivalent to one cubic foot by volume. The contractor shall furnish and maintain at the work suitable weatherproof warehousing for storing cement and diatomaceous earth so that no deterioration or damage shall occur thereto and the cement shall be so piled as to render it readily accessible for sampling and testing. Cement in place in concrete will be paid for in accordance with the price bid per barrel which bid shall include hauling to the work and all handling and protection. Cement sacks may be retained by the contractor.

53. DIATOMACEOUS EARTH.- Diatomaceous earth shall be used in the concrete to secure increased uniformity, workability, or density. Diatomaceous earth to the amount of eight per cent by volume of the cement shall be thoroughly mixed with the concrete. The diatomaceous earth used shall be of a quality approved by the engineer. The payment for diatomaceous earth will be included in the unit price bid for the concrete.

54. STEEL RAILS AND REINFORCEMENT.- 60-pound "relay rails" will be furnished by Ellen Browning Scripps to the contractor at the bluff above the site of the work. The rails shall be accurately bent as indicated on the drawing or as directed by the engineer and shall be securely fastened together by bolts or clamp approved by the engineer. After the rails are set and firmly held in final place in the rock the spaces between the rails and the inside of the holes shall be filled with a grout composed of one part by volume, measured loose, of cement with two parts of sand and about four parts of broken stone or gravel of a size to pass a $\frac{3}{8}$ inch ring. Care shall be exercised to have the holes clean and free from water as possible. Where necessary to place grout under water it shall be placed according to the specifications for Tremie Concrete.

The price for grouting the rails to the rock shall be included in the unit price of rails. Reinforcing steel will be furnished by Ellen Brown- ing Scripps to the contractor at the bluff above the site of the work. The contractor shall bend and place this reinforcing steel in accordance with the drawings or as instructed by the engineer. The contractor shall be paid for bending and placing this steel according to the unit price of Reinforcing Steel.

55. SAND.- Sand used for concrete shall produce a 1:3 mortar having a strength about equal to the strength of 1:3 Mortar made with Standard Ottawa sand. The sand may be from natural deposits or may be made by crush- ing suitable rock. The sand particles shall be hard, dense, strong, durable rock fragments and shall be screened and shall pass a $3/8$ inch ring. The sand must be free from organic matter and shall not contain more than 5 per cent of clayey or other objectionable non-organic matter. Sand shall be so graded in size that in no case in the laboratory test will more than about 6 per cent pass a No. 100 screen.

56. BROKEN ROCK OR GRAVEL.- The broken rock or gravel for concrete must be hard, dense, durable rock fragments or pebbles that will pass thru a 3-inch mesh screen and will be rejected by a $1/4$ -inch mesh screen and grad- ed to the satisfaction of the engineer. The sizes shall be as follows:

- (1) Rock passing a three inch ring and retained on a one and one-half inch ring.
- (2) Rock passing a one and one-half inch ring and retained on a three quarters inch ring.
- (3) Rock passing a three quarters inch ring and retained on a three eighths inch ring.
- (4) Rock passing a three eighths inch ring.

All of the foregoing sized rock shall be so graded in size that in no case, by laboratory test, will more than ten per cent pass the smaller opening mentioned. The engineer will, from time to time, determine the exact pro- portions of each of the various sizes for assembly in a batch to be mixed into concrete, the object being to secure the densest practicable mixture.

57. WATER.- The water used in mixing concrete must be reasonably clean and free from objectionable quantities of organic matter, alkali, salts and other impurities. Suitable means shall be provided and employed for controlling and measuring accurately, the water in each batch of concrete mixture.

58. MIXING.- Cement, sand and broken rock or gravel shall be so mixed and the quantities of water added shall be such as to produce a homogeneous mass of uniform consistency. Dirt and other foreign substances shall be carefully excluded. Concrete shall be mixed by an approved machine of the "batch type," which admits of the accurate measuring of the materials. The use of a "continuous" mixer will not be permitted. All the materials to be mixed shall be separately measured in type and size and in boxes of proper size to secure the desired proportions, or by some method which will secure exact results. Measuring devices which depend for their operation upon the flow of material from hoppers or other approximate methods will not be allowed. The entire batch after being assembled in the mixer shall remain in the mixer and be mixed for not less than two minutes and longer if necessary to secure a satisfactory mix. The machine and its operation shall be subject to the approval of the engineer. In general, only enough water shall be used in mixing to give the concrete the consistency ordinarily designated as "workable." Concrete containing a minimum amount of water, ordinarily designated as "dry" concrete will be permitted only where the nature of the work renders the use of "workable" concrete impracticable. Care shall be taken that a uniform mixture of the concrete is at all times maintained in the handling of the concrete. The contractor shall have a responsible foreman continuously in charge of each mixing operation, who shall see that all instructions issued by the engineer as to the method of mixing, handling, and placing concrete, are carried out.

59. PLACING.- Concrete shall be placed in the work before the cement takes its initial set. No concrete shall be placed in water except by permission of the engineer and the method of its depositing shall be subject to his approval and in accordance with specifications for tremie concrete. Foundation surfaces upon which concrete is to be placed must be scrupulously clean. When the placing of concrete is to be interrupted long enough for the concrete to take its final set, the working face shall be given a shape, by the use of forms or other means, at the option of the engineer, that will insure proper union with subsequent work. The placing of concrete between two adjacent contraction joints shall be continuous over the full area of the section. Layers of a thickness greater than five feet will not be permitted to be poured in any one day. Upon completing the pour the surface shall be stepped in six inch vertical steps with the highest step on the "pool side". There shall be one step for the minimum section and three such steps for all sections greater than the minimum. The steps shall run about parallel to the axis of the breakwater. The cutoff will be bulkheaded vertically with suitable vertical keys between pours which may be at any point in the length of the cutoff. The pouring of the cutoff shall be complete to a level with the foundation between vertical bulkheads. All concrete surfaces upon which, or against which concrete is to be placed, and to which the new concrete is to adhere shall be roughened, thoroughly cleaned, and wet before concrete is deposited. "Dry" concrete shall be deposited in layers not exceeding six inches in thickness, each of which shall be tamped until water appears on the surface. "Workable" concrete shall be poured and immediately spaded to place with suitable tamping bars, shovels, or forked tools until it completely fills the forms, close snugly against all surfaces and is in perfect and complete contact with any steel used for reinforcement. Where smooth surfaces are required, a suitable tool shall be worked up and down, next to the form until the

coarser material is forced back and a mortar layer is brought next to the form. Both placing and tamping shall be done with a special view to obtaining the densest concrete and smoothest surfaces practicable. No concrete shall be placed except in the presence of a duly authorized inspector.

60. TREMIE CONCRETE.- For the portions of the breakwater below mean low tide the concrete may be placed in water. The concrete so deposited shall be carefully placed in the space in which it is to remain, in a compact mass by means of a tremie, that will prevent the concrete falling through the water. Concrete shall not be disturbed after being so deposited. No concrete shall be placed in running water. The operation of the tremie shall be such as to insure the lower end being well into the mass of the concrete.

61. FINISHING.- The surface of concrete finished against forms must be smooth, free from projections and thoroughly filled with mortar. Immediately upon the removal of forms all voids shall be neatly filled with cement mortar, irregularities in exposed surfaces shall be removed and minor imperfections of finish shall be smoothed to the satisfaction of the engineer. Exposed surfaces of concrete not finished against forms such as horizontal or sloping surfaces, shall be brought to a uniform surface and worked with suitable tools to a smooth mortar finish. All sharp angles of the steps and coping and where required shall be rounded or beveled by the use of moulding strips or suitable moulding or finishing tools.

62. PROTECTION.- The contractor shall protect all concrete against injury. Exposed surfaces of new concrete shall be protected from the direct rays of the sun and shall be kept damp for at least two weeks after the concrete has been placed. All damage to concrete shall be repaired in a manner satisfactory to the engineer, and shall be included in price bid per cubic yard of concrete in place.

63. FORMS.- Forms to confine the concrete and shape it to the required lines shall be used wherever necessary. Where the character of the material cut into to receive a concrete structure is such that it can be trimmed to the prescribed lines, the use of forms will not be required. The forms shall be of sufficient strength and rigidity to hold the concrete and to withstand the necessary pressure and tamping without deflection from the prescribed lines. For concrete surfaces that will be exposed to view and for all other concrete surfaces that are to be finished smooth, the lagging of forms must be surfaced, and sized or matched and oiled; provided that smooth metal forms may be used if desired. All forms shall be removed but not until the engineer gives permission. Forms may be used repeatedly provided they are maintained in serviceable condition and thoroughly cleaned and repainted with lubricating oil before being reused. The cost of all forms, their use and removal from the work shall be included in the price bid for concrete in place.

64. CONTRACTION JOINTS.- Vertical contraction joints shall be constructed in the positions as indicated on the plans. The contraction joints will be at right angles to the axis of the tangent positions of the breakwater and radial to the axis of the curved portions of the breakwater. Vertical keys shall be built in the joints as shown on the drawings. The entire face of each vertical joint in the breakwater shall be painted with one thin coat of water-gas tar paint, or other material as directed by the engineer, and allowed to dry before the adjacent concrete is placed against it. The horizontal steel rails shall run through the contraction joints at least five feet and shall lap at least eight feet at all splices.

65. PAYMENT FOR CONCRETE STRUCTURE.- Measurement will be made to the neat lines shown on the drawings or as directed by the engineer and payment will be made at the unit prices bid, which bid shall include all costs to the contractor including diatomaceous earth and water, except

for cement and bending and placing steel rails and bending and placing reinforcing steel which will all be paid for as separate items.

APPURTENANCES

66. APPURTENANCES.- The contractor shall, at unit prices bid, furnish and install ready for operation all appurtenances as shown on drawings or called for in the specifications.

67. PIPE RAILING.- Pipe railing shall be furnished and erected by the contractor on the crest of the breakwater as shown on the drawings. The pipe railing shall be composed of new standard galvanized two inch pipe. The posts shall be spaced as shown and shall be set into the crest coping twelve inches. The posts shall be made up of two pieces of two inch pipe by screwing the vertical pipe into a cross and tee of railing fitting design. The crosses and tees shall have the horizontal openings beamed and the horizontal runs of pipe shall be passed thru the post fittings and made continuous by standard screw couplings. The horizontal rails shall be curved on the curved portion of the breakwater to parallel the curve of the structure. The pipe railing shall be returned across the outer end of the breakwater. The entire pipe railing shall be painted with two coats of Hermastic paint or equivalent in the opinion of the engineer.

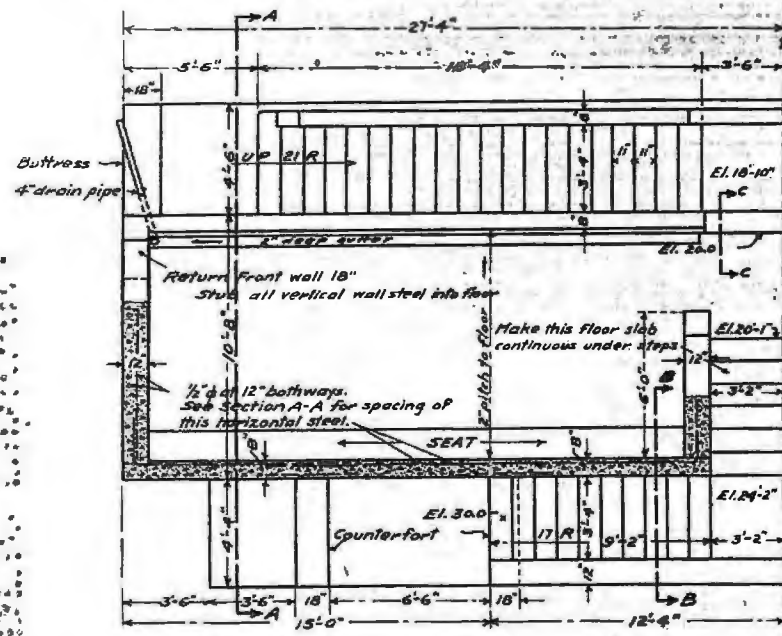
68. PAGE HI-WAY GUARD.- To the outside of the pipe railing, on the ocean side and outer end of the breakwater, shall be furnished and attached by the contractor a two foot strip of No. 6 gauge Armco iron Page Hi-Way Guard. The guard shall be pulled tight and fastened to the posts at the top and bottom of the guard by a loop of No. 6 iron wire. The guard shall be wired at two equally spaced points, between posts, to the lower horizontal pipe railing member with loops of No. 6 iron wire. The separate lengths of guard shall be lapped at least six inches, opposite post only, and securely wired together with No. 6 wire. The entire Hi-way Guard shall be painted with two coats of Hermastic paint or the equivalent in the opinion of the engineer.

69. "U" BOLTS, COVER PLATES AND LADDER STEPS.- Three "U" bolts thirty inches long by six inches wide of 1-1/4 inch round wrought iron shall be furnished and set in the outer end of the breakwater by the contractor as directed by the engineer.

Four cover plates 2' - 1-3/4" x 5' - 1-3/4" of 3/8" steel shall be furnished and set in place by the contractor over the gate and gate moist recesses. The cover plates shall each have a 3/4" x 3" slot cut thru the plate running across the width of the plate centered on its longitudinal center line.

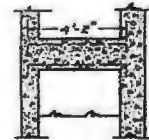
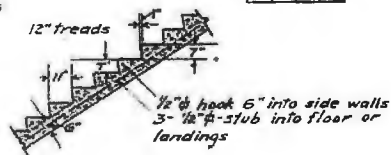
Twelve ladder steps of one inch round wrought iron shall be furnished and set in the pilasters by the contractor. The ladder steps or rungs shall project five inches from the concrete and be bent as indicated on the drawings. They shall be provided with three inch hooked ends set into the concrete nine inches measured horizontally.

"U" bolts, cover plates and ladder steps shall be given a shop coat of red lead and linseed oil paint and a second coat of Hermastic paint, or its equivalent in the opinion of the engineer, after being placed in the work.

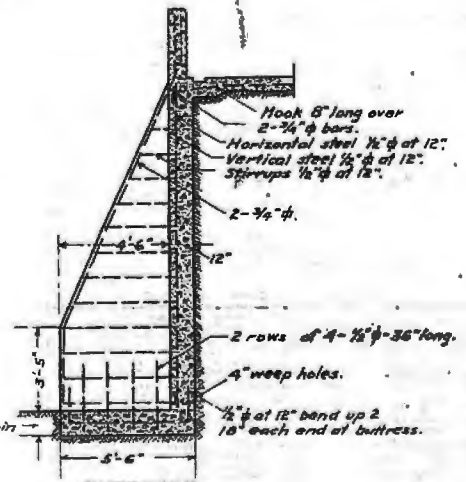


HALF PLAN
Scale in feet
0 1 2 3 4

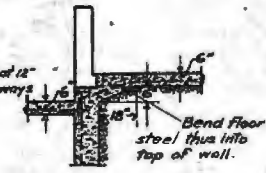
NOTE: All reinforcing steel to be at least inches from the surface of concrete.
15' parapets of site see Sheet 5 of 5.
The structure is symmetrical about the L.
All elevations refer to U.S.G.S. Datum.
Lap all reinforcing steel 20 diameters.
This drawing supplements "Dressing Stalls" sheet 4 of 8 by elimination of stalls and shortening structure.



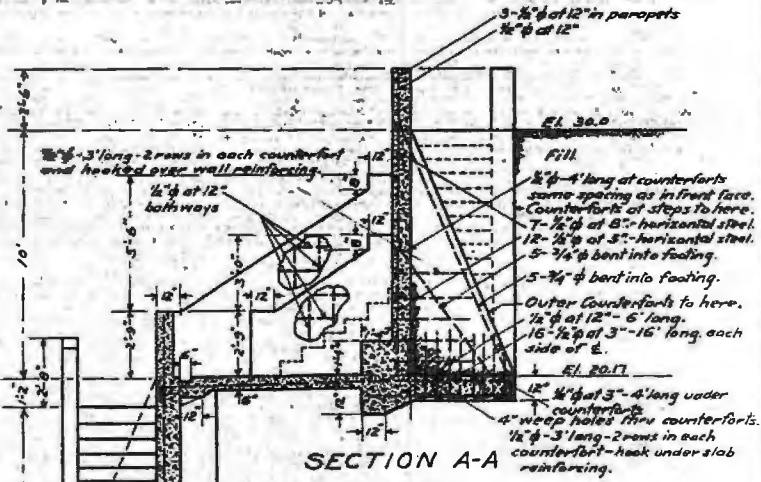
TYPICAL STEP REINFORCING
Scale in feet
0 1 2 3 4



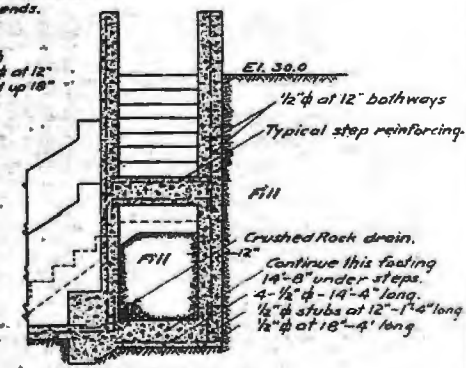
BUTTRESS
Scale in feet
0 1 2 3 4



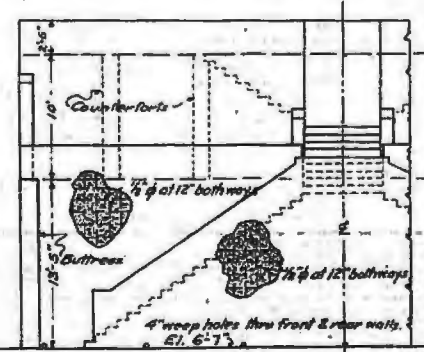
SECTION C-C
Scale in feet
0 1 2 3 4



SECTION A-A
Scale in feet
0 1 2 3 4



SECTION B-B
Scale in feet
0 1 2 3 4



ELEVATION
Scale in feet
0 1 2 3 4

ELLEN BROWNING SCRIPPS
LA JOLLA - CALIFORNIA
BATHING ZONE BREAKWATER
STAIRWAY

Scale in feet
as shown
January 12, 1931.

Engineer
Supplier

Sheet No. 8

Drawn by H.W.
Traced by H.W.
Checked by J.W.

STEPS TO BREAKWATER

60°45'

R=165.0 L=42.0 Δ=14°35'

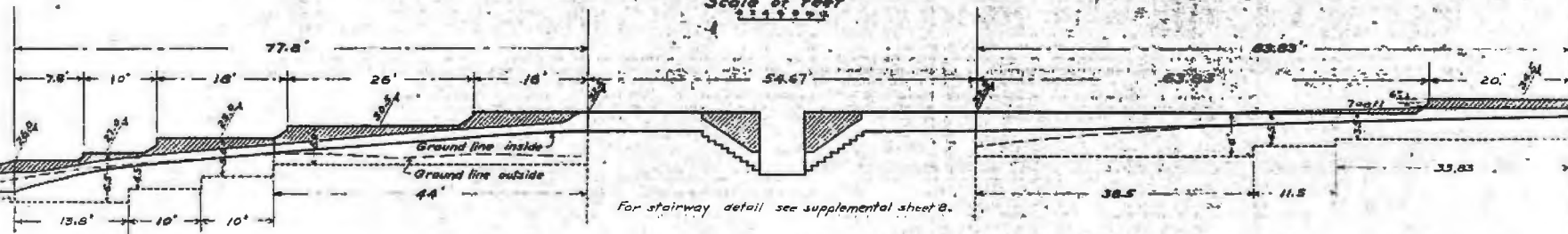
STAIRWAY

R=165.0 L=32.0 Δ=11°07'

R=450 L=51.83

PLAN OF PARAPET WALL

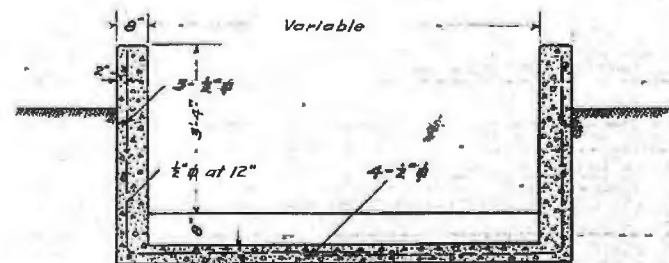
Scale of feet



PROFILE OF PARAPET WALL

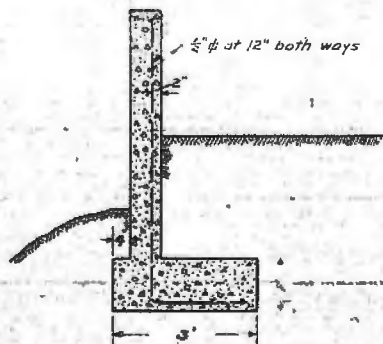
Scale of feet

NOTE: Matched area of wall shows modification made under extra work order 6.



TYPICAL SECTION OF STEPS

Scale of feet



TYPICAL SECTION OF WALL

Scale of feet

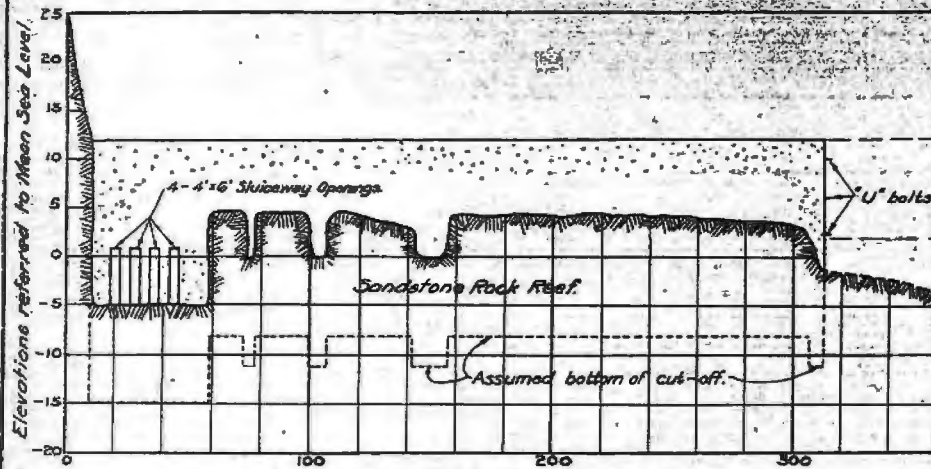
ELLEN BROWNING SCRIPPS
LA JOLLA - CALIFORNIA
BATHING ZONE BREAKWATER
PARAPET WALL

Scale of feet
as shown
March 9, 1931.

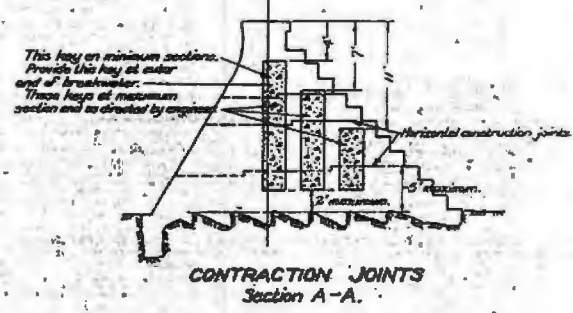
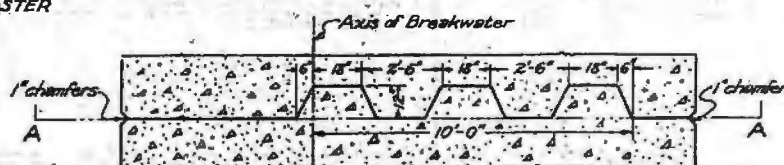
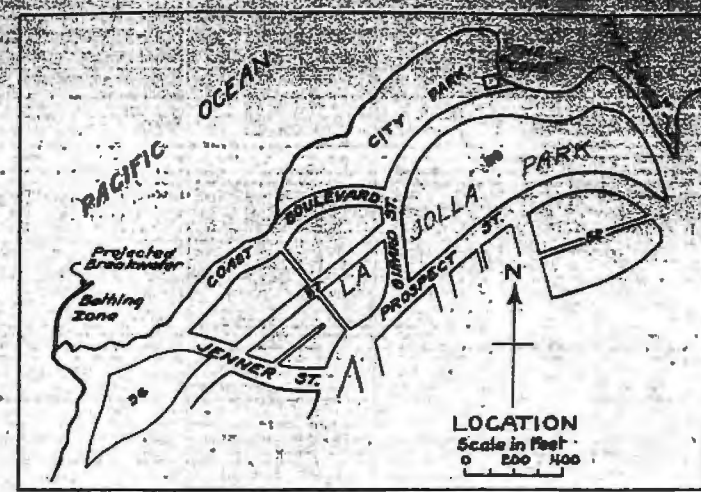
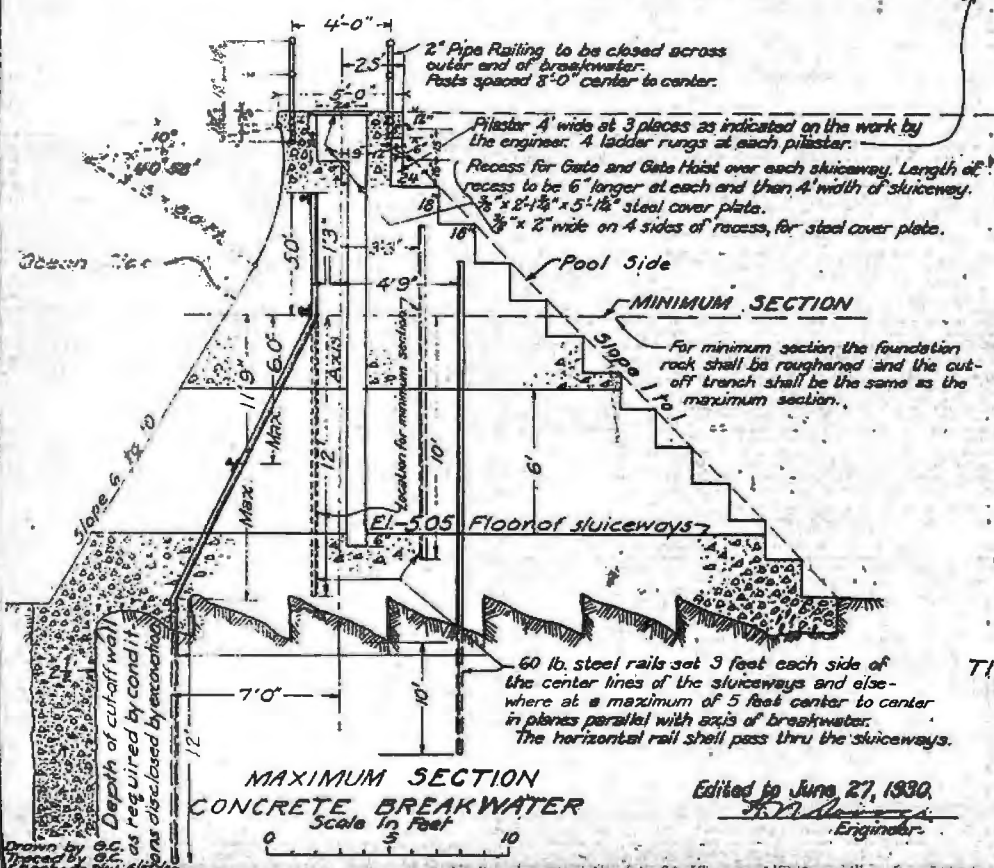
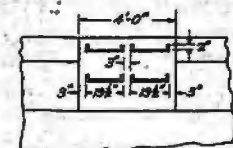
Engineer

Supplemental Sheet No 9

Drawn by H.W.
Traced by H.W.
Checked by M.B.



PROFILE ALONG CENTER LINE OF BREAKWATER



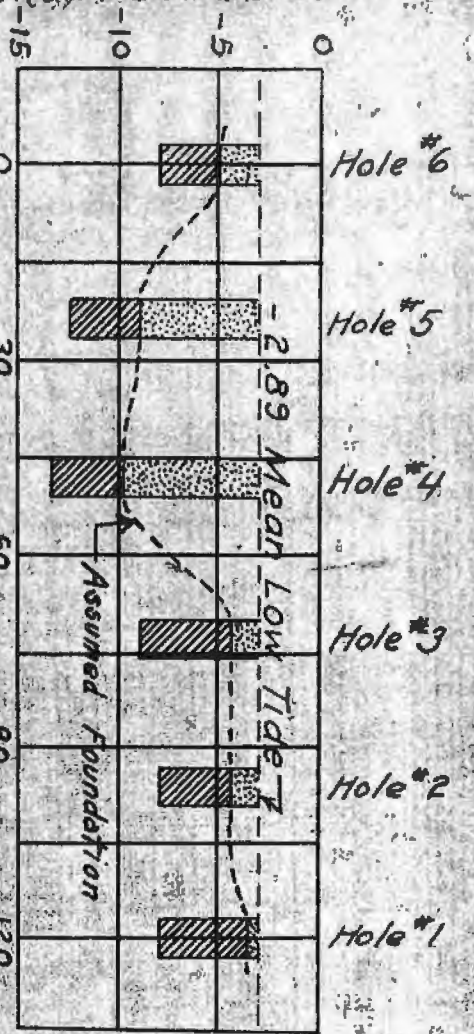
ELLEN B. SCRIPPS
LA JOLLA - CALIFORNIA
BATHING ZONE BREAKWATER
SECTIONS
Scale as Shown
MAR.-1923.
H.B. Scripps
Engineer

Edited to June 27, 1930.
H.B. Scripps
Engineer

Edited to May 28, 1930.
H.B. Scripps
Engineer

Drawn by W.B.S.
Traced by E.L.B. 4-18-30.
Checked by J.B.F. 5-1-30.

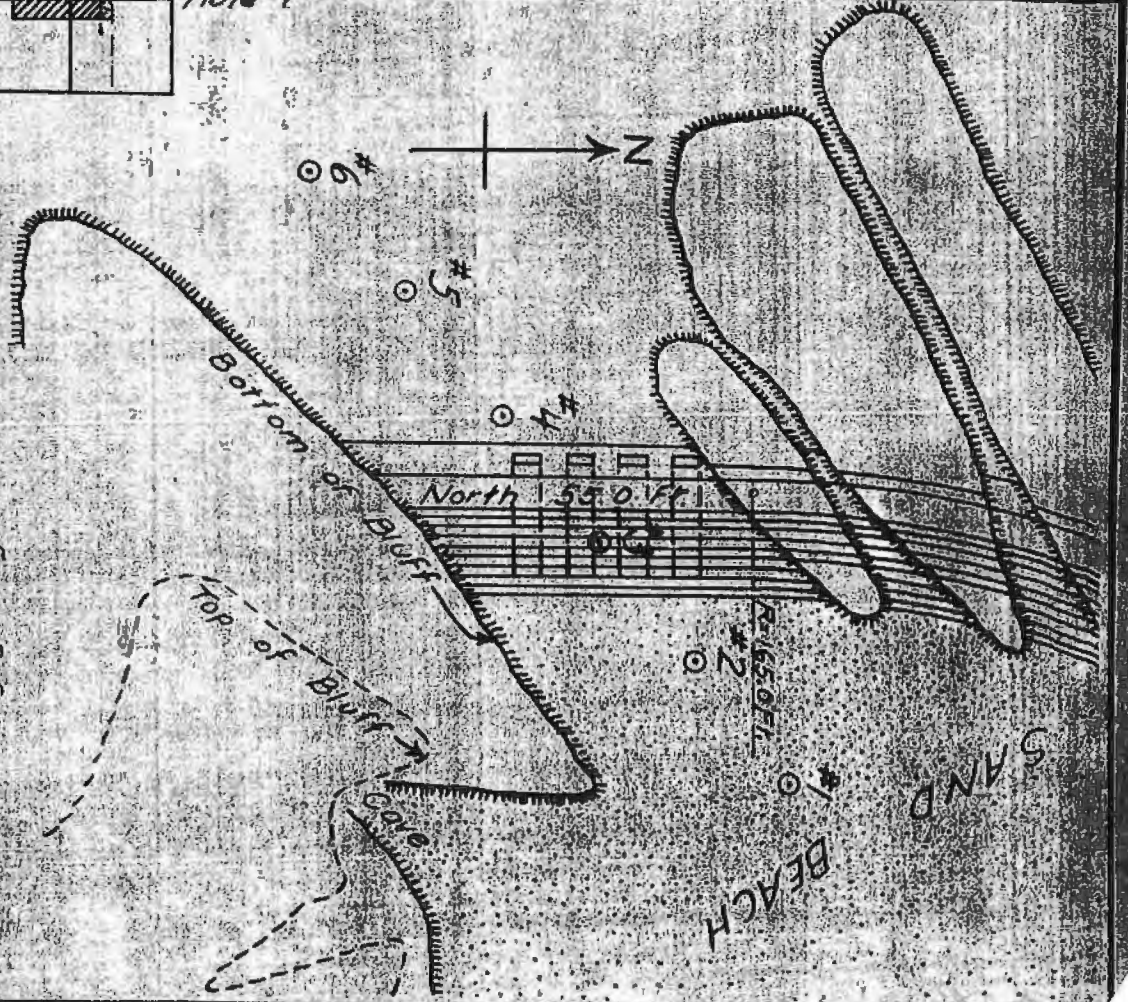
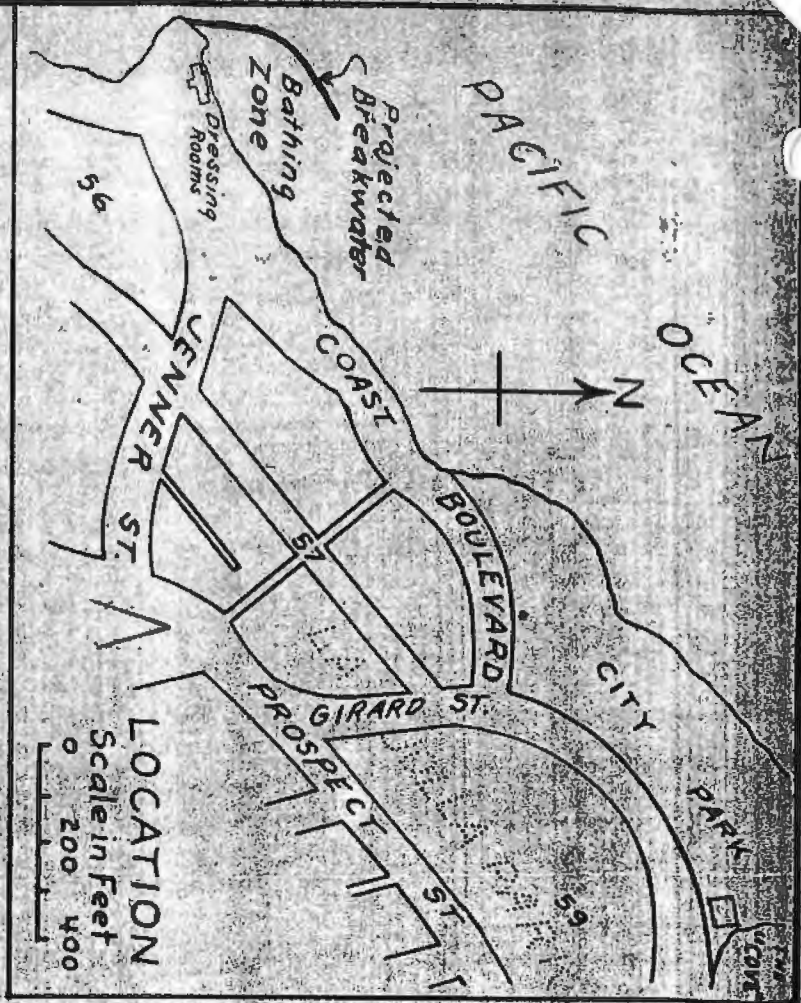
Elevations referred to Mean Sea Level.



Horizontal Distance in Feet

LEGEND:
Sand
Sandstone

LOG OF BORINGS



Edited to June 27, 1930

W. B. Stevens

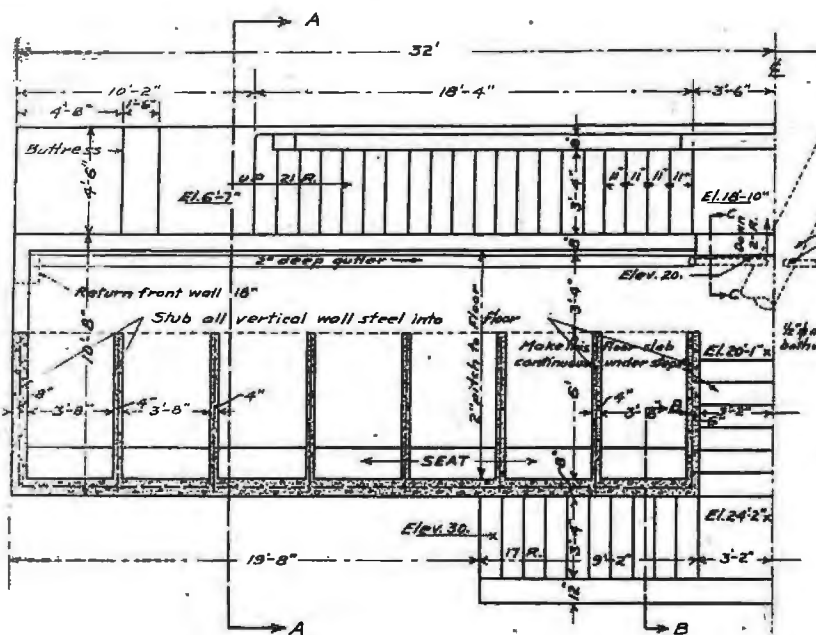
Engineer

FEBRUARY 1923

W. B. Stevens

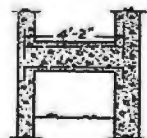
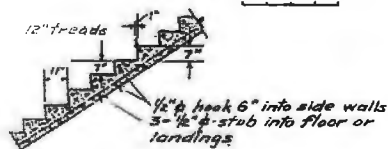
EILEEN B. GERIERS
LA JOLLA - CALIFORNIA
BATHING ZONE BREAKWATER
BORINGS

Scale of feet
0 15 30

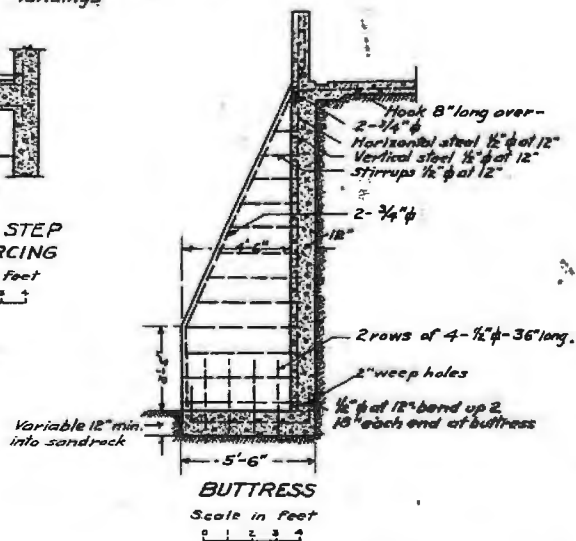


HALF PLAN
Scale in feet
0 1 2 3 4

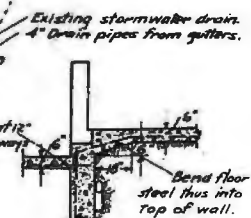
NOTE: All reinforcing steel to be at least 2 inches from the surface of concrete where possible. For topography, of site see Sheet 5 of 5. The structure is symmetrical about the E. All elevations refer to U.S.G.S. Datum. Lap all reinforcing steel 20 diameters.



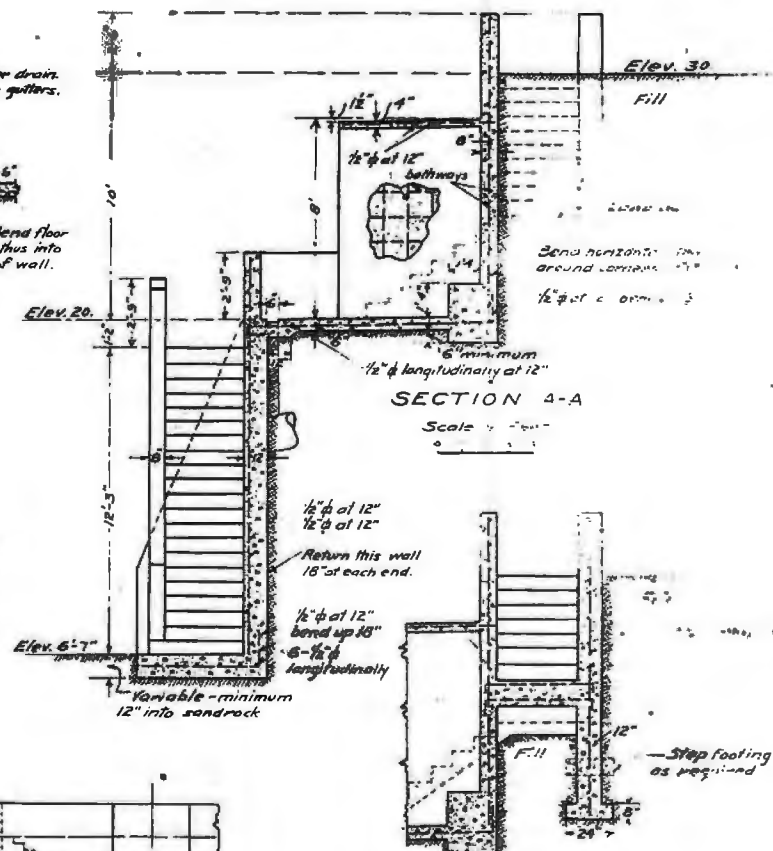
**TYPICAL STEP
REINFORCING**
Scale in feet
0 1 2 3 4



BUTTRESS
Scale in feet
0 1 2 3 4



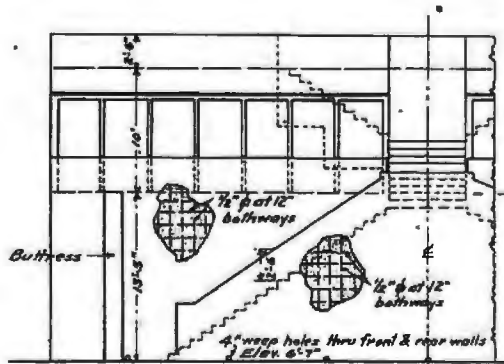
SECTION C-C Elev. 20
Scale in feet
0 1 2 3 4



SECTION B-B


Scale in feet

0 1 2 3 4



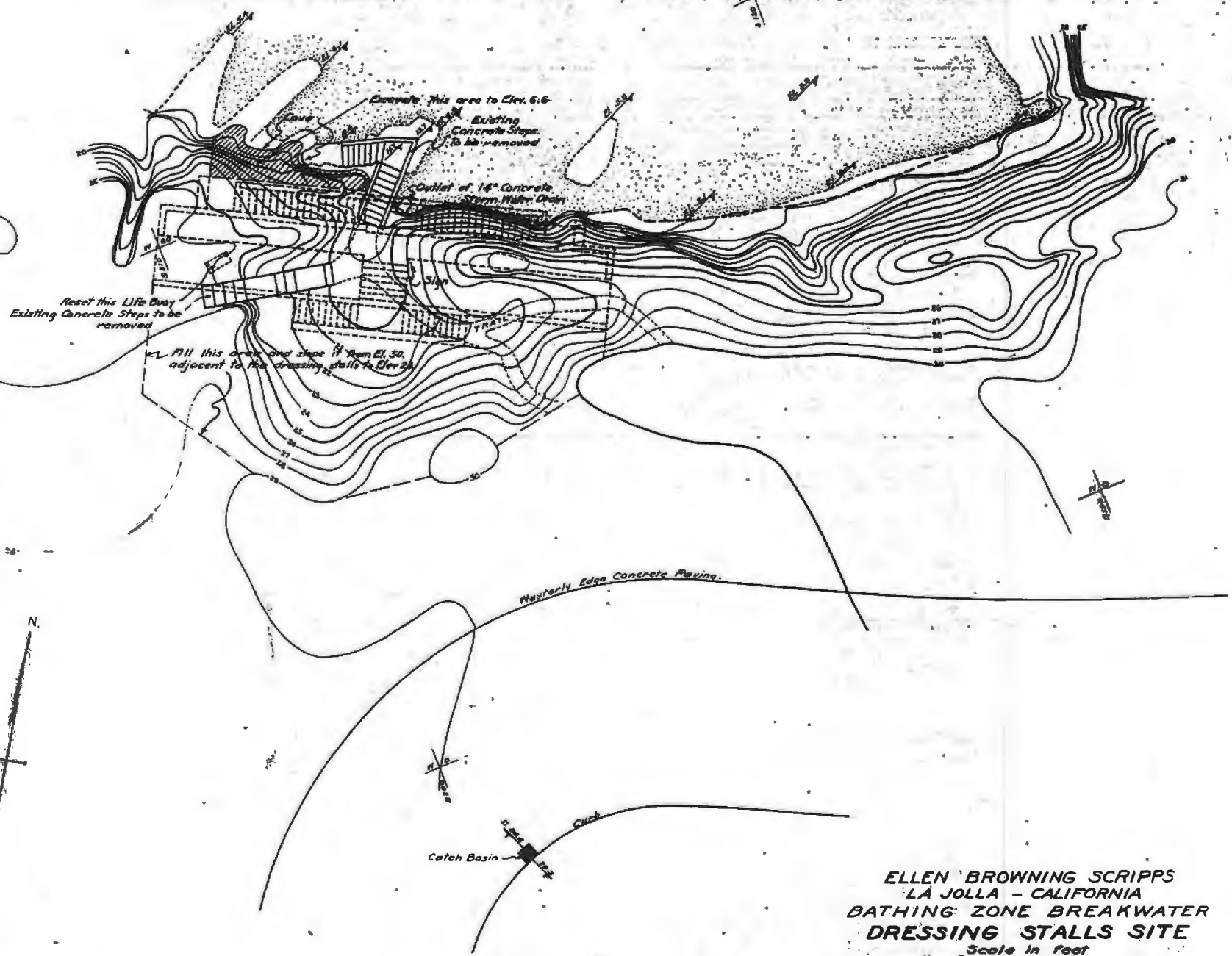
ELEVATION
Scale in feet
0 1 2 3 4 5 6 7 8

ELLEN BROWNING SCRIPPS
LA JOLLA - CALIFORNIA
BATHING ZONE BREAKWATER
DRESSING STALLS

Scale in feet
as shown
July 25 1930

Engineer

Ans. Temple Johnson
Architect

Drawn by H.W.
Traced by H.W.
Checked by ~~HW~~



ELLEN BROWNING SCRIPPS
LA JOLLA - CALIFORNIA
BATHING ZONE BREAKWATER
DRESSING STALLS SITE

Scale in feet
July 15, 1930.
H.N. Meyer
Engineer

Drawn by H.W.
Traced by H.W. 11/2/30
Checked by H.W.

All elevations to U.S.S. Datum.

Sheet 5 of 6.

Drawn by E.C.
Checked by E.C.
Engineered by E.C.

Edited to July 15, 1930.
H.M. Davis
Engineer

Note: All rock pinnacles and loose rock
to be removed from bathing zone.

Block 56, La Jolla Park

H.M. Davis
Engineer

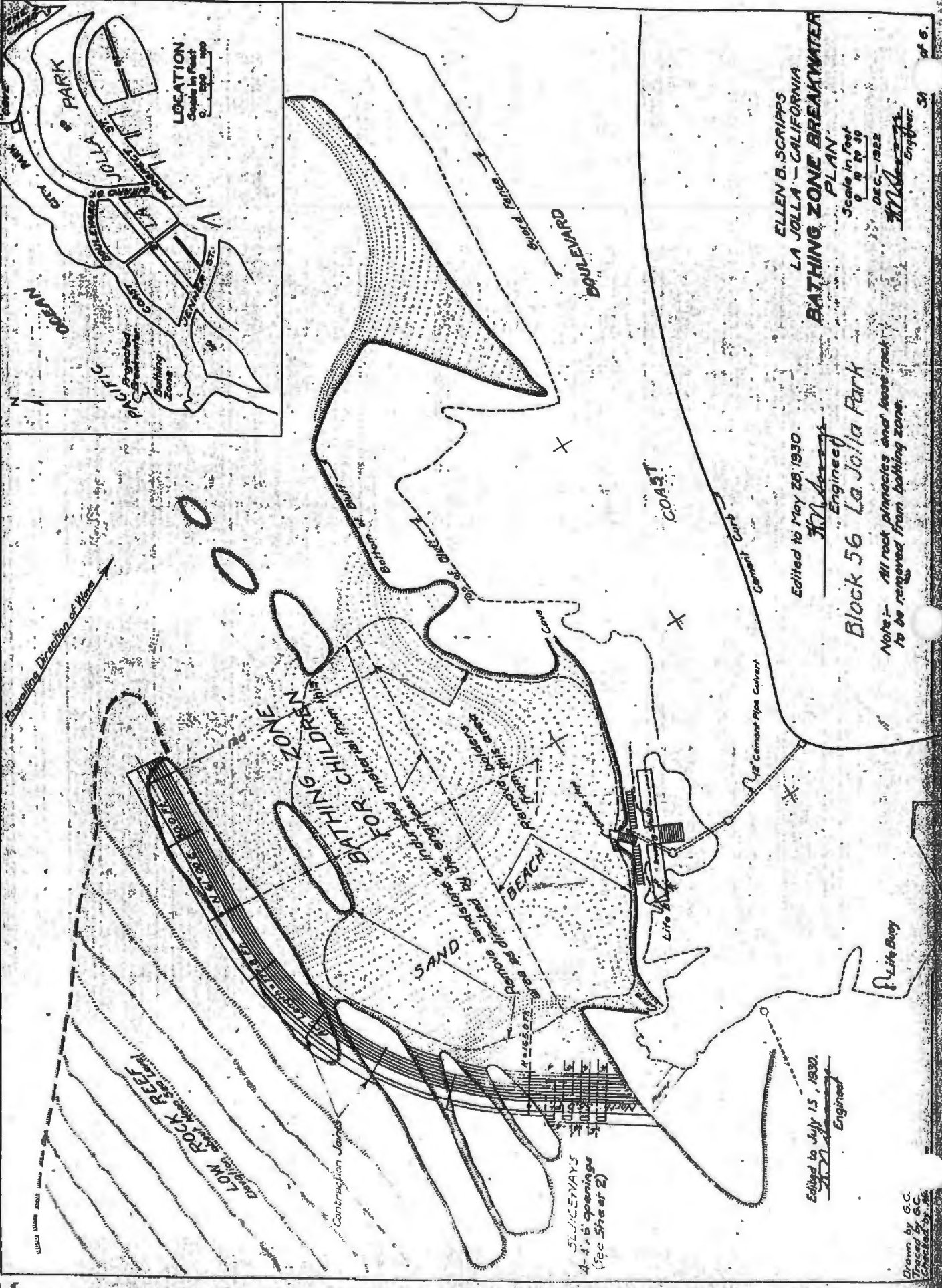
Edited to May 28, 1930.

BATHING ZONE BREAKWATER PLAN

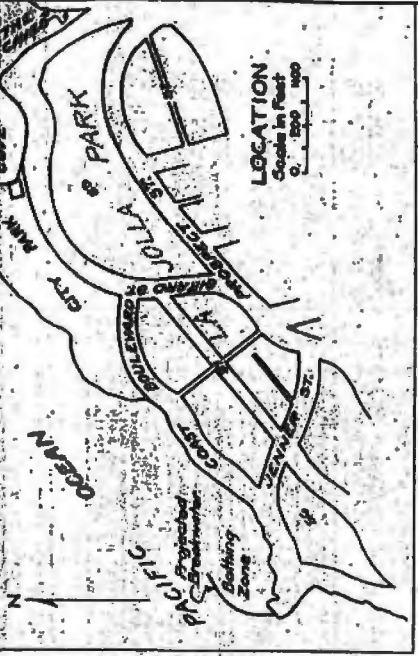
Scale in feet
0 10 20 30

DEC - 1922

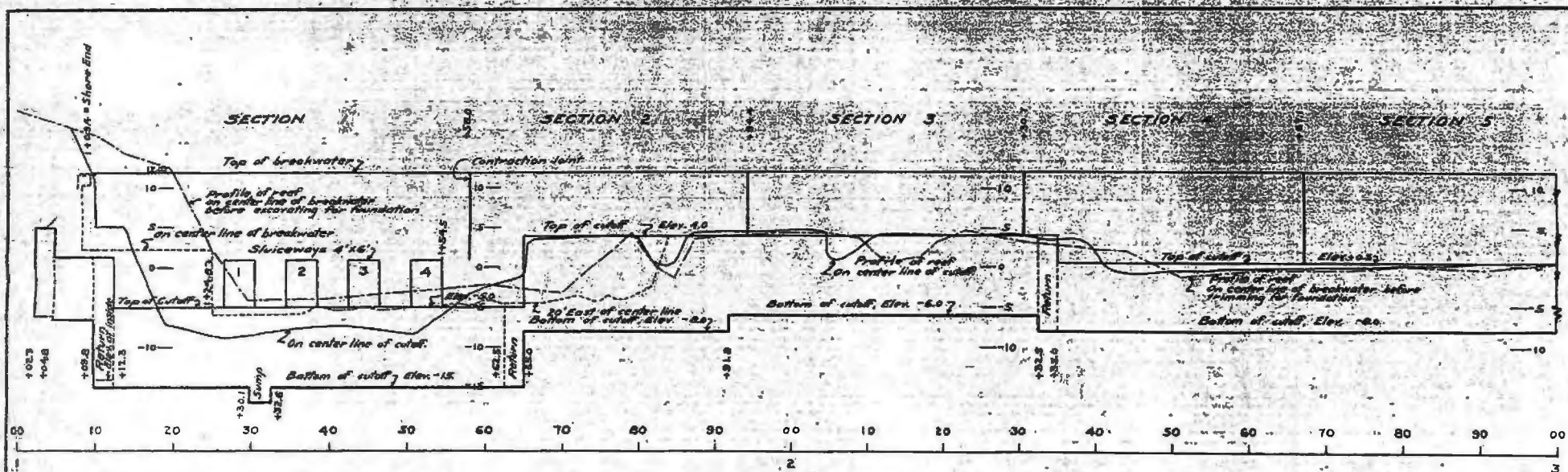
H.M. Davis
Engineer



LOCATION
Scale in feet
0 100 200

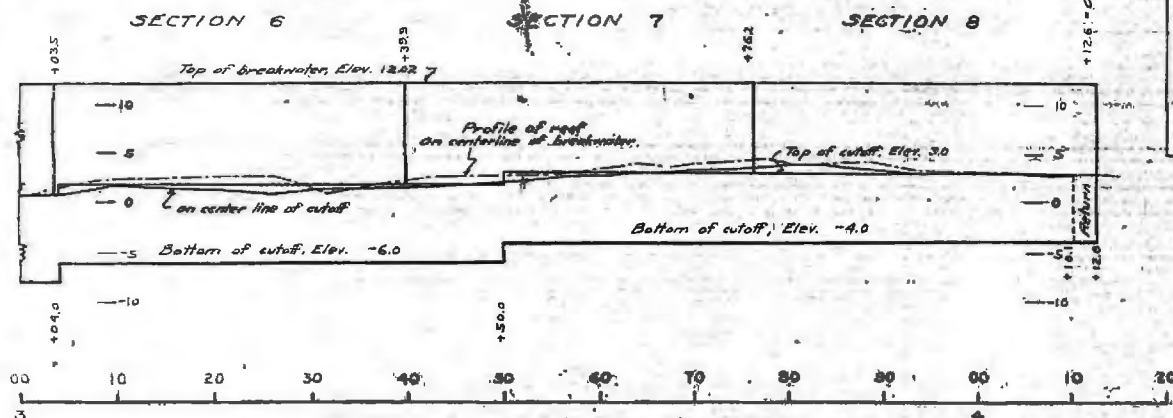


C-15



Scale of feet
Horizontal and Vertical
0 2 4 6 8 10

CUTOFF WALL						
Station	Station	Length in ft. on center line of cutoff	Elev. top	Elev. bottom	Depth	Outside line of breakwater
1+02.3	1+04.8	2.5	5.0	-6.0	11.0	At 4 to bluff
1+04.8	1+08.8	5.0	1.5	-6.5	8.0	6.64
1+08.8	1+12.3	3.5	1.5	-14.0 to -15.0	16.0	Return
1+12.3	1+30.1	17.8	-5.0	-15.0	10.0	10.54
1+30.1	1+32.6	2.5	-5.0	-17.0	12.0	Jump 10.54
1+32.6	1+32.6	28.0	-5.0	-13.0	10.0	10.54
1+62.5	1+65.0	5.4	-5.0	-13.0	10.0	Return
1+65.0	1+91.8	11.7 arc	4.0	-8.0	12.0	5.14
1+91.8	2+32.5	71.7 arc	4.0	-6.0	10.0	5.14
2+32.5	2+32.5	2.1	4.0	-8.0	12.0	Return
2+32.5	3+04.0	64.5 arc	0.5	-8.0	8.5	7.24
3+04.0	3+50.0	47.0 arc	1.5	-6.0	7.5	6.64
3+50.0	4+12.6	45.0 arc	3.0	-4.0	7.0	5.74
4+12.6	4+12.6	12.4	3.0	-4.0	7.0	Return at end

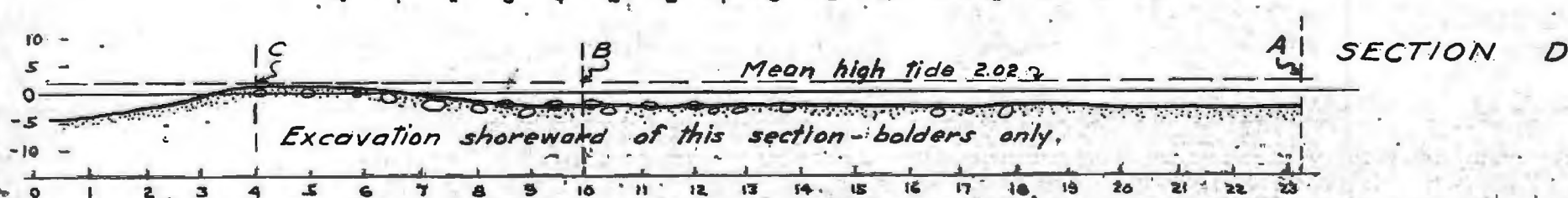
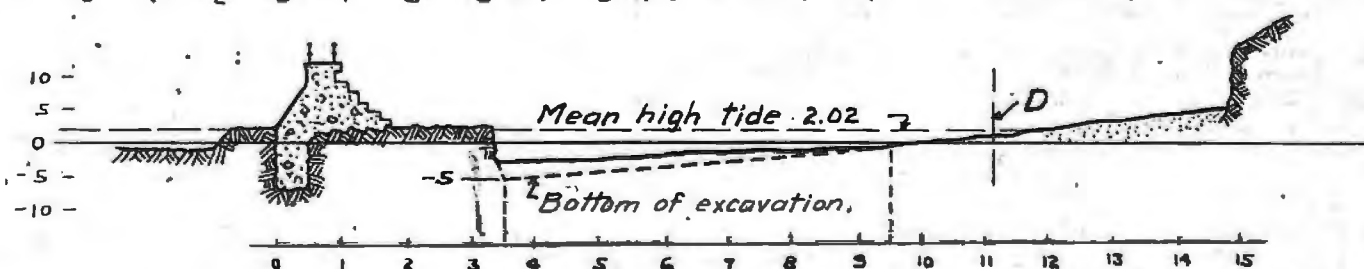
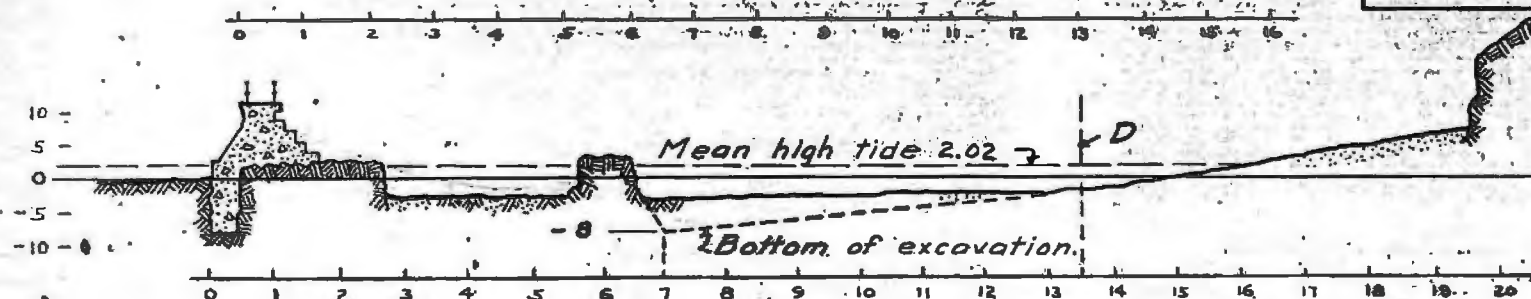
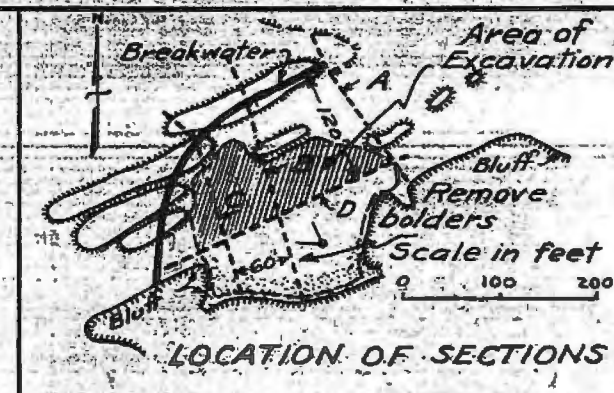
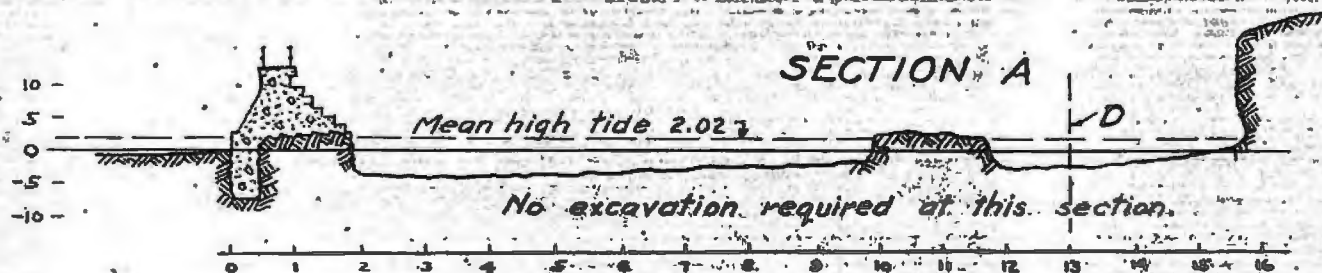


ELLEN BROWNING SCRIPPS
LA JOLLA, CALIFORNIA
BATHING ZONE BREAKWATER
PROFILE OF BREAKWATER

Scale of feet
as shown

April 2, 1931

Engineer



Vertical & Horizontal Scale in feet



All elevations to U.S.G.S. Datum

ELLEN BROWNING SCRIPPS
BATHING ZONE BREAKWATER
LA JOLLA, CALIFORNIA
POOL EXCAVATION

July 29, 1930.

H. N. Savage
Engineer

Drawn by H.W.
Traced by I.W.
Checked by *H.W.*

Sheet 6 of 6

