

STRENGTHENING OF HODGES DAM FEATURE HISTORY

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C I T Y O F S A N D I E G O

CALIFORNIA

B U R E A U O F W A T E R D E V E L O P M E N T

FEATURE HISTORY

HODGES RESERVOIR DAM STRENGTHENING

P.W.A. DOCKET CALIFORNIA 1223 - R

Fred D. Pyle
Hydraulic Engineer

January 1937

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HODGES DAM STRENGTHENING FEATURE HISTORY

INTRODUCTORY STATEMENT

The City of San Diego acquired the San Dieguito Water System which includes the Hodges dam, from the San Dieguito Water Company under a lease option to purchase agreement dated October 5, 1925.

Following the St. Francis Dam disaster the City appointed a board of consulting engineers consisting of Messrs. L. C. Hill, A. J. Wiley, C. R. Olberg and Geologist C. F. Tolman to report on the safety of the City's dams.

The board pointed out that a stress analysis should be made of the buttresses and arches of the dam, and particularly in view of the diagonal cracks which had appeared in each of the higher buttresses.

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The Hodges dam is a multiple arch concrete structure completed in 1918. The dam extends across the San Dieguito River, which at that point has a drainage of about 304 square miles. The spillway crest of the dam is at Elevation 315 U. S. G. S., or 115 feet above streambed. The top of the dam is at elevation 330. The reservoir capacity is 37,500 acre feet, flooded area 1317 acres. The crest length of the dam is 616 feet. Buttresses are spaced 24 feet center to center. The arches decrease in thickness from 2.5 feet at the base of the deepest sections to 1.0 feet at the top. The buttresses decrease in thickness from 4 feet 2 inches at the base of the deepest sections, to 18 inches at the top. There was very little effective bracing between the buttresses prior to the reinforcing work.

The major cracks in the buttresses extend diagonally downward and about at right angles from the lower middle third point of the spring line of the arches. These cracks have been carefully mea-

8/1/38 Direct

sured for a number of years, and it is found that they reach a maximum width during the winter months and a minimum during the summer. There is a gradual increasing width each season as compared with that of the preceding season.

The State of California placed all questions effecting the safety of dams in California under the jurisdiction of the California State Engineer, effective August 14, 1929.

Subsequently the stability and safety of Hodges Dam was carefully investigated and reviewed by the California State Engineer. A consulting board consisting of B. A. Etcheverry, F. C. Herrmann, A. Kempkey and Henry D. Dewell, on March 11, 1929 reported to the State Engineer, in part as follows:

- "(1) Lake Hodges dam is safe to carry the loads, excepting in the case of a major earthquake, provided that the spillway is improved to prevent overtopping."
- "(2) Earthquakes of major intensity occurred in 1812 and again in 1857. There is reason to believe that Lake Hodges dam will at some future time doubtless be subjected to similar earthquakes. To resist such earthquakes, the dam must be reinforced by thorough bracing of the buttresses."

A second board of consulting engineers, George A. Elliott, Harry W. Dennis, and Walter L. Huber, appointed by the State Engineer, also investigated Hodges Dam, and concurred in the finding of the previous board of consultants.

The spillway capacity was improved to the satisfaction of the State Engineer in 1930.

On August 15, 1931, the State Engineer, officially representing the California State Department of Public Works, ordered and directed the City of San Diego to strengthen the buttresses of Hodges Reservoir Dam.

Numerous designs were developed in the Hydraulic Engineer's Office with the cooperation of the State Engineer's office and finally a system of transverse bracing consisting of strengthening frames was ap-

proved and installed. In addition the State Engineer demanded the strengthening to counteract tension in the upstream spring line of the buttresses and diagonal heavily reinforced concrete protected steel bands thoroughly anchored to the buttresses was approved and installed.

Final plans were submitted to the State Engineer and approved on November 17, 1934.

After numerous attempts to finance the construction of the work, application was made in August 1935 to the Public Works Administration of the Federal Government for a grant of 45% of the estimated cost of the work. The City of San Diego appropriated \$99,000 from other funds and the successors in interest to the San Dieguito Mutual Water Company from whom the City was leasing the system with an option to purchase, agreed to reimburse the City for the cost of the cement.

With approval by the Public Works Administration of the City's plans and specifications, and with the allotment by the Federal Government of 45% of the cost of the work, the work was advertised and upon receipt of bids, contract was let to M. H. Golden, a local contractor, on his low bid of \$130,612.50, and the Contract was signed March 25, 1936.

All work was carried on in a most satisfactory manner without difficulties and all work was completed in compliance with the plans and specification on December 28, 1936. Contractor's final estimate was \$135,138.02. On March 17, 1937 the State Engineer issued a certificate of approval of the Hodges Dam.

Fred D. Pyle
Hydraulic Engineer

ORDINANCES
and
RESOLUTIONS

ORDINANCE NO. 727
(New Series)

AN ORDINANCE APPROPRIATING TO AND PLACING IN THE HODGES RESERVOIR DAM STRENGTHENING FUND, FOR THE PURPOSE OF PROVIDING FUNDS FOR THE EXPENSES AND COSTS ARISING OUT OF THE CONSTRUCTION OF HODGES RESERVOIR DAM STRENGTHENING THE SUM OF \$20,000.00.

WHEREAS, pursuant to the terms of Resolution No. 61116, duly and regularly passed and adopted by the Council on the 29th day of November, 1933, there was created and established a special fund in the City Treasury, known as "United States Loan Account - Hodges Reservoir Dam Strengthening;" and

WHEREAS, subsequent thereto there was placed in said fund the sum of \$20,000.00; and

WHEREAS, on or about the 27th day of August, 1935, the Council of The City of San Diego duly and regularly repealed said Resolution No. 61116, for the reasons set forth in said repealing resolution; and

WHEREAS, on the 27th day of August, 1935, the Council of The City of San Diego duly and regularly passed and adopted Resolution No. 63453, entitled, "A Resolution creating and establishing in the Treasury of The City of San Diego a special addount and fund, to be known as 'Hodges Reservoir Dam Strengthening Fund;'" NOW, THEREFORE,

BE IT ORDAINED By the Council of The City of San Diego, as follows:

Section 1. That the sum of twenty thousand dollars (\$20,000.00), now in the City Treasury of The City of San Diego, heretofore placed to the credit of the "United States Loan Account - Hodges Reservoir Dam Strengthening," be, and the same is hereby set aside and appropriated for the purpose only and exclusively of providing funds for all expenses and costs, legal, engineering, construction and administration costs included, occasioned and/or arising out of the project known as the construction of Hodges Reservoir Dam strengthening.

Section 2. That the sum hereinabove appropriated for the purpose herein designated, be, and the same is hereby transferred to and placed in a special account and fund in the Treasury of said City, known as "Hodges Reservoir Dam Strengthening Fund," heretofore duly and regularly created and established by Resolution No. 63453, duly and regularly adopted by the Council of said City on the 27th day of August, 1935.

Section 3. This ordinance shall take effect and be in force on the thirty-first day from and after its passage.

Presented by _____

Approved as
to form by _____
City Attorney

I HEREBY CERTIFY that the above and foregoing is a full,
true and correct copy of Ordinance No. 727, of the ordinances of
the City of San Diego, California, as adopted by the Council of
said City August 27, 1935.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOTE, JR.
Deputy

ORDINANCE NO. 728
(New Series)

AN ORDINANCE TRANSFERRING THE SUM OF \$50,000.00 FROM THE WATER DEPARTMENT FUND OF THE CITY OF SAN DIEGO - DIVISION OF DEVELOPMENT AND CONSERVATION - (ITEM #1347-37K), AS PROVIDED BY SECTION 21 OF ORDINANCE NO. 706 (NEW SERIES) OF THE ORDINANCES OF SAID CITY, TO "HODGES RESERVOIR DAM STRENGTHENING FUND," FOR THE PURPOSE OF PROVIDING FUNDS FOR THE EXPENSES AND COSTS ARISING OUT OF THE CONSTRUCTION OF HODGES RESERVOIR DAM STRENGTHENING.

WHEREAS, under date of August 15, 1931, the Department of Public Works of the State of California, by virtue of the authority vested therein by Chapter 766 of the Statutes of 1929, issued an order directing The City of San Diego to strengthen the buttresses of Hodges Dam; and

WHEREAS, on the 27th day of August, 1935, there was created and established by the Council of The City of San Diego a special account and fund in the City Treasury to be known as "Hodges Reservoir Dam Strengthening Fund;" and

WHEREAS, on or about the 9th day of July, 1935, the Council of The City of San Diego duly and regularly passed and adopted Ordinance No. 706 (New Series), being the annual appropriation ordinance and budget allowances for the fiscal year 1935-36, under the terms of which there was set aside the sum of fifty thousand dollars (\$50,000.00), for the purpose of providing funds to pay the city's share of the costs and expenses arising out of the construction of Hodges Reservoir Dam strengthening; NOW, THEREFORE,

BE IT ORDAINED By the Council of The City of San Diego, as follows:

Section 1. That the sum of fifty thousand dollars (\$50,000.00) be, and the same is hereby transferred from the Water Department Fund of The City of San Diego - Division of Development and Conservation - (Item #1347-37K), as provided by Section 21 of Ordinance No. 706 (New Series) of the ordinances of said City, to "Hodges Reservoir Dam Strengthening Fund", heretofore duly and regularly created and established by Resolution No. 63453, and regularly adopted by the Council of said City on the 27th day of August, 1935, for the purpose only and exclusively of providing funds for all expenses and costs, legal, engineering, construction and administration costs included, occasioned and/or arising out of the project known as the construction of Hodges Reservoir Dam strengthening.

Section 2. This ordinance shall take effect and be in force on the thirty-first day from and after its passage.

Presented by _____

Approved as
to form by _____
City Attorney

I HEREBY CERTIFY that the above and foregoing is a full, true and correct copy of Ordinance No. 728, of the ordinances of the City of San Diego, California, as adopted by the Council of said City August 27, 1935.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOTE, JR.
Deputy

ORDINANCE NO. 729
(New Series)

AN ORDINANCE APPROPRIATING THE SUM OF \$11,800.00 FROM THE UNAPPROPRIATED BALANCE FUND OF THE CITY OF SAN DIEGO, AND TRANSFERRING THE SAME TO "HODGES RESERVOIR DAM STRENGTHENING FUND," FOR THE PURPOSE OF PROVIDING FUNDS FOR THE EXPENSES AND COSTS ARISING OUT OF THE CONSTRUCTION OF HODGES RESERVOIR DAM STRENGTHENING

WHEREAS, under date of August 15, 1931, the Department of Public Works of the State of California, by virtue of the authority vested therein by Chapter 766 of the Statutes of 1929, issued an order directing The City of San Diego to strengthen the buttresses of Hodges Dam; and

WHEREAS, on the 27th day of August, 1935, there was created and established by the Council of The City of San Diego a special account and fund in the City Treasury to be known as "Hodges Reservoir Dam Strengthening Fund;" and

WHEREAS, The City of San Diego has executed an application to the United States for a grant to aid in financing the construction of Hodges Reservoir Dam Strengthening; and

WHEREAS, in order to secure said grant it is necessary that the City make available the entire portion of the City's share of the cost, to-wit, the sum of \$81,800.00; and \$17,500.00 in material; and

WHEREAS, the Council of The City of San Diego has heretofore appropriated the sum of \$70,000.00 for such purpose; NOW, THEREFORE,

BE IT ORDAINED By the Council of The City of San Diego, as follows:

Section 1. That the sum of eleven thousand eight hundred dollars (\$11,800.00) be, and the same is hereby set aside and appropriated out of the Unappropriated Balance Fund of The City of San Diego, for the purpose only and exclusively of providing funds for all expenses and costs, legal, engineering, construction and administration costs included, occasioned and/or arising out of the project known as the construction of Hodges Reservoir Dam strengthening.

Section 2. That the sum hereinabove appropriated for the purpose herein designated, be, and the same is hereby transferred to and placed in a special account and fund in the treasury of said City, known as "Hodges Reservoir Dam Strengthening Fund," heretofore duly and regularly created and

established by Resolution No. 63453, duly and regularly adopted by the Council of said City on the 27th day of August, 1935.

Section 3. This ordinance shall take effect and be in force on the thirty-first day from and after its passage.

Presented by _____

Approved as
to form by _____
City Attorney

I HEREBY CERTIFY that the above and foregoing is a full, true and correct copy of Ordinance No. 729, of the ordinances of the City of San Diego, California, as adopted by the Council of said City August 27, 1935.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOTE, JR.
Deputy

ORDINANCE NO. 827
(New Series)

AN ORDINANCE APPROPRIATING THE SUM OF \$17,200.00 FROM THE UNAPPROPRIATED BALANCE FUND OF THE CITY OF SAN DIEGO, AND TRANSFERRING THE SAME TO THE HODGES RESERVOIR DAM STRENGTHENING FUND OF SAID CITY, FOR THE PURPOSE OF PROVIDING ADDITIONAL FUNDS FOR THE STRENGTHENING OF HODGES RESERVOIR DAM.

BE IT ORDAINED By the Council of The City of San Diego, as follows:

Section 1. That the sum of seventeen thousand two hundred dollars (\$17,200.00) be, and the same is hereby set aside and appropriated out of the Unappropriated Balance Fund of The City of San Diego, and the same is hereby transferred to the Hodges Reservoir Dam Strengthening Fund of said City, for the purpose only and exclusively of providing additional funds to make up the City's proportion, to-wit, \$99,000.00, of the estimated cost of strengthening Hodges Reservoir Dam.

Section 2. This ordinance shall take effect and be in force on the thirty-first day from and after its passage.

Presented by _____

Approved as
to form by C. L. BYERS
City Attorney.

By _____
Assistant City Attorney

I HEREBY CERTIFY that the above and foregoing is a full, true and correct copy of Ordinance No. 827, of the ordinances of the City of San Diego, California, as adopted by the Council of said City February 4, 1936.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOTE, JR.
Deputy

ORDINANCE NO. 998
(New Series)

AN ORDINANCE APPROPRIATING THE SUM OF \$500.00 FROM THE GENERAL FUND OF THE CITY OF SAN DIEGO, FOR THE PURPOSE OF PROVIDING FUNDS FOR CERTAIN EXPENSES NECESSARY IN CONNECTION WITH THE HODGES RESERVOIR DAM STRENGTHENING.

BE IT ORDAINED By the Council of The City of San Diego,
as follows:

Section 1. That the sum of five hundred dollars(\$500.00), or so much thereof as may be necessary, be, and the same is hereby set aside and appropriated out of the General Fund of The City of San Diego, for the purpose only and exclusively of providing funds for the construction of the City's field office at Hodges Reservoir Dam, repair of field equipment, and other miscellaneous items of expense necessary in connection with the Hodges Reservoir Dam Strengthening.

Section 2. This ordinance shall take effect and be in force on the thirty-first day from and after its passage.

Presented by _____

Approved as
to form by _____
City Attorney.

I HEREBY CERTIFY that the above and foregoing is a full, true and correct copy of Ordinance No. 998, of the ordinances of the City of San Diego, California, as adopted by the Council of said City October 6, 1936.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOTE, JR.
Deputy

RESOLUTIONS

RESOLUTION NO. 44861

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

That J. W. Williams, assistant manager of operation, in charge of water development, be and he is hereby instructed to ask the State Engineer to make a thorough examination of all the municipally owned dams and all other dams contiguous to the City of San Diego and report upon his opinion as to their safety.

I HEREBY CERTIFY the above to be a full, true and correct copy of Resolution No. 44861 of the Common Council of the City of San Diego as adopted by said Council March 15, 1928.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOTE, JR.
Deputy

RESOLUTION NO. 45255

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

That J. W. Williams, assistant manager of operation in charge of water development, be and he is hereby authorized and instructed to secure, if possible, the services of A. J. Wiley, C. R. Olberg and L. C. Hill to constitute a board of engineers to inspect all city owned dams and other dams contiguous to the city and make a written report relative to their apparent safety and embody therein any recommendations such board may see fit to make, the services of such engineers to be met by an appropriation from the Reserve Fund.

I HEREBY CERTIFY the above to be a full, true and correct copy of Resolution No. 45255 of the Common Council of the City of San Diego as adopted by said Council April 16, 1928.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOTE, JR.
Deputy

RESOLUTION NO. 59790

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

That H. N. Savage, Hydraulic Engineer, be and he is hereby instructed to prepare plans and specifications for the most economical method of strengthening Lake Hodges Dam.

I HEREBY CERTIFY the above to be a full, true, and correct copy of Resolution No. 59790 of the Council of the City of San Diego as adopted by the said Council March 8, 1933.

ALLEN H. WRIGHT,
City Clerk

By CLARK M. FOOTE, JR.
Deputy

RESOLUTION NO. 60878

BE IT RESOLVED By the Council of The City of San Diego, as follows:

That The City of San Diego make application to the United States for a loan of \$160,000 for the purpose of providing funds for the immediate strengthening of the Hodges reservoir dam, as required by the State Engineer of the State of California, with the understanding that of the amount of money obtained from the United States thirty per cent (30%) of the cost of labor and materials for the work will be a direct grant by the United States, and the balance be repaid to the United States over a period of years and from funds received from the Santa Fe Irrigation District, the San Dieguito Irrigation District, and/or San Diego Water Supply Company.

BE IT FURTHER RESOLVED, that the City Attorney be, and he is hereby authorized and directed to prepare the necessary proceedings for the purpose of effecting said loan.

BE IT FURTHER RESOLVED, that C. L. Byers, City Attorney be, and he is hereby authorized and directed to represent The City of San Diego during all the negotiations between the City and the United States.

I HEREBY CERTIFY the above to be a full, true and correct copy of Resolution No. 60878 of the Council of the City of San Diego, California, as adopted by said Council October 19, 1933.

ALLEN H. WRIGHT,
City Clerk

By CLARK M. FOOTE, JR.
Deputy

RESOLUTION NO. 60919

WHEREAS, the San Diego Water Supply Company is the legal owner of Hodges Dam located in the County of San Diego; and

WHEREAS, The City of San Diego, under an agreement dated October 1925, leased the said dam for a period of years with an option to purchase; and

Whereas, the State Engineer of the State of California has heretofore ordered and directed that certain repairs, reconstructions and betterments be made to strengthen said dam against the possibility of damage by earthquake; and

WHEREAS, both parties above mentioned desire to join in the financing of said repairs, reconstructions and betterments, and have heretofore entered into a contract in writing for such purpose; and

WHEREAS, The City of San Diego agreed to initiate the work and in consequence thereof agreed to prepare the drawings, plans and specifications for such work; and

WHEREAS, the Hydraulic Engineer of the City has now prepared such drawings, plans and specifications for Hodges strengthening; and

WHEREAS, it is necessary to obtain official approval of said plans and specifications from the State Engineer prior to the filing with the Federal Administrator of Public Works under the terms of the National Industrial Recovery Act, for the purpose of obtaining a loan to provide funds for the strengthening of Hodges Dam; and

WHEREAS, The City of San Diego has heretofore agreed to initiate the said application, and the same is now in the process of preparation; NOW, THEREFORE,

BE IT RESOLVED By the Council of The City of San Diego, as follows:

That the Hydraulic Engineer of the City be, and he is hereby authorized and directed to make application to the Department of Public Works of the State of California for approval of the drawings, plans and specifications for Hodges strengthening, so that the same may be submitted to the Federal Administrator of Public Works as a part of The City of San Diego's application for a loan for the strengthening of Hodges Dam.

It is understood that the application for approval of said drawings, plans and specifications mentioned herein is solely for the purpose of enabling the City to negotiate with the Federal Administrator of Public Works for a loan to provide funds for the strengthening of the dam, and the fact that the City Hydraulic Engineer is directed to obtain the official approval from the Department of Public Works of the State of California shall not in any event be held as an admission by The City of San Diego that it is required either by law or by contract to repair said dam.

It is further understood that there is now pending in the Superior Court an action entitled, "The Department of Public Works of the State of California, et al. v. The City of San Diego, et al."; that no trial of said action has been had; and that the parties defendant thereto at no time have admitted, and do not now admit, any liability as a result of the filing of said action; and that the attempt by the San Diego Water Supply Company and The City of San Diego to voluntarily strengthen the dam and to jointly assist in the financing of the cost of such strengthening, shall not in any event be taken as an admission of any liability in connection with the action pending in the Superior Court, herein mentioned.

I HEREBY CERTIFY the above to be a full, true and correct copy of Resolution No. 60919 of the Council of the City of San Diego, California, as adopted by said Council October 23, 1933.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOTE, JR.
Deputy

RESOLUTION NO. 60977

WHEREAS, heretofore on the 19th day of October, Resolution No. 60878 was duly and regularly adopted by the Council of The City of San Diego under the terms of which the City Attorney was directed to prepare and file an application addressed to the Administrator, Federal Emergency Administration of Public Works, for the purpose of securing a loan on behalf of The City of San Diego to afford funds for the reconstruction and strengthening of Hodges Dam; and

WHEREAS, at said meeting said project was authorized; and

WHEREAS, said application has now been prepared and presented to this Council for execution; NOW, THEREFORE,

BE IT RESOLVED By the Council of The City of San Diego, as follows:

That a majority of the members of the Council be, and they are hereby authorized and directed to execute on behalf of The City of San Diego the aforesaid application and exhibits annexed thereto to the Federal Emergency Administration of Public Works.

That C. L. Byers, City Attorney of San Diego be, and he is hereby authorized to deliver and present on behalf of The City of San Diego the aforesaid application and exhibits annexed thereto; and that C. L. Byers be, and he is hereby authorized to supply to the Administrator, Federal Emergency Administration of Public Works, any other instruments or data which the Administrator may request in connection with such application; and the said officers, or any of them, be, and they are hereby authorized to execute on behalf of The City of San Diego any papers in addition to the foregoing application, or to do any act on behalf of said City which may be required by the Administrator in connection with the loan and grant applied for in such application. That any of the powers granted to said officers by this resolution may be exercised by said officers jointly or by any one of them singly.

I HEREBY CERTIFY the above to be a full, true and correct copy of Resolution No. 60977 of the Council of the City of San Diego, California, as adopted by said Council November 8, 1933.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOTE, JR.
Deputy

RESOLUTION NO. 60938

WHEREAS, the Department of Public Works of the State of California has heretofore ordered the repair and strengthening of Hodges Reservoir Dam; and

WHEREAS, the City Council of The City of San Diego has heretofore directed the City Attorney to prepare an application to the Federal Emergency Administration of Public Works for a loan and grant to afford funds for such repair and strengthening; NOW, THEREFORE,

BE IT RESOLVED By the Council of The City of San Diego, as follows:

That C. L. Byers, City Attorney of The City of San Diego, be, and he is hereby appointed the official representative of the City, to represent the City in all negotiations with the United States relative to securing a loan and grant of One Hundred Sixty Thousand Dollars (\$160,000) for the purpose of providing funds for the repair and strengthening of Hodges Dam.

That he is authorized to prepare, present and deliver, through regular channels, The City of San Diego's application to the Federal Emergency Administration of Public Works for a loan, and is authorized to incur legal, engineering, and travel expense to Los Angeles and San Francisco incident to the presentation of said application; and he is authorized, on behalf of the City, to perform all acts and things required to be done by the United States relative to the securing to the City of the funds necessary for the repair and strengthening of Hodges Dam.

I HEREBY CERTIFY the above to be a full, true and correct copy of Resolution No. 60938 of the Council of the City of San Diego California, as adopted by said Council October 30, 1933.

ALLEN H. WRIGHT
City Clerk

By Clark M. Foote, jr.
Deputy

RESOLUTION NO. 62228

A RESOLUTION APPROVING THE LOAN AND GRANT AGREEMENT BETWEEN THE CITY OF SAN DIEGO AND THE UNITED STATES OF AMERICA, AND AUTHORIZING ITS EXECUTION.

BE IT RESOLVED By the Council of The City of San Diego, as follows:

Section 1. That the Loan and Grant Agreement between The City of San Diego and the United States of America under and subject to the terms of which the United States will by loan and grant not exceeding in the aggregate the sum of one hundred thirty-four thousand dollars (\$134,000.00) aid said The City of San Diego in financing the strengthening of the buttresses of the multiple arch dam at Hodges Reservoir by a system of reinforced concrete columns, stretched and diagonal beam reinforcing, and construction of a spillway discharge apron, a copy of which Loan and Grant Agreement has been approved as to form by the City Attorney, and is filed among the public records of The City of San Diego in the office of the City Clerk, and which Loan and Grant Agreement is hereby made a part hereof, be, and the same is hereby in all respects approved.

Section 2. That the City Manager, Mayor, and a majority of the members of the Council of said The City of San Diego, be, and they are hereby authorized and directed to execute such Loan and Grant Agreement in triplicate on behalf of The City of San Diego; and the City Clerk of said The City of San Diego be, and he is hereby authorized and directed to impress or affix the official seal of said The City of San Diego to each of said three copies of said Loan and Grant Agreement, and to attest such seal.

Section 3. That the said City Clerk be, and he is hereby authorized and directed to forthwith forward three copies of said Loan and Grant Agreement as executed on behalf of said The City of San Diego to the Federal Emergency Administration of Public Works, Washington, D.C., through the office of the State Engineer PWA, Los Angeles, California.

Section 4. That the City Manager, Mayor, and a majority of the members of the Council of said The City of San Diego be, and they are hereby authorized and empowered, on behalf of said The City of San Diego, to request, and consent to, modifications of or changes in said Loan and Grant Agreement with reference to the designation, date, denominations, medium of payment, places of payment, and registration or conversion privileges of the bonds to be issued thereunder in order to comply with the requirements of law and of the proceedings taken for the issuance of said bonds, and to execute in the same manner as said Loan and Grant Agreement any further instruments that may be found desirable in connection with such modifications or changes.

Section 5. That the City Clerk of The City of San Diego be, and he is hereby authorized and directed to forthwith send to said Federal Emergency Administration of Public Works two certified copies of this resolution and two certified copies of

the proceedings of the Council in connection with the adoption of this resolution, and such further documents or proofs in connection with the approval and execution of said Loan and Grant Agreement as may be requested by said Federal Emergency Administration of Public Works.

I HEREBY CERTIFY the above to be a full, true and correct copy of Resolution No. 62228 of the Council of the City of San Diego, California, as adopted by said Council Oct. 23, 1934.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOTE, JR.
Deputy

RESOLUTION NO. 63450

A RESOLUTION AUTHORIZING THE CITY MANAGER OF THE CITY OF SAN DIEGO ON BEHALF OF SAID CITY TO FILE AN APPLICATION TO THE UNITED STATES OF AMERICA THROUGH THE FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS FOR A GRANT TO AID IN FINANCING THE CONSTRUCTION OF HODGES RESERVOIR DAM STRENGTHENING, AND DESIGNATING R. W. FLACK, CITY MANAGER OF THE CITY OF SAN DIEGO, TO FURNISH SUCH INFORMATION AS THE GOVERNMENT MAY REQUEST.

BE IT RESOLVED By the Council of The City of San Diego, as follows:

Section 1. That R. W. Flack, City Manager of The City of San Diego, be, and he is hereby authorized to execute and file an application on behalf of The City of San Diego, County of San Diego, California, to the United States of America, for a grant to aid in financing the construction of Hodges Reservoir Dam strengthening.

Section 2. That said R. W. Flack, City Manager, be, and he is hereby authorized and directed to furnish such information as the United States of America, through the Federal Emergency Administration of Public Works, may reasonably request in connection with the application which is herein authorized to be filed.

CERTIFICATE OF CLERK

I, ALLEN H. WRIGHT, the duly appointed, qualified and acting City Clerk of The City of San Diego, California, do hereby certify that I have compared the attached copy of a resolution entitled

"RESOLUTION NO. 63450. A RESOLUTION AUTHORIZING THE CITY MANAGER OF THE CITY OF SAN DIEGO ON BEHALF OF SAID CITY TO FILE AN APPLICATION TO THE UNITED STATES OF AMERICA THROUGH THE FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS FOR A GRANT TO AID IN FINANCING THE CONSTRUCTION OF HODGES RESERVOIR DAM STRENGTHENING, AND DESIGNATING R. W. FLACK, CITY MANAGER OF THE CITY OF SAN DIEGO, TO FURNISH SUCH INFORMATION AS THE GOVERNMENT MAY REQUEST."

with the original of such resolution on file in my office and that the same is a true and correct copy of such resolution which was regularly adopted at a meeting of the Council of The City of San Diego, duly held on the 27th day of August, 1935.

Dated this 27th day of August, 1935.

Allen H. Wright
City Clerk of The City of San Diego,
California

(SEAL)

RESOLUTION NO. 63451

WHEREAS, San Diego Water Supply Company and The City of San Diego entered into a certain lease and option agreement, dated October 5, 1925, whereby the Water Company leased to the City for a term of thirty (30) years with option to purchase at any time during such period, certain real and personal property, including among other things a certain dam and reservoir situated in San Diego County, and commonly known as Hodges Dam; and

WHEREAS, both parties desire certain construction, reconstruction, repairs and betterments to be made to said Hodges Dam, to cost approximately \$180,000.00; and

WHEREAS, both parties desire to join in the financing of said construction, reconstruction, repairs and betterments; and

WHEREAS, said Water Company by and through John Treanor, its President, has filed a communication dated August 12, 1935, and addressed to Fred Pyle, Hydraulic Engineer of The City of San Diego, a copy of which is attached hereto; and

WHEREAS, said communication submits an offer by said Water Company to assist the City in obtaining funds for the construction and repair of Hodges Dam; NOW, THEREFORE,

BE IT RESOLVED By the Council of The City of San Diego, as follows:

That the offer of San Diego Water Supply Company, set forth in the said communication dated August 12, 1935, from John Treanor, President of said Company, to Mr. Fred Pyle, Hydraulic Engineer, a copy of which is attached hereto, be, and the same is hereby accepted.

BE IT FURTHER RESOLVED, that the City Attorney be, and he is hereby authorized to prepare a contract by and between the San Diego Water Supply Company and The City of San Diego, according to the offer contained in said communication from said Company herein identified.

Presented by _____

Approved as
to form by _____
City Attorney

JOHN TREANOR
621 SOUTH HOPE STREET
LOS ANGELES

Warner Springs, Aug. 12, 1935

Mr. Fred Pyle,
Hydraulic Engineer
City of San Diego, Cal.

Dear Mr. Pyle:
Mr. Crowsell telephones that you desire to know whether the

water company is disposed to reassume the obligation to assist the City of San Diego in the repair of Hodges Dam, as stated in an agreement between the company and the city, dated Oct. 16, 1933. This agreement has lapsed by reason of the failure to start the work of repair as therein provided.

The company is willing to enter into a new agreement in similar terms calling for a payment of \$2,000 per year during the life of the Lease-Option contract, provided repair work is started before Jan. 1, 1936.

At one time, while the city was struggling with the problem of ways and means of financing this work, I undertook on behalf of the company, in conversations with Mr. Byers, City Attorney, to discount the future payments provided for in the agreement. I cannot renew this offer at the present time, as the sum involved has been used for other company purposes.

I will however undertake to furnish, on behalf of the company, the amount of Portland Cement required for the repairs - that is, the company will enter a bid for your cement requirements in the usual way and if the cement order is awarded to it, an agreement can then be entered into whereby payment will be offset against the annuity provided for in the proposed agreement referred to in the second paragraph of this letter. Of course this advance payment, in the form of cement, or in cash, if it takes that form, will be upon a discounted basis, correctly reflecting the present worth of money at 6%.

Will you kindly have two copies of this letter made, sending one copy to Mr. Crogwell and one to me at this address, where I am spending my vacation. I have no facilities here for making copies conveniently.

With very kind regards, I beg to remain,

Sincerely yours,
JOHN TREANOR (Signature)
President
San Diego Water Supply Co.

I HEREBY CERTIFY the above to be a full, true and correct copy of Resolution No. 63451 of the Council of the City of San Diego, California, as adopted by said Council Aug. 27, 1935.

ALLEN H. WRIGHT,
City Clerk

By CLARK M. FOOTE, JR.
Deputy

RESOLUTION NO. 63453

A RESOLUTION CREATING AND ESTABLISHING IN THE TREASURY OF THE CITY OF SAN DIEGO A SPECIAL ACCOUNT AND FUND, TO BE KNOWN AS "HODGES RESERVOIR DAM STRENGTHENING FUND."

WHEREAS, The City of San Diego heretofore acquired what is known as the San Dieguito Water System, including Hodges Reservoir Dam, located in San Diego County, California, from the San Dieguito Water Company, under the terms of a lease-option agreement to purchase, dated October 5, 1925; and

WHEREAS, under date of August 15, 1931, the Department of Public Works of the State of California by virtue of authority vested therein by Chapter 766 of the Statutes of 1929, issued an order directing The City of San Diego to strengthen the buttresses of Hodges Dam; and

WHEREAS, at said time there being no funds available The City of San Diego was unable to comply with such order; and

WHEREAS, thereafter the Department of Public Works filed an action in the courts of the State of California in an effort to secure compliance with said order; and

WHEREAS, at the present time The City of San Diego has available in the Treasury of said City the sum of \$81,800.00, for the purpose of financing the City's share of the cost of said project; and

WHEREAS, the City has prepared an application addressed to the Administrator, Federal Emergency Administration of Public Works, for the purpose of securing a grant to cover the balance of the cost of the construction of Hodges Reservoir Dam strengthening; and

WHEREAS, it is necessary, in order to secure said grant, that a special fund be created and established in the Treasury of The City of San Diego, and that there be placed therein the funds necessary to finance the City's share of the cost of said project; NOW, THEREFORE,

BE IT RESOLVED By the Council of The City of San Diego, as follows:

Section 1. That there be, and there is hereby created and established in the Treasury of The City of San Diego a special account and fund, to be known and entitled as "Hodges Reservoir Dam Strengthening Fund."

Section 2. That all sums of money placed to the credit of said fund by The City of San Diego or otherwise shall be used solely and exclusively for the purpose of providing funds for

RESOLUTION NO. 63452

WHEREAS, heretofore the Council duly and regularly adopted Resolution No. 61116, entitled, "Resolution creating and establishing in the Treasury of The City of San Diego a special account, to be known as 'United States Loan Account - Hodges Reservoir Dam Strengthening;' " and

WHEREAS, said account was created for the purpose of placing funds therein to repay a contemplated loan from the United States in connection with the financing of the Hodges Dam strengthening; and

WHEREAS, said loan from the United States could not be negotiated at said time contemplated by said resolution; and

WHEREAS, the account as set up in said resolution cannot now be of practical use to The City of San Diego; NOW, THEREFORE,

BE IT RESOLVED By the Council of The City of San Diego, as follows:

That Resolution No. 61116, adopted by the Council of The City of San Diego on the 29th day of November, 1933, be, and the same is hereby repealed.

Presented by _____

Approved as
to form by _____
City Attorney

I HEREBY CERTIFY the above to be a full, true and correct copy of Resolution No. 63452 of the Council of the City of San Diego, California, as adopted by said Council August 27, 1935.

ALLEN H. WRIGHT,
City Clerk.

RESOLUTION NO. 63847

A RESOLUTION ACCEPTING THE OFFER OF THE UNITED STATES TO THE CITY OF SAN DIEGO TO AID BY WAY OF GRANT IN FINANCING THE STRENGTHENING OF HODGES RESERVOIR DAM.

BE IT RESOLVED By the Council of The City of San Diego as follows:

Section 1. That the offer of the United States of America to The City of San Diego to aid by way of grant in financing the strengthening of Hodges Reservoir Dam, a copy of which offer reads as follows:

"P.W. 46599-31

FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS

Washington, D.C.
December 11, 1935.
State File No. Calif. 1223.

The City of San Diego,
San Diego, California.

Subject to the Rules and Regulations (PWA Form No. 179, July 22, 1935, as amended to date) which are made a part hereof, the United States of America hereby offers to aid in financing the strengthening of Hodges Reservoir Dam (herein called the 'Project') by making a grant to The City of San Diego, San Diego County, in the amount of 45 percent of the cost of the Project upon completion, as determined by the Federal Emergency Administrator of Public Works, but not to exceed, in any event, the sum of \$81,000.

UNITED STATES OF AMERICA

Federal Emergency Administrator
of Public Works

By Horatio B. Hackett
Assistant Administrator."

be, and the same is hereby in all respects accepted.

Section 2. That said The City of San Diego agrees to abide by all the rules and regulations relating to such grant, a copy of which rules and regulations were annexed to the Government's offer and made a part thereof.

Section 3. That the City Clerk of The City of San Diego be, and he is hereby authorized and directed forthwith to send to the Federal Emergency Administration of Public Works three certified copies of the proceedings of this Council in connection with the adoption of this resolution, and such further documents or proofs

in connection with the acceptance of said offer as may be requested by the Federal Emergency Administration of Public Works.

Presented by _____

Approved as to form by C. L. BYERS, City Attorney

By _____
Assistant City Attorney

Passed and adopted by the said Council of the said City of San Diego, California, this 31st day of December, 1935 by the following vote, to-wit:

YEAS-Councilmen: Bennett, Wansley, Wurfel, Warburton, Stannard, Sibbert and Mayor Benbough

NAYS-Councilmen: None

ABSENT-Councilmen None

Attest:

Percy J. Benbough
Mayor of the City of San Diego, California

Allen H. Wright
City Clerk of the City of San Diego, California

By Clerk M. Foote, Jr. Deputy

I HEREBY CERTIFY that the above and foregoing resolution was passed by the Council of the said City of San Diego, at the time and by the vote, above stated.

Allen H. Wright
City Clerk of the City of San Diego, California

(SEAL)

By Clerk M. Foote, Jr.
Deputy

10-20-36
copy/p

RESOLUTION No. 63971

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

That the City Manager and the City Attorney are hereby requested to enter into negotiations with the San Diego Water Supply Company bondholders' representative to attempt to secure further financial assistance in the strengthening of Hodges Reservoir Dam.

I HEREBY CERTIFY the above to be a full, true, and correct copy of Resolution No. 63971 of the Council of the City of San Diego, as adopted by the said Council February 4, 1936.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOT, JR.
Deputy

10-20-36
copy/p

RESOLUTION NO. 64025

BE IT RESOLVED By the Council of The City of San Diego
as follows:

That the notice to contractors, instructions to bidders,
proposals, drawings and specifications contained in Document
No. 296494 for the Hodges Reservoir Dam strengthening,
Federal Public Works Project, California 1223R, are hereby
approved.

I HEREBY CERTIFY the above to be a full, true and
correct copy of Resolution No. 64025 of the Council of
the City of San Diego, California, as adopted by said
Council February 18, 1936.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOTE, JR.
Deputy

10-20-36
copy/p

RESOLUTION NO. 64026

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

That the Purchasing Agent of The City of San Diego be, and he is hereby authorized and directed to advertise for sealed proposals or bids to be received at the office of the City Clerk of The City of San Diego, California, until 10:00 o'clock A.M. of the 10th day of March, 1936, FOR

Furnishing all labor, material, transportation and services for the construction of Hodges Reservoir Dam strengthening, for The City of San Diego, California, Said work being located at the Hodges Reservoir Dam, about ten miles easterly of Solana Beach, California, and involving approximately 4,200 cubic yards of concrete, the placing of about 80,000 lbs. of reinforcing steel and furnishing and placing about 6,500 barrels of low-heat cement, about 645,500 lbs. of steel of various kinds, and miscellaneous items; each bid to be in accordance with plans and specifications now on file with the City Clerk of The City of San Diego and contained in Document No. 296,494, which plans and specifications and notices contained therein are hereby made a part of this resolution.

BE IT FURTHER RESOLVED, that said advertisement for bids shall be published for at least seven (7) consecutive days in the official newspaper of said City prior to the time specified herein up to which sealed proposals shall be received; such a notice shall also be posted for the same length of time in a conspicuous place in or near the door of the Council Chamber of the City Hall, also at or near the entrance of the City Hall in said city, and said advertisement shall specify the per diem wages as fixed in Document No. 296,494, which is hereby made a part of this resolution.

I HEREBY CERTIFY the above to be a full, true and correct copy of Resolution No. 64026 of the Council of the City of San Diego, California, as adopted by said Council February 12, 1936.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOTE JR.
Deputy

RESOLUTION NO. 64135

WHEREAS, bids for the Hodges Reservoir Dam Strengthening were open and read on the 10th day of March, 1936; and

WHEREAS, the following bids were submitted:

<u>Bidder</u>	<u>Bid Total</u>
M.H. Golden, San Diego	\$ 130,612.50
B.O. Larsen, San Diego	140,231.00
Case Construction Co., Inc. Alhambra,	156,810.00
Bent Bros Inc., Los Angeles	161,177.00
George Hess, Los Angeles	167,432.00
V.R. Dennis, San Diego	171,242.50
Frank Doran, San Diego	179,189.00
L.E. Dixon Co., Los Angeles	179,621.00; and

WHEREAS, M. H. Golden was the lowest, responsible bidder;
NOW, THEREFORE,

BE IT RESOLVED By the Council of The City of San Diego, as follows:

That the Public Works Administration is hereby requested to authorize The City of San Diego to award the contract for the Hodges Reservoir Dam Strengthening to the low bidder, M. H. Golden, Bank of America Building, San Diego, California, at the earliest practicable date.

BE IT FURTHER RESOLVED, that the bid of M.H. Golden, as contained in Document No. 296824, on file in the office of the City Clerk of The City of San Diego for Hodges Reservoir Dam Strengthening, being the lowest bid submitted for said work, be, and the same is hereby accepted; and that, subject to approval by the Public Works Administration, the contract for such work be, and the same is hereby awarded to the said M.H. Golden.

I HEREBY CERTIFY the above to be a full, true and correct copy of Resolution No. 64135 of the Council of the City of San Diego, California, as adopted by said Council March 17, 1936.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOTE, JR.
Deputy

RESOLUTION NO. 64183

WHEREAS, by resolution of this Council No. 64135, duly and regularly adopted on the 17th day of March, 1936, the bid of M.H.Golden, as contained in Document No. 296824, on file in the office of the City Clerk of The City of San Diego, for Hodges Reservoir Dam Strengthening was accepted, and, subject to the approval by the Public Works Administration, the contract for such work was awarded to the said M.H.Golden; and

WHEREAS, such award of contract has now been approved by the Public Works Administration; NOW, THEREFORE,

BE IT RESOLVED By the Council of The City of San Diego, as follows:

That a majority of the members of the Council of The City of San Diego be, and they are hereby authorized and empowered to enter into a contract with the said M.H.Golden for the construction of Hodges Reservoir Dam Strengthening, in accordance with his bid and at and for the prices specified therein, and upon the terms, conditions and specifications set forth in said Document No. 296824, being entitled, "Notice to Contractors, Instructions to Bidders, Proposal, Drawings and Specifications, Hodges Reservoir Dam Strengthening. Federal Public Works Project, California 1223R."

Presented by _____

Approved as
to form by _____
City Attorney

I HEREBY CERTIFY the above to be a full, true and correct copy of Resolution No. 64183 of the Council of the City of San Diego, California, as adopted by said Council March 24, 1936.

Allen H. Wright
City Clerk

By Clark M. Foote, Jr.
Deputy

RESOLUTION NO. 64269

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

That a majority of the members of the Council of The City of San Diego hereby approve the subcontract agreement entered into on the 10th day of April, 1936, between Contractor M.H. Golden and Emsco Concrete Cutting Corp. for certain drilling, chipping, etc., in connection with the Hodges Reservoir Dam Strengthening PWA Docket Calif. 1223-R, which said sub-contract is filed in the office of the City Clerk of said City under Document No. 297343.

I HEREBY CERTIFY the above to be a full, true, and correct copy of Resolution No. 64269 of the Council of the City of San Diego, as adopted by the said Council April 21, 1936.

Allen H. Wright
City Clerk

By Clark M. Foote, Jr.
Deputy

CALIFORNIA STATE ENGINEER

San Diego, Calif.
May 21, 1928

To the Honorable, Mayor and Common Council,
City of San Diego,
San Diego, Calif.

Gentlemen:

In accordance with resolution of the Common Council, dated April 16, 1928, the undersigned made an examination of all the dams included in the impounding system of the City of San Diego, and also made an investigation of two dams of the Cuyamaca System. This investigation was limited to the determination of the safety of these structures. The dams were visited in the following order, Lower Otay Dam, Upper Otay Dam, Barrett Dam, Morena Dam, Cuyamaca Dam, Sutherland Dam, Murray Dam, San Dieguito Dam, Hodges Dam and Chollas Dam. A detailed discussion of the geology at each damsite, of the conditions as found by your Board, and of our conclusions as to necessary improvements is contained in the accompanying report. The findings of your Board are briefed herewith:

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Hodges Dam.

Hodges Dam is also a multiple arch structure of the Eastwood type. The foundation rock includes a wider variety of volcanic rock than was noted at any of the other damsites. A zone of intense shearing and probably of minor faulting cuts through the spillway to the right of the dam. This zone of weakness, however, probably does not seriously affect the dam. In general, the foundation rock may be considered satisfactory. The concrete in the dam is of good quality and there is very little seepage through or around the dam.

Most dams of this type with unreinforced concrete buttresses have diagonal cracks in the buttresses, and this structure is no exception. However, the cracks in some of the buttresses are much larger than those in any other dam of this type with which members of your Board are familiar. The size of these cracks has increased materially since first observed by one member of the Board, and there is evidence of recent movement. In addition, the concrete along these cracks shows signs of distress. No such condition exists in any of the other dams inspected by your Board.

It has been impossible, of course, for this Board to check the design of the dam in the short time available. The conditions found, however, make it imperative that an immediate and complete analysis of all stresses in the dam be made, and that a most complete examination be made of the entire structure.

The rock below the spillway is subject to raveling and erosion and protection is necessary. The flood of February, 1927, did serious damage below the spillway and new work was necessary. The repairs which have been made probably will protect the spillway

structure and the dam through the next large flood. After this flood the spillway and the rock below should be protected completely and permanently. If this work is further deferred the expense will be greatly increased and the spillway structure and the dam might be endangered.

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Respectfully submitted.

Louis C. Hill
A. J. Wiley
C. F. Tolman
C. R. Olberg

BOARD OF ENGINEERS
A. J. WILEY
LOUIS C. HILL
C. R. OLBERG
C. F. TOLMAN, Geologist.

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HODGES DAM

Description

Hodges Dam is a multiple arch structure of the Eastwood type. It has a crest length of 750 ft., a height of 130 ft. above stream bed and 157 ft. above the lowest foundation. The capacity of the reservoir at elevation 115 above stream bed, which is the level of the spillway crest, is about 38,000 ac. ft. The overflow spillway at the right hand end of the dam is 340 ft. long.

Geology

The foundation consists of a variety of volcanic rock including layers of rhyolite, basalt and of andesitic agglomerate. These formations belong to the group classified as "pre-granitic volcanics". A much wider variety of volcanic rocks occur in this locality than noted at the other dam sites. At about 100 years above and to the right of the structure, the lava foundation rocks are in contact with the younger intrusive granite. A zone of intense shearing and probably of minor faulting cuts through the spillway to the right of the dam. This zone of weakness, however, probably does not seriously affect the dam structure.

The foundation rock is cut by very prominent zones of shear and the surface rock is blocky and subject to ravelling by action of overflow waters. Spillway protection is therefore essential.

In general the foundation rock may be considered satisfactory.

Condition of Dam.

The unreinforced concrete buttresses of most dams of the multiple arch type have diagonal cracks and those in Hodges Dam

are not exceptions. However, the cracks in some of the buttresses are much larger than those in any other dam of this type with which the members of this Board are familiar. The size of these cracks has increased materially since first observed by one member of the Board and they show evidence of recent movement. In addition the concrete along the cracks shows signs of distress. No such condition exists in any of the other dams inspected by the Board.

It has been impossible to check the design of the dam in the short time available as a long and highly involved series of computations is required. The conditions found, however, make it imperative that someone especially qualified in the design of multiple arch dams make an analysis of all stresses in Hodges Dam and make a complete examination of the entire structure. This should be done without delay.

The concrete apparently is of good quality and there is very little seepage through or around the dam.

Spillway.

When the level of the reservoir reaches the top of the dam the capacity of the spillway is about 60,000 sec.ft., or about 200 sec. ft. per sq. mi. of tributary drainage area.

There had been considerable erosion in the rock below the spillway prior to the flood of February, 1927. This flood did serious damage and some new work and repairs to the channel were necessary. Complete protection has not been accomplished but the work that has been done probably will protect the channel sufficiently through the next large flood so as to obviate any danger to the safety of the spillway structure or the dam. This next flood probably will take out the conduit leading from the dam and further erode the spillway channel. Immediately thereafter the spillway should be protected completely and permanently and the approach should be improved. If the protection work should be deferred further, not only would the expense of making the repairs be greatly increased but, in all probability, the spillway structure and the dam itself would be endangered.

Recommendations.

(1) That a complete examination of Hodges Dam be made immediately with especial reference to the cracks in the buttresses.

(2) That a complete analysis of all stresses in the dam be made immediately by someone especially qualified.

(3) That immediately subsequent to the next large flood the dam and spillway be protected completely and permanently against erosion and that the spillway approach channel be improved.

F. C. HERRMANN
Consulting Civil Engineer

San Francisco, March 11, 1929

Mr. Edw. Hyatt, State Engineer,
Forum Building
Sacramento, California

Dear Sir:

At your request we have made an examination and investigation of the Lake Hodges Dam in San Diego County, and submit the following report.

Field examination of the structure was made on December 6th and 8th, 1928, during which time all component parts of the structure were closely examined.

We were accompanied by the engineers of the City of San Diego and of the other interests concerned with Lake Hodges reservoir, and were given every opportunity by these engineers to examine all data and reports in connection therewith, and we wish to express our appreciation for their hearty cooperation.

In addition the full records of the State Engineer were made available, among which were plans and specifications of the dam, and monthly progress diagrams of construction and numerous reports of inspection during the progress of the work.

The special reports available are the following:

1. Report and Recommendations, Lake Hodges Dam, made to H.N. Savage by H.A. Brahtz, dated July 24th, 1928.
2. Report on the Examination of the Dams of the Water Supply System of the City of San Diego to the Mayor and Common Council of the City of San Diego, by Louis C. Hill, C. R. Ohlberg, A. J. Wiley and C. F. Tolman, dated May, 1928.
3. Report on Lake Hodges Dam to J. B. Lippincott, by Charles Derleth, Jr. dated July 18th, 1922.

Records in the office of the Hydraulic Department of the City of San Diego, which include:

1. Measurements of changes in the widths of cracks in the buttresses from October, 1922, to September, 1928.
2. Hydrographic data relating to floods.
3. Storage curve and spillway discharge curve of Lake Hodges reservoir

In addition to the above other data were obtained from the San Francisco office of the United States Geological Survey, and from the Engineer of the San Diego County Water Company.

Mr. W. A. Perkins, Associate Engineer of the State Engineering Department, at our request made studies of stresses in the various elements of the structure under assumptions as to external loadings.

Mr. H. D. Dewell, Consulting Structural Engineer of San Francisco, at our request has carefully reviewed the structural phases of all the available reports and computations, and has made independent analyses of various stresses in the structure with certain assumptions as to behavior under external loads. Mr. Dewell is a member of the Committee of the American Society of Civil Engineers, which, after investigations over the past four or five years, recently reported on the effects of earthquakes on engineering structures. He has given consideration to possible effects of earthquakes on Lake Hodges Dam, appreciating that the science of determining stresses due to earthquakes is yet in its infancy.

Description of Lake Hodges Dam (Plate 1)

Lake Hodges Dam is a concrete multiple arch dam of the Eastwood type. It is located on the San Dieguito River about thirty miles from San Diego. The dam consists of the main non-overflow portion, with a crest length of 390 feet, the ogee rollway portion 175 feet in length, and the broad crest spillway extension cut in the side hill 185 feet in length. The maximum height of the dam is about 130 feet above the streambed. The top of the dam is 15 feet above the crest of the spillway. The buttresses are unreinforced, except where arches, strut beams and foot walks are tied in. They are spaced 24 feet on centers. Their thickness is 18 inches for the top 47 feet, and increases to 4 feet at the base of the highest buttress. The northerly seven buttresses are covered with a reinforced concrete deck rollway forming the ogee portion of the spillway. Reinforced concrete struts placed at intervals of about 35 feet both vertically and horizontally give the buttresses some lateral bracing. The arches are reinforced and have a minimum thickness of 12 inches for the first 50 feet below the crest. Below the 50 foot point the thickness increases to 2 feet and 7 1/2 inches at the bottom of the dam. The slope of the crown of the arches is 45°.

The dam was completed in 1918. On account of the small run-off for the 1918-1919 season, less than 3000 acre feet was held in storage in 1919. In 1920 the maximum amount held in storage was 15,500 acre feet, with the water level in the reservoir about 23 feet below the crest of the spillway. Water remained at about this level in the reservoir until about December 1st, 1921, when it began to rise, and reached the crest of the spillway on December 26th of that year. Surplus water flowed through the spillway from December, 1921, to June, 1922, and from January, 1923, to May, 1923. The reservoir has been fairly well filled since the beginning of the year 1922.

Assumed Loadings

In all the computations of stresses in the various loadings it has been assumed that the reservoir was full to the crest of the dam.

Such condition will occur only in time of maximum flood of 90,000 second feet, which we estimate may occur once in 500 to 1000 years, and in such instance will last but a few hours. The maximum height of water in the reservoir since it was completed was about 3 1/2 feet below crest of dam. This was in the flood of 1927 when the water stood within four feet of the crest for about four hours.

Had the large flood of 1916 occurred since the dam was completed the water would have stood at a maximum height of 1 foot from the crest of the dam, and would have stood within 4 feet of the crest for about twelve hours. With the spillway improved, as discussed later in this report, the maximum height of water for a 1916 flood would have been 2 feet below the crest, and would have stood within 4 feet of the crest for about twelve hours.

Except in times of large flood, the water stands at least 15 feet below the crest. It is therefore seen that the maximum stresses mentioned in this report may occur but rarely, and if they occur are sustained but for a short time. During all but these short periods of times, the stresses are considerably less than those discussed in this report.

Foundations

The geology of the damsite, as described by Dr. Tolman, geologist of Stanford University, is as follows:

"The foundation consists of a variety of volcanic rock including layers of rhyolite, basalt and of andesitic agglomerate. These formations belong to the group classified as 'pre-granitic volcanics'. At about 100 yards above and to the right of the structure, the lava foundation rocks are in contact with the younger intrusive granite. A zone of intense shearing and probably of minor faulting cuts thru the spillway to the right of the dam. This zone of weakness, however, probably does not seriously affect the dam structure.

The foundation rock is cut by very prominent zones of shear, and the surface rock is blocky and subject to raveling by action of overflow waters. Spillway protection is therefore essential".

In general the foundation rock may be considered satisfactory.

The map of the Seismological Society of America shows a few geological faults in this part of California, though none of them are in close proximity to the dam.

The records of the State Engineer show clearly that very careful scrutiny was given the foundation for each buttress during the progress of the work. In the bottom of the stream foundations were carried from 4 to 8 feet into bedrock and on the sidewalls of the canyon excavation was carried to depths of from 8 to 21 feet in order to secure good foundations.

Foundation Pressures

The maximum foundation pressure is approximately 20 tons per square foot, and the maximum shear along the base is estimated at

approximately 145 pounds per square inch. There are not excessive stresses. Should the cracks in the buttresses referred to later, extend so as to pass through the arch rings and the base, a different distribution of the foundation pressure would result, with a maximum pressure of about 28 tons per square foot, which the foundation would safely stand.

Inspection of the footings of the buttresses after ten years of service, and of the exposed rock at the dam site, show that the foundation is amply strong to support the structure.

Buttresses

Stresses in the Buttresses

The buttress walls are high and slender, unreinforced and tied together by widely separated concrete struts. Without proper bracing the walls might be subject to excessive deflection. That the struts have been effective in preventing excessive deflection is indicated by the fact that the structure has served successfully for about ten years, during which time it was once subjected to maximum loading.

Analyses of the buttresses when considered as walls show unit stresses which are not excessive.

If considered as columns the determination of additional bending stresses is subject to assumption and conjecture. They would, however, tend to increase the direct stresses. Modern practice would require that the buttresses be adequately reinforced and braced. We believe, however, that the buttresses will continue to carry the loads, provided the structure is not subjected to the shock incident to an earthquake of major intensity or that resulting from overtopping.

Cracks in the Buttresses

Cracks in the buttresses are reported to have occurred prior to storage of water in the reservoir, and frequent micrometer measurements of the changes in the widths of the cracks have been taken since October, 1922, up to the time of our examination of the dam.

The cracks have been mapped and are shown on diagrams included in Mr. Brahtz's report. A typical crack is shown on Plate 2 of our report. The cracks generally extend upward from the roof of the gallery archway toward the arch rings in a direction about at right angles to them, and downward from the floor of the gallery foot walk about vertically toward the foundation. The cracks have a maximum width at the gallery. They gradually decrease in width in either direction from the gallery, and end before reaching the arch rings at the upper end and the foundation at the lower end, with the exception of one crack the upper end of which extends for a short distance into the arch ring.

We have plotted on separate graphs the micrometer measurements of the changes in the horizontal and vertical components of the width of the cracks, (Plates 3 to 7), and have studied the factors which might have a tendency to affect the changes, including the records of temperatures taken in the buttresses and the variations in water level in the reservoir.

From the separate graphs of the cracks we have prepared a composite generalized graph for the horizontal and vertical components, showing the general behavior of the cracks during the period of measurements. (Plates 8 and 9).

The graphs show that the cracks obtain their maximum widths during the winter and their minimum widths during the late summer. There is a gradual small increase in the width of the cracks from one season as compared to that of the preceding season. The average annual permanent increase in the vertical and horizontal components of the width of cracks is each approximately one one-hundredth of an inch.

We find that the variations in water pressures on the dam have no relation to the variations in the width of the cracks, and the study of stresses in the buttresses shows no loading stresses which could have produced the cracks. We conclude that the cracks themselves as well as the variations in their widths are due to the expansion and contraction resulting from changes in temperature and moisture conditions together with shrinkage occurring during the period of hardening of the concrete. The permanent increase in width is due to the long time continued shrinkage of concrete in the process of hardening, and the water pressure transmitted to the portion of the buttress lying above the crack as this pressure favors the widening of the crack during the period of contraction in the concrete and resists narrowing of the crack during the subsequent period of expansion of the concrete. In addition closure of the cracks may be mechanically restricted by the lodgment of dust or small particles of foreign matter.

The presence of the cracks in the buttresses does not affect their stability. Should these cracks in the future be so enlarged as to extend upward and completely through the arch rings and downward to the foundations so as to completely separate the upper portion from the lower portion of the dam, we would have the condition assumed by Mr. Brahtz in his very thorough analysis.

Possible Effect of Cracks on Buttress Stresses

Mr. Brahtz has made a comprehensive study of the stresses which would result on several horizontal sections of the buttresses at different elevations for two possible conditions which may result from the cracks. In one case he assumes that the cracks extend upward clear through the arch barrel and downward to the foundation. In the other case he assumes that the arch barrel at the extension of the cracks would resist a tension of approximately 50 pounds per square inch. He obtains the following results for the properties and stresses on the horizontal section at Elevation 200, at the base of the tallest buttress:

Properties and stresses for a horizontal section at the base of tallest buttress

1. Assuming that the cracks extend through the arch barrels and to the foundation:

(a) For the portion of the dam west of the crack:

Safety factor against overturning = 1.485
Coefficient of sliding = .582
Maximum foundation pressure at heel = 27.6 tons per sq.ft.

(b) For the portion of the dam east of the crack:

Safety factor against overturning = 3.22
Coefficient of sliding = .822
Maximum foundation pressure at crack = 18.7 tons per sq.ft.

2. Assuming that the concrete of the arch barrel at the extension of the cracks resists 50 pounds per square inch tension:

(a) For the portion of the dam west of the crack:

Safety factor against overturning = 1.542
Coefficient of sliding = .522
Maximum foundation pressure at heel = 24 tons per sq.ft.

(b) For the portion of the dam east of the crack:

Safety factor against overturning = 2.71
Coefficient of sliding = .863
Maximum foundation pressure at crack = 21 tons per sq.ft.

The above values may be compared with the following values obtained for the buttress acting as a whole with no cracks:

Safety factor against overturning = 3.22
Coefficient of sliding = .71
Maximum foundation pressure at heel = 19.3 tons per sq.ft.

This analysis, together with the studies of Mr. Dewell, show that while the distribution of the foundation pressures would be changed, the maximum pressures resulting therefrom would not be excessive.

Arches

Mr. Brahtz has also made a careful detailed analysis of the stresses in the arch rings at several elevations. Mr. Dewell finds his results correct, except that Mr. Brahtz obtained a maximum total compressive stress in the concrete for the arch ring at elevation 205 of 1203 pounds per square inch, apparently based on the assumption that the steel reinforcing could not take the tensile stresses. Mr. Dewell finds that the steel is adequate and that, including its effect, the maximum compression in the concrete is 910 pounds per square inch and the tensile stress in the steel is less than 14000 pounds per square inch.

The above stresses include the additional stress due to a fall in temperature of 15°. Without this the maximum compressive stress in the concrete is approximately 600 pounds per square inch.

The arch ring section at Elevation 205 is about 5 feet above the base of the arch at the lowest point of the dam. The additional five feet depth of water would give slightly larger stresses for the lowest arch ring, if the cantilever action resulting from the connection of the base of the arches with the foundation is neglected. The reduction in arch stresses due to this cantilever action warrants the conclusion that the maximum stresses are those obtained for the arch ring at Elevation 205.

In the computation of these stresses no allowance was made for the effect of the increase of moisture content in the concrete, which would tend to offset the stresses due to a fall in temperature. Lack of data regarding the distribution in moisture content and its expansive action do not justify detailed computation of stresses resulting therefrom, but it is known that they are of considerable magnitude and probably more than offset the stresses due to fall in temperature.

A consideration of all factors producing the stresses leads us to the conclusion that the arches are safe.

Effect of Possible Earthquake on Dam

The structure was subject to an earthquake shock of moderate intensity in 1918 soon after its completion, and was not damaged thereby.

Mr. H. D. Dewell, after considering the possible effects of a major earthquake, states as follows:

"Computations of actual stresses likely to be induced in the various structural units comprising the Lake Hodges Dam should be regarded as qualitative rather than as possessing any quantitative accuracy.

An earthquake shock of destructive intensity, with a direction up and down stream, might crack the arch barrels, but would probably not destroy them. The principal danger would be in the additional stresses induced in the high unreinforced buttress walls. These would undoubtedly be further cracked; they might be expected to fail, due to lack of reinforcing and proper bracing.

A shock of major intensity, with a direction perpendicular to the line of the stream bed, or parallel to the face of the dam would, in my opinion, be likely to cause more damage. Such a shock would cause the buttress to vibrate, and tear out the light and widely spaced bracing. These buttresses are of varying heights; consequently they will vibrate with different periods, and differential motion must result, unless the bracing is of such strength as to cause them to act together. The existing bracing has no such strength, and in my opinion would probably be torn out."

He recommends that to resist an earthquake of a major intensity, the buttresses should be braced crosswise of the stream by ties made capable of resisting bending stresses. The findings and recommendations of Mr. Dewell apply to major earthquakes.

The records show that San Diego was severely shaken in 1812 and again in 1857. There is reason to believe that the Lake Hodges Dam will doubtless be subjected at some time in the future to earthquakes of major intensities. Therefore it would be prudent to reinforce the dam against such a contingency by thorough bracing of the buttresses in a manner similar to that suggested by Mr. Dewell.

Flood Flows, Spillway Capacity, and Spillway Improvements

Maximum Flood Since Completion of Dam in 1917

The maximum flood since 1917 is that of February, 1927, This was a major flood and was over three times the 1922 flood, the next largest since 1917.

The hydrograph of the 1927 flood prepared by F. E. Green gives the discharge of the San Dieguito River, at the Lake Hodges Spillway at intervals during the period from February 14th to 17th, 1927. The maximum crest discharge through the spillway was 36,000 second feet.

To compare this flood with that of January, 1916, which is the maximum on record, it is necessary to compute the February, 1927, flood flow as it would have been without the regulating effect on the crest flow produced by storage. This was done by computing the inflow into the reservoir from the outflow at the spillway, using the storage capacity curve of the reservoir and the spillway discharge curve, prepared by I. F. Judy, from F. E. Green data. (Plate 10). The results are given in Table 1. This table shows a crest flow, unregulated by storage of 50,000 second feet.

Table No. 1

Flood flow Discharge of San Dieguito River at Lake Hodges
in February 1927 without and with effect of storage

<u>Date</u>	<u>Time</u>	<u>Outflow Discharge in c. ft.</u>	<u>Re serve Gauge Height</u>	<u>Outflow mean discharge in sec. ft. for mean time of period</u>	<u>Computed inflow discharge without storage for mean time of period</u>
Feb. 15	noon	5,200	117.55		
	2 pm	5,300	117.60	5,250	6,500
	3	6,100	117.85	5,700	8,100
	4	7,500	118.35	6,800	20,000
	5	9,000	118.90	8,250	16,700
	6	10,000	119.20	9,500	19,000
	7	14,400	120.60	12,200	35,000
	8	14,800	120.70	14,600	17,000
	9	15,200	120.80	15,000	17,400
	10	15,600	120.90	15,400	16,500
	10:45	15,900	121.00	15,750	35,000
	11	16,300	121.10	16,100	26,500
	12	18,500	121.65	17,400	19,800
	1 AM	21,100	122.35	19,800	35,500
	1:30	22,500	122.75	21,800	17,000
	3	23,000	122.85	22,750	36,500
	4	24,500	133.20	23,750	33,500
	5	26,800	123.80	25,650	33,000
	6	28,800	124.30	27,800	41,200
	7	30,600	124.75	29,700	37,000
	8	33,000	125.30	31,800	47,500
	9	34,700	125.70	33,850	41,000
	9:30	36,000	126.00	35,350	50,000
	11	35,000	125.80	35,500	32,500
	12:30	36,000	126.00	35,500	40,000

Maximum Flood on record

The maximum record flood flow is that of January, 1916. Information is given for this and other streams in Southern California in the report on water supply paper 426 of the United States Geological Survey on Southern California floods of January, 1916.

This 1916 Flood was the most severe in San Diego County. The maximum crest discharge on the San Diego River was 72,100 second feet on January 27th between 1:00 and 2:00 p.m. It was the result of extraordinary precipitation on the entire 300 square miles of watershed during January 26th and 27th, following a period of very large precipitation from January 14th to the 20th, which itself caused a crest discharge on January 18th of 37,600 second feet.

When the maximum discharge on the San Diego River was 72,100 second feet, this was undoubtedly somewhat larger than would have occurred if it had not been for the flood wave created by the release of flood water held back by the approach embankment of the Bernardo bridge, through the washin of this bridge.

The discharge at this point during the flood is the mean flow for the period between these times as obtained from data in the United States Geological Survey file in columns 2 and 3 of Table 2.

Table No. 2

Flood Flow Discharge of San Dieguito River at Lake Hodges, January, 1916.

<u>Date</u>	<u>Time</u>	<u>Discharge unregulated by storage</u>		<u>Discharge if regulated by storage</u>			
		<u>For time given</u>	<u>Mean for period</u>	<u>With present spillway Gage Ht.</u>	<u>Discharge</u>	<u>With improved spillway Gage Ht.</u>	<u>Discharge</u>
Jan. 27	0:00 a.m.	2,700 sec.ft.		116.8	2,700	116.8	2,700
	6:00 a.m.	6,000	4,350	117.0	3,300	117.0	3,300
	12:00 a.m.	52,400	29,200	122.1	20,000	122.1	22,000
	1:00 p.m.	70,500	61,450	124.1	28,000	123.9	31,200
	3:00 p.m.	70,500	70,500	127.1	41,000	126.55	45,800
	5:00 p.m.	65,500	68,000	128.9	50,000	128.0	54,000
	12:00 p.m.	35,700	50,600	128.95	50,400	127.4	50,400
Jan. 28	6:00 a.m.	17,700	26,700	125.4	33,600	124.2	32,000

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Comparison of 1916 and 1927 floods

Although the 1916 flood produced a crest flow very much in excess of that of the 1927 flood, the daily discharge for the day of maximum flow as well as the aggregate flood flow for both floods were nearly the same, as indicated by the following data:

Daily Discharge of San Dieguito River at Hodges
in Acre Feet

2-15-27	18,486	1-26-16	5,850
2-16-27	73,529	1-27-16	73,800
2-17-27	11,706	1-28-16	29,770
2-18-17	<u>2,777</u>	1-29-16	<u>9,420</u>
Total for 4 days	106,498		118,840

The following crest flow data on the two main tributaries, and the flow of the main stream at Hodges show that a very large rate of run-off was obtained from all parts of the watershed, both in 1916 and 1927.

January 27, 1916

	<u>Santa Ysabel near Ramona</u>	<u>Santa Maria Creek</u>	<u>Santa Ysabel and Santa Maria</u>	<u>San Dieguito at Hodges</u>
Crest flow in second feet	28,400	7,140	35,540	72,100
Area of watershed in square miles	110	57.3	167.3	300
Crest flow in second feet per square mile	258	124	212	240

February 16, 1927

Crest flow in second feet	19,401	6,318	25,719	50,000
Area of watershed in square miles	110	57.3	167.3	300
Crest flow in second feet per square mile	176	110	149	167

Water Supply Paper No. 426 of United States Geological Survey, on Page 12, gives the daily rainfall for a large number of stations in the San Dieguito basin, during the storm which produced the 1916 flood. These data show that the extraordinary precipitation was quite uniformly distributed over the entire 300 square miles of the watershed, and explain, in part at least, the large rate of run-off from all parts of the watershed.

Other Major Floods.

Water Supply Paper No. 426, on Page 35, states: "To determine whether the flood of 1916 was more or less severe than previous floods in Southern California, a search was made of the early records and many old residents of the County were interviewed." The results of this investigation are given on Pages 35 to 40 of the Paper, and while they are necessarily based on data and statements, which are not and cannot be substantiated by measurements of flow, they are the best obtainable. From this information major floods occurred on the San Dieguito River, probably in the following order of magnitude: 1916, 1862, 1825, 1833, 1884, 1891, 1927 and 1895.

A flood with a crest flow of that of 1927 or about 50,000 second feet, has a frequency of about once in fifteen years; and a flood with a crest flow of that of 1916 or about 70,000 second feet has a frequency of about once in one hundred years.

From a consideration of the above data, of flood frequency curves derived in connection with the Investigation of Water Resources of California, by the State Department of Public Works, Division of Engineering and Irrigation, and of flood flow data and equations, we believe that floods in excess of that of 1916 will occur at rare intervals, and that a flood having a crest of approximately 90,000 second feet may occur with a frequency of once in five hundred to one thousand years.

To insure a proper degree of security against the dam being overtopped, the spillway should be improved to discharge the outflow from a flood of this magnitude.

Capacity of Spillway

The best information on the present capacity of the spillway is the Spillway Rating Curve drawn by I.F. Judy, which is reported by J.W. Williams of the Bureau of Water Supply of the City of San Diego, to be based upon observations and computations by F.E. Green. From this curve the rates of discharge for different gauge heights, and the corresponding values of C in the weir formula $Q=CLH^{3/2}$ for a value of $L=350$, are as follows:

<u>Gauge El. of Water surface</u>	<u>Height Head on spillway crest</u>	<u>Discharge in cubic feet per second</u>	<u>Corresponding value of C in $Q=CLH^{3/2}$</u>
116	1	1,280	3.66
117	2	3,640	3.68
118	3	6,530	3.62
119	4	9,061	3.28
120	5	12,500	3.20
121	6	16,000	3.11
122	7	19,880	3.06
123	8	23,500	2.99
124	9	27,620	2.93
125	10	31,845	2.88
126	11	36,150	2.84
127	12	40,490	2.78
128	13	45,200	2.76
129	14	51,000	2.76
130	15	56,000	2.75

The above results indicate that for gauge heights in excess of 3 feet on the crest of the spillway, the conditions for maximum discharge become progressively unfavorable with an increase in gauge height. This is due largely to the very poor condition of the channel of approach to the spillway. It is our opinion that the spillway can be improved so as to give a coefficient of C in the weir formula equal to 3.30.

Crest flow at spillway for 1916 flood

The outflow or flow at the spillway has been computed for the spillway in its present condition, and also for the spillway improved to give a coefficient of C in the weir formula equal to 3.30. The inflow and the outflow for both conditions of spillway are given in Table 2. The results show the following:

1. For the present spillway the crest flow is reduced by storage to a maximum outflow of 50,400 second feet, with a gauge height of 128.95 feet, or a water level 1.05 feet below the top of the dam.
2. For the improved spillway the crest flow is reduced to 54,000 second feet, with a gauge height of 128.0 feet of water level 2.0 feet below the top of the dam.

Crest Flow of Spillway for a Crest Inflow of 90,000 Second Feet

Computations were made for a flood of the same characteristics as that of 1916, but with the quantities for the periods of time during the flood increased in the proportion of 90,000 to 70,500. The results for the improved spillway are given in Table 3, and show that the inflow crest is reduced from 90,000 second feet to 67,500 second feet, with a corresponding gauge height of 130.05 feet, which brings the maximum water level practically to the top of the dam.

Table No. 3

Flood Flow Discharge of San Dieguito River at Lake Hodges
for a flood crest of 90,000 second feet with same
characteristics as that of the 1916 flood

From computations based on Spillway Discharge $Q = 3.30 LH^{3/2} (L=350)$

<u>Date</u>	<u>Time</u>	<u>Discharge unregulated</u>		<u>Discharge regulated</u>	
		<u>For time given</u>	<u>Mean for period</u>	<u>Gauge Height</u>	<u>Dis-charge</u>
Jan. 27	0:00 a.m.	3,400		117.1	3,400
	0:00 a.m.	7,700	5,500	117.6	4,800
	12:00 a.m.	67,000	37,300	123.8	30,500
	1:00 p.m.	90,000	78,500	125.55	39,800
	3:00 p.m.	90,000	90,000	128.7	59,000
	5:00 p.m.	83,600	86,000	130.05	67,500
	12:00 p.m.	45,600	64,600	129.8	66,700
Jan. 28	6:00 a.m.	22,600	34,100	125.6	52,750

Spillway improvements

The necessity for spillway improvement has been referred to above.

The spillway crest consists of 175 feet of ogee rollway crest continued with a broad crest about 35 feet wide and 185 feet in length, constructed on a bench excavated into the side hill at the north end of the dam. The approach to the northerly 10 feet of the shore end of the broad crest spillway is essentially obstructed by the end or abutment wall; so that the total effective length of the spillway crest is about 350 feet.

The conditions which are unfavorable to maximum discharge over the spillway are:

1. A rocky spur upstream from the north end of the spillway projects out into the reservoir toward the spillway and dam so as to very materially contract the channel approach toward the spillway.
2. The flat crest spillway extension is excessively wide and does not have a smooth sloping floor approaching the crest.

3. The spillway channel downstream from the northerly end of the spillway may not allow the water to escape freely.

The only topographic map of the spillway area is shown by Plate 2. It is not sufficiently detailed or comprehensive to specify in detail the work which should be done to form an adequate spillway.

In general the work necessary to increase the capacity of the spillway includes the following:

1. Remove the rocky spur and excavate enough material to form a straight, unobstructed channel of approach of sufficient depth and width, gradually decreasing in cross section from the body of the reservoir to the spillway, with no projecting points.
2. Shape the floor of this upstream channel where it joins the upstream edge of the broad crested weir, to relatively smooth surface on a slope of about 1 to 1, rounding off the connection between the two.
3. Remove any obstruction in the upper portion of the downstream spillway channel, which may prevent a free getaway of the flood waters discharged over the spillway.

After the above improvement work has been done, the spillway should be rated when the opportunities will make it possible to do so. We believe that it will be feasible to increase its capacity to at least that used in the computations referred to above.

In addition to the work necessary to increase the spillway capacity, it is necessary to protect the downstream channel of the spillway against the displacement and washing away of the loose or fractured rocks forming the bed of the spillway. The 1927 flood demonstrated that relatively large blocks of rocks can be displaced and carried away. Considerable repair and protection work was done following this flood.

The channel is now apparently able to resist the action of relatively large floods. No doubt floods of equal or larger magnitude will cause the washing away of some additional material. This action should be watched, and following such floods, holes and cracks should be filled with concrete until a stable condition is reached.

Effect of Sutherland Reservoir on Flood Flows at Lake Hodges

Because of the uncertainty of the completion of the Sutherland Dam, we have not considered the possible effect of the storage of this reservoir. Should this dam be constructed, it is probable that the storage created thereby would reduce the magnitude of the flood crest at Lake Hodges. The extent of the reduction can only be determined by detailed computations. That it would probably be material is indicated by the fact that the crest discharge of Santa Ysabel Creek at the Sutherland site on January 27, 1916, was 21,000 second feet, or approximately 30 per cent of the total crest discharge at Lake Hodges.

Conclusions

1. Lake Hodges dam is safe to carry the loads, excepting in the case of a major earthquake, provided that the spillway is improved to prevent overtopping.
2. Earthquakes of major intensity occurred in 1812 and again in 1857. There is reason to believe that Lake Hodges dam will at some future time doubtless be subjected to similar earthquakes. To resist such earthquakes the dam must be reinforced by thorough bracing of the buttresses.
3. The spillway capacity is barely sufficient to discharge a flood of the magnitude of that of 1916. While this flood is the maximum since the time stream flow measurements have been made, and floods of this magnitude would probably not recur with a frequency greater than about once in one hundred years, floods of greater intensities will occur.

We recommend that in order to adequately and safely discharge flood flows of the magnitude of that of 1916, and to prevent overtopping of the dam by larger floods, the spillway be improved in the general manner suggested by us.

Respectfully submitted,

(Signed) F.C.Herrmann

" B.A.Etcheverry

" A. Kempkey

6-11-32

P

Lake Hodges Dam
San Diego County
California.

Report
to the
State Engineer of California
on
Recommended Bracing of Dam

September 19, 1929

Submitted by

Henry D. Dewell
Consulting
Civil Engineer
San Francisco
California

September 19, 1929

Mr. Edward Hyatt, Jr.,
State Engineer
Sacramento, California

Subject: Lake Hodges Dam

Dear Sir:-

On August 21, 1929 you requested me to prepare and set forth the principles which should govern the design of a system of bracing to properly reinforce the Lake Hodges Dam against earthquake. At the same time, you handed to me for examination a drawing showing details of a proposed system of reinforcement of the present buttresses of the dam, as prepared under the direction of Mr. H. N. Savage, Engineer in Charge, Bureau of Water Development, City of San Diego, California. This drawing is marked Sheet 1 of 3, File No. 2137-D1, WD-174, bears the title

"Hodges Dam Improvement
Additional Lateral Bracing
of Buttresses",

and is under date of June 1929.

I have examined this drawings, and conclude that the reinforcement of the dam shown thereon is not sufficient to give proper safety against collapse of the dam during a major earthquake, although such reinforcing would materially stiffen the buttresses.

In my opinion, it is essential for proper stability of the dam during a major earthquake, that the buttresses be stiffened laterally by a system of horizontal and vertical members which will make the ratio of unsupported

height of buttress to thickness of buttress a relatively small quantity.

I present, then, in what follows detailed specifications for the design of a system of bracing for the Lake Hodges dam. The matters therein have been discussed with Messrs. McCherry, Herrmann and Kempkey.

Proposed Detailed Specifications
Covering the Design of Lateral Bracing
for the Buttresses of the Lake Hodges Dam

1. The buttresses shall be stiffened laterally by a system of horizontal and vertical members to be constructed in pairs; one on each side of the buttress.

2. The vertical spacing of these horizontal members shall not exceed from 10 to 16 x the average thickness of the buttress between such horizontal members.

3. The horizontal spacing of these vertical members shall not exceed from 10 to 16 x the average thickness of the buttress between such vertical members.

4. The present pilaster along the downstream edge of the buttress shall be reinforced by an inclined member which shall be constructed with the purpose of making it act integrally with the present pilaster. This combined, or reinforced pilaster, shall be considered to be similar to the vertical member in (1) (2) and (3).

5. The vertical and horizontal members specified above, together with the inclined member of (4) shall be considered to form structural frames on each buttress. Each

structural frame shall be designed to resist a total horizontal force acting in a direction parallel to the face of the buttress and equal to one tenth of the sum of the weights of the structural frame, the buttress and the arched barrel of one bay. The distribution of this total force shall be in proportion to the actual distributions of the weights themselves, but shall be considered to act at the panel points of the frame. All members of this structural frame shall be designed to resist the direct loads, shears, and bending moments brought upon them by the assumed forces, under the assumption that such members act independently of the buttress.

6. The vertical and horizontal members of the structural frame shall be designed as vertical and horizontal beams respectively carrying horizontal loads equal to one tenth the weight of the proper proportion of the panels which they subtend. Each of these vertical and horizontal beams shall be considered to be simple beams, i.e., not restrained at their ends, and the horizontal loads coming upon them shall be assumed to be triangular in shape.

7. The horizontal load coming upon each pair of horizontal and vertical members shall be assumed to be divided equally between the two members forming each pair.

8. The maximum amount of longitudinal steel found necessary in any section of any vertical, horizontal and inclined member of such structural frame shall be made continuous throughout the length of such members and lapped 50 diameters with the steel from adjoining spans.

9. The buttresses shall be supported laterally, i.e. in a direction perpendicular to their faces, by a system of continuous struts which shall extend from canyon wall ^{to canyon wall}. These lines of struts shall be placed at the panel points of the structural frames referred to above, and shall be provided with footings at their ends to properly distribute their loads to the sides of the canyon.

10. Each buttress shall be assumed to deliver loads to each line of struts equal to the weight of that portion of the buttress and structural frame tributary to the respective lines of struts. In general, such tributary portion of the buttress and structural frame is equal in area to the panel or bay which such line of struts supports.

11. The unit stresses to be allowed in any of this work shall be not greater than 150% of the unit stresses allowed by the Joint Standard Building Code, taking into account the probable ultimate strength of the concrete of which the reinforcing members are constructed.

I believe and recommend that the installation of this bracing be done by means of the cement gun. In no other way, in my opinion, can a satisfactory bond between the new work and the old work be assured. The old work should be chipped with air hammers over those surfaces to which are to be attached the new concrete. I believe that it will be found that cost of the installation of the concrete by means of the cement gun will not be much, if any, in excess of an installation by pouring, and will unquestionably be much

more effective. Another advantage of the use of the cement gun is that this framework may be built in short sections, allowing each section sufficient time to take its initial and major shrinkage before concreting adjoining sections. I have used such method of construction and have found that shrinkage cracks are practically eliminated.

These specifications, if consistently followed out in the actual design of all the details, and carefully installed, will, in my opinion, give the proper stability to the dam to resist such earthquakes to which it may be subjected under reasonable expectations.

In order to illustrate the preceding recommendations, I append hereto a drawing entitled "Lake Hodges Dam: Drawing illustrating Recommended Methods of Reinforcing Dam".

Respectfully submitted,

Henry D. Dewell (Signature)

Consulting Civil Engineer

September 19, 1929

Mr. Edward Hyatt, Jr.,
State Engineer,
Sacramento, California

Subject: Lake Hodges Dam

Dear Sir:-

At the conference held in Mr. Herrmann's office, on August 21, there being present yourself, your Assistant Mr. W. A. Perkins, Mr. Etcheverry, Mr. Herrmann and myself, the strength of the Lake Hodges' Dam and methods of reinforcing this dam were under discussion.

Mr. Perkins presented a report to the State Engineer made by himself and Mr. W. H. Holmes and under date of August 1929. There was also presented a blueprint showing proposed reinforcing of the buttresses of the dam submitted by Mr. H. N. Savage, this drawing being marked Sheet 1 of 3, File No. 2137-D1, WD-174. Messrs. Perkins and Holmes presented in their report a proposed method of strengthening the dam. The proposed reinforcement consisted of two diaphragms or cross walls, presumably continuous throughout the length of the structure, and an enlargement of the pilasters forming the downstream edge of the buttresses. Mr. Savage's method of reinforcing the dam consists of a series of continuous horizontal struts between the buttresses and the side walls of the canyon.

The results of the discussion, following an examination of the report of Messrs. Perkins and Holmes and of the drawing submitted by Mr. Savage, were the decisions (1) that the details

of reinforcing submitted by Mr. Savage were not satisfactory, (2) that the details proposed by Messrs. Perkins and Holmes were superior to those of Mr. Savage (3) that the desirable method of reinforcing the buttresses should include the stiffening of the buttresses in a direction parallel to the crest of the dam by a system of bracing which would divide the surface of the buttresses into rectangular panels, (4) that it was not the province of the State Engineer to design the details of such bracing, but rather to indicate the type of framing which would be suitable and to set forth the specifications by which the arrangement and size and details of such reinforcing must be determined, (5) that I be requested to draw up such specifications, and (6) that in the preparation of such specifications the thought should be kept in mind that the requirements to be set forth in the case of the Lake Hodges dam might be used as a precedent for the strengthening of other dams.

The discussion leading up to these decisions brought out the point that since our previous analysis of this dam had indicated that the chief danger to its stability lies in the effect of earthquake shocks, the requirements for reinforcing should therefore be based primarily on considerations of the probable action of the dam during an earthquake. Nevertheless, it was clearly understood that the dam as it now stands is not entirely satisfactory from a structural standpoint, even leaving aside the question of probable earthquakes. Mention has already been made of the fact that Messrs. Perkins and Holmes, in their report, proposed to reinforce the downstream pilasters of the buttresses. They believe that there is some danger of the cracks,

now existing in certain buttresses, extending through the arch barrels and thus separating the dam into two parts. In such an eventuality, the present maximum foundation pressures would be materially increased. There would be an unfavourable readjustment of the present stresses in the structure. The effect of the proposed enlargement of the downstream pilasters would be to shift, in a downstream direction, the centroid of the section of buttresses and arch barrels which now resists the overturning moment of the impounded water, and also to increase the effective section modulus of this resisting section. This is a point of importance. Such strengthening of the downstream edge of the buttress is advisable.

In accordance, then, with Decision #5 listed above, and in accordance with your verbal instructions, given me at the conference of August 21, I have given further and detailed study to the problem of determining the best method of reinforcing the dam against failure by earthquake. I present to you herewith the results of this study and set forth for your consideration the requirements to be followed in drawing up plans for such reinforcing. I also present, in a separate letter, the detailed specifications for reinforcing the dam.

As a preliminary to this discussion and as a background to what follows, I repeat the five paragraphs ending my report to Messrs. Etcheverry, Herrmann and Kempkey, under date of March 11, 1929. These are as follows:

1. The arches are safe against failure from the ordinary loads of dead weight and water. They are reasonably safe against failure from earthquake, but might be severely cracked.

2. The buttresses, as high unreinforced walls, will probably continue to carry their loads of dead weight and water. Their factor of safety is not as large as the importance of the dam warrants. Their effectiveness, in this respect, is definitely decreased by the cracks which exist.
3. The present cracks are probably almost entirely due to shrinkage of the concrete, and to temperature changes. Except for weakening the effectiveness of the lateral bracing, these cracks are not found to be dangerous.
4. The buttresses, as they are now braced, are not sufficiently strong to withstand a destructive earthquake. It seems probable that such an earthquake would cause them to collapse.
5. The recommendation is made that these buttresses be braced; primarily from the standpoint of earthquake resistance, but also to give the dam a safety factor commensurate with other important structures upon whose stability the lives of many people depend.

Reference to these five paragraphs indicate that I do not consider the dam in its present condition a satisfactory structure. Although the computed stresses due to the weight of the structure itself, water pressure, and changes of temperature indicate that the dam is safe for these conditions, the assumption must be made (1) that the present bracing between buttresses satisfactorily stiffen such buttresses, and (2) that these buttresses, unreinforced with steel as they are and with the probability that they contain construction or pouring joints which form planes of weakness, act as monolithic walls. No conclusions on the safety of the dam should be based solely on stresses found by computation. The quality of the construction is a most important factor. The truth of this statement is obvious and its recitation may appear to be a platitude. Nevertheless, the possibilities

that the quality of the concrete in the dam is not of the best, that there may exist, particularly in the buttresses, construction joints which are planes of weakness due to laitance, and that the details of reinforcing steel tying arches and bracing struts into the buttresses, as such were actually constructed, may be much weaker than is indicated on the plans have influenced the details of my specifications for strengthening the dam. In other words, some of the details of such specifications may not appear to be justified when judged solely by the requirements of stresses to be brought upon the dam by possible earthquakes.

The fundamental principle on which I have worked is that the whole structure should act in an earthquake as a unit insofar as this is possible. The danger in the present structure, as I have pointed out in my previous report, is that the buttresses, varying in height as they do and but lightly tied together as they are, will vibrate during a severe earthquake with widely varying periods, and thus rupture and tear apart from the arches, resulting in failure of the dam. This action would be most likely to occur with the direction of vibration across the stream, or normal to the faces of the buttresses. In such discussions of the effect of earthquakes on dams as have come to my notice, the writers have devoted almost, if not all of, their entire attention to the case in which the force of the earthquake is acting normal to the face of the dam. When considering a dam of gravity section, the latter case is probably the most severe. On the other hand, the Lake Hodges Dam, and probably most of the multiple arched dams, are weakest against an earthquake the force of which is exerted across the stream bed. My investigation of the Lake

Hodges dam, considering the force of the earthquake to be exerted normal to the face of the dam, or up and down stream, indicates that the dam is safe for this condition, provided that it is now safe, with a reasonable factor of safety, for the dead loads and water loads coming upon it. In other words, I find that for this case, the increased stresses in the buttresses are very small. This is to be expected, since the multiple arched dam is essentially a framed structure; and, if properly designed and constructed as a framed structure, is of great strength compared to its weight.

Bearing in mind the fact that the buttresses of the Lake Hodges dam are of unreinforced concrete, of a quality of concrete known to be inferior to the concrete in the arched barrels, it seems fundamentally sound to set forth the requirement that these buttresses be braced laterally by a structural framework that will assure that they will be subjected to only very small flexure during an earthquake acting in a direction across the stream. To accomplish this result, it seems necessary that the side faces of the buttresses should be supported both in a horizontal and vertical direction by continuous horizontal and vertical supports rigidly attached to the buttresses, and that there then be installed a continuous series of horizontal struts which will extend from canyon wall to canyon wall. In studying this subject in detail, I have laid out to scale several systems of bracing that have suggested themselves to my mind. I have concluded that continuous lines of struts are advisable. If only alternate pairs of buttresses were to be braced, each pair of buttresses thus

braced must act as a vertical beam, transmitting the horizontal loads due to the earthquake to the foundation at the bottom and to the plane of the arched barrels at the top, respectively. Unless these "braced piers" were to be stiffened with diagonal members, the bending stresses in the horizontal members thereof, would be very great. Diagonal members, on the other hand, would necessarily be of great length and difficult to install. A further and very important consideration is the ability of the water face of the dam, consisting of a succession of arches, to take care of such loads and transmit them to the canyon walls. Our investigations have shown that these arched barrels cannot take very much increased stresses. These, then, are the reasons that have led me to decide that it is essential that the lateral forces, coming upon the buttresses from an earthquake whose direction of force is across the stream, should be "picked up" at each buttress by a continuous strut and transmitted directly to the side walls of the canyon.

With such a system of continuous struts, the load to be delivered to each line of struts at each buttress is to be taken as a certain fixed proportion of the weight of the "panel" which each line of struts supports. I believe that this proportion should be not less than $1/10$, which corresponds to an earthquake acceleration of 3.2 feet per second per second. It will be obvious that the maximum load to be taken by any portion of one line of struts occurs in the bay immediately adjacent to the side canyon walls, and that the minimum load to be taken will occur on

the center line of dam and will be equal to one half of the maximum load. It will also be obvious that these struts must be designed as unsupported columns, and that they will be subject to a combination of direct stress and cross bending. This combined unit stress must be kept within the allowable safe stress for reinforced concrete. These points will be covered in detail later in this report.

Coming now to the consideration of the vertical and horizontal lines of supports to the buttresses themselves, i.e., those vertical and horizontal members which are parallel to and are attached to the faces of the buttresses, it is essential that these members be of sufficient stiffness to insure that the period of vibration of the buttresses will be very small, and that these members will also divide the faces of the buttresses into panels of rectangular, trapezoidal or triangular shape. A consideration of this phase of the subject indicates that the unsupported height or width of all buttresses, or, in other words, the maximum vertical or horizontal dimensions of such panels, should not be greater than about 10 to 15 x the average thickness of the portion of the buttress included in the panel. These horizontal and vertical members should be designed as beams, with spans equal to the distance between center lines of the continuous struts, to take $1/10$ of the weight of the wall panel. Since these horizontal and vertical members divide the face of the buttress, for the most part, into rectangular panels, each horizontal and vertical member may be designed as a beam carrying one half of the panel load. However, this load is in the nature of a triangular load upon such beam, and the bending moment must be computed accordingly. Further, inasmuch

as it may be possible that one panel of the buttress may tend to move in a direction opposite to that in which an adjoining panel tends to move, these panels should be designed as "simple" beams. It is my opinion that each buttress should be braced by pairs of these vertical and horizontal members, i.e., forming pilasters on each side of each buttress. While this "double" system of horizontal and vertical members is not theoretically necessary, i.e., a set of pilasters on one side may be theoretically sufficient, the "double" construction will provide a better and more certain "grip" on the buttresses than will the single system. In order to assure that these vertical and horizontal members will be of proper size, it seems necessary to specify that each single member or pilaster be designed as a beam to carry the load referred to above. Further, each of these vertical and horizontal members should be designed and constructed with longitudinal steel in each face thereof equal to the maximum required by the theoretical bending moment at any point.

In order that the preceding recommendations may be fully understood I am submitting herewith a drawing showing the proposed system of bracing. On the section of the dam showing an elevation of a buttress wall of maximum height, I have indicated the lines of continuous struts by numbers 1 to 10, inclusive. I have indicated the horizontal beams by the letters "AH" to "FH", inclusive; the "H" indicating that the member is horizontal. I have indicated the vertical beams by the letters "AV" to "FV", inclusive; the letter "V" indicating that the member is vertical.

I have indicated an inclined beam, or what really amounts to a reinforcing of the pilaster on the downstream edge of each buttress, by the letter "AI" to "CI"; the letter "I" indicating inclined. In order that the horizontal and vertical members, e.g., members similar to AH and AV, may have dimensions in a direction parallel to the buttress commensurate with their dimensions normal to the buttress, I recommend that the theoretical framed structure formed by such horizontal vertical and inclined members be designed as a frame sufficient to resist a horizontal force equal to one tenth the weight of the buttress to which they are attached plus one tenth the weight of one arched barrel. The analysis of such framework would presumably be similar to that of the frame of a building resisting wind pressure. Objection may be raised to this assumed action of the frame, inasmuch as the buttress, cracked though it may be, is many times more rigid than the assumed structural frame. Nevertheless the requirement is recommended as necessary to secure the desired minimum sizes of members.

I call particular attention to the line of struts numbered 6, 7 and 9. I believe that these particular struts are most desirable in order to prevent the arched barrels from being overstressed due to the action of an earthquake parallel to the face of the Dam.

At the bottom of the buttress, I have indicated four foundation beams, designated FB1 to FB4, inclusive. These would be designed as a continuous foundation beam to "fix" the ends of Members CI, CV, DV and FV and to distribute their vertical reactions to the soil, without reliance on the buttress walls, themselves.

I recommend that the unit stresses to be allowed in the design of all this bracing be limited to 150% of the usual working stresses for reinforced concrete, and that all details should be in accordance with standard specifications, e.g., those of the Joint Standard Building Code.

Before framing these specifications, I have investigated the probable stresses that will come upon the dam due to a severe earthquake. I have also made rough and approximate computations of the size of the various reinforcing members which I recommend. I have kept in mind certain minimum sizes of reinforcing members which I believe to be desirable and even necessary. The determination of such minimum sizes has been made partly by computations based on an assumed earthquake acceleration which I believe to be reasonable and partly by judgment of relative proportion.

Assuming that the concrete in the reinforcing members will be placed by the cement gun, the ultimate strength of such concrete at 28 days may be taken at about 3500# per square inch. The safe working stresses allowed by the Joint Standard Building Code for this concrete would be 790# per square inch in compression in columns, and 1570# per square inch in flexure, respectively. An increase of 50% for earthquake stresses would give 1180# per square inch in compression and 2300# per square inch in flexure, respectively. Using these unit stresses, the sizes of the struts will be approximately 18" x 24", and the sizes of vertical and horizontal members about 15" x 36".

The buttresses would therefore be reinforced on each side by horizontal and vertical members each of which would be about 15" thick and 36" deep. These sizes seem reasonable for high strength concrete as would be secured by means of the cement gun. These figures will give you a general idea of the sizes of the members which will result from the application of my specifications.

The preceding discussion, then, explains the proposed method of reinforcement. For convenience, I set forth the detailed specifications for design of such reinforcement, which summarizes the discussion given above, in a separate letter herewith.

Respectfully submitted,

Henry D. Dewell (Signature)
Consulting Civil Engineer.

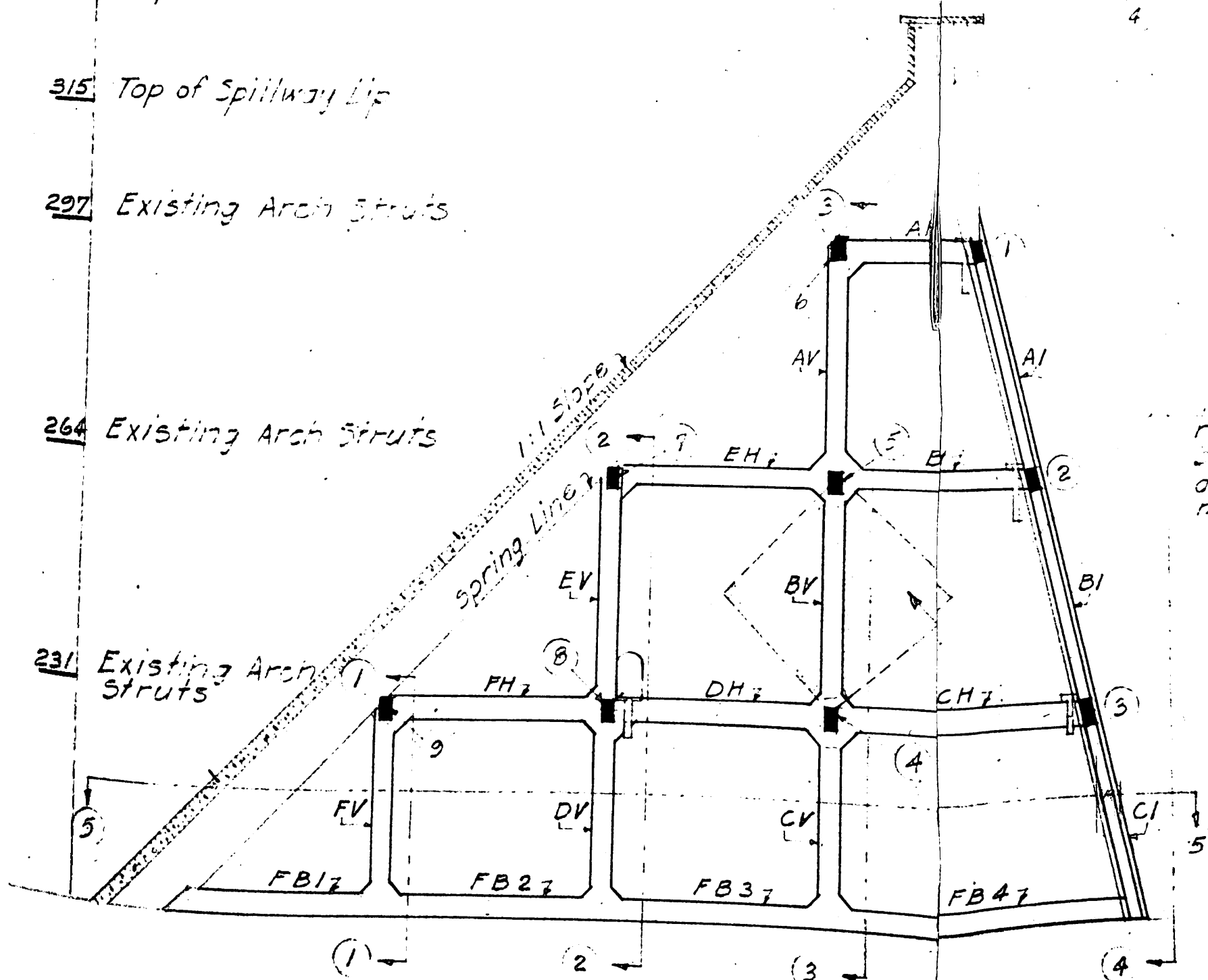
El 330 Top of Dam

315 Top of Spillway Lip

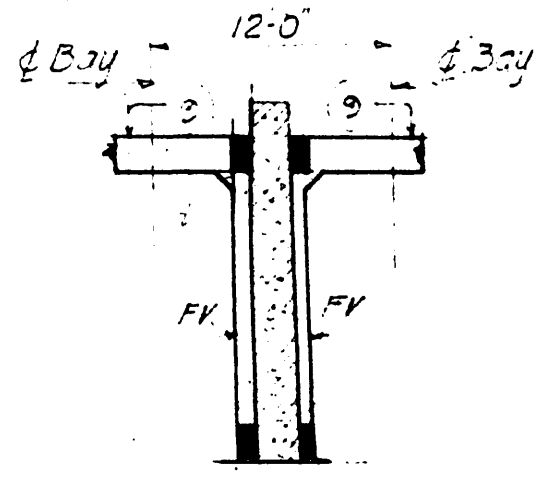
297 Existing Arch Struts

264 Existing Arch Struts

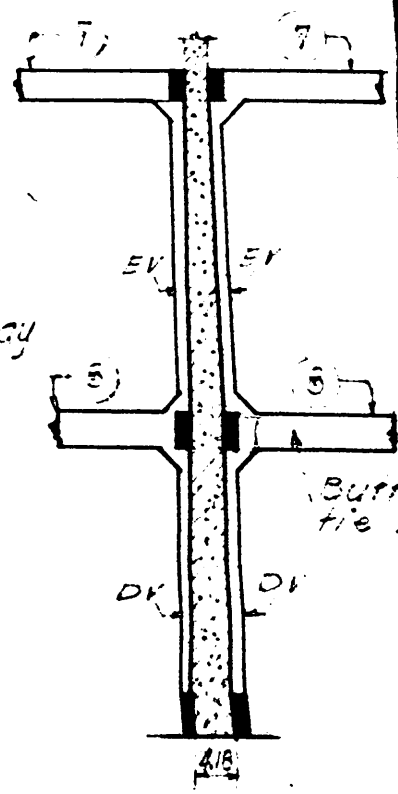
231 Existing Arch Struts



NOTE: Shaded area represents area of buttress to be regarded as a load on vertical member (diagonal) "BY"

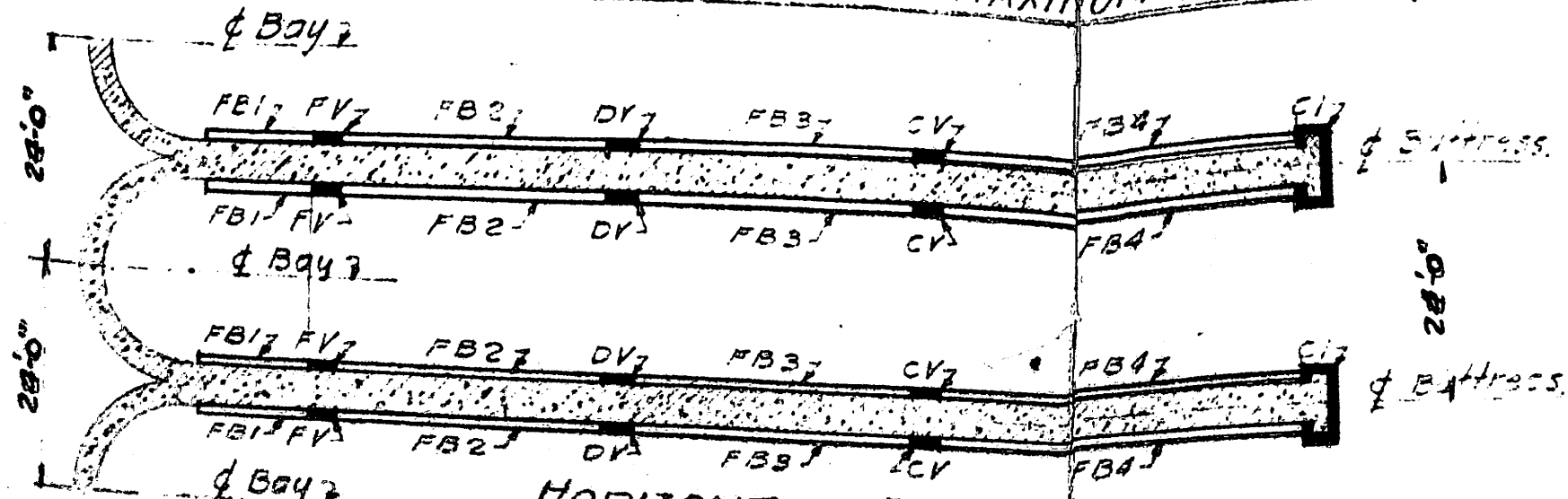


SECTION 1-1

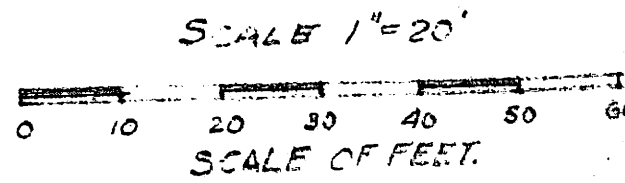


SECTION 2-2

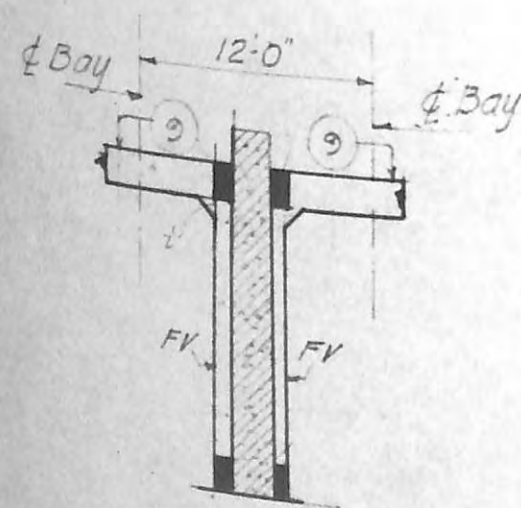
ELEVATION OF BUTTRESS OF MAXIMUM HEIGHT



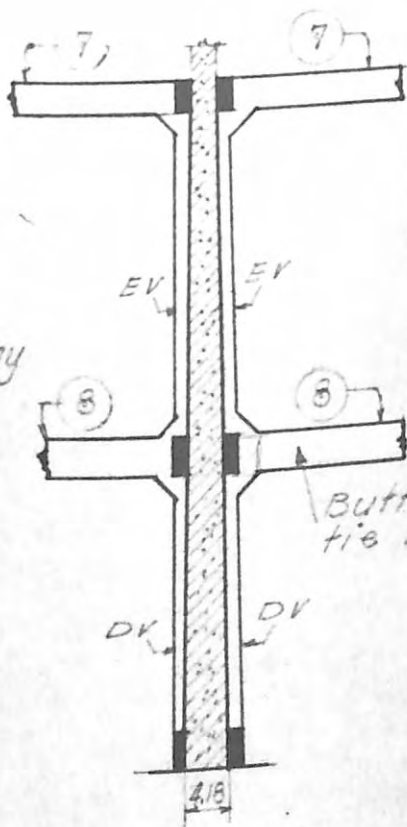
HORIZONTAL SECTION 5-5



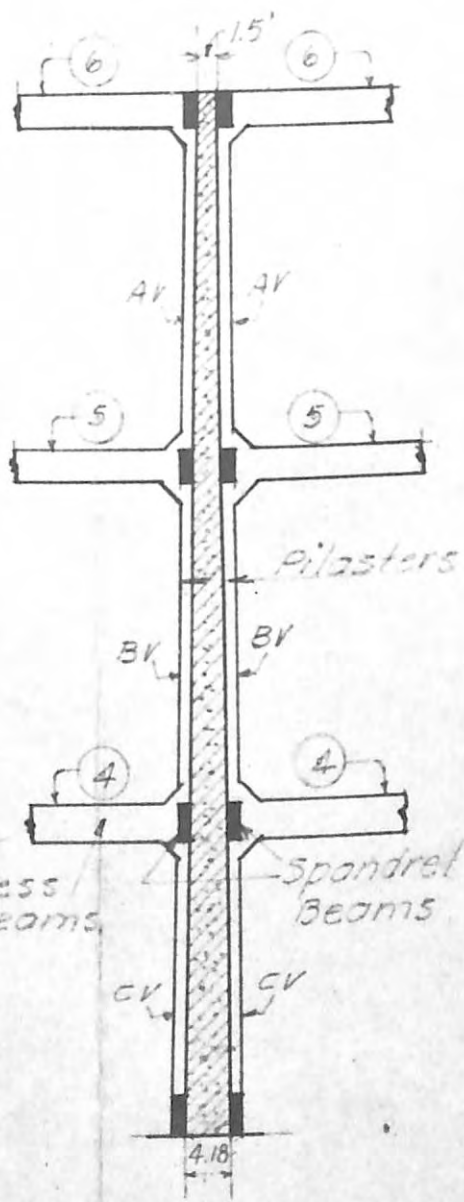
NOTE: Shaded area represents area of buttress to be regarded as a load on vertical member (pilaster) "BY"



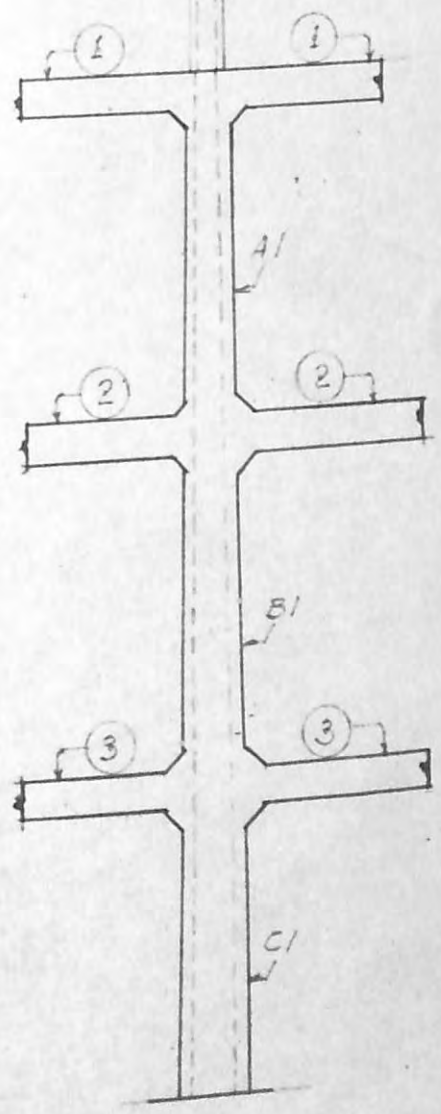
SECTION 1-1



SECTION 2-2

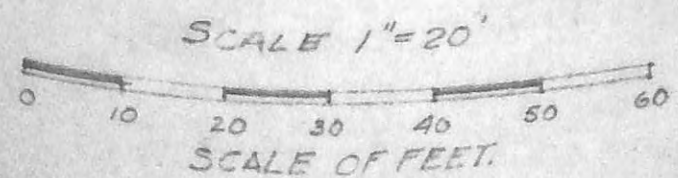


SECTION 3-3



SECTION 4-4

Buttress.
24'-0"
Buttress.



LAKE HODGES DAM.

DRAWING ILLUSTRATING RECOMMENDED METHODS OF REINFORCING DAM.

To accompany Report of
Henry D. Dewell.
Sept. 19, 1929.

3-5-37
copy/p

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES
401 PUBLIC WORKS BUILDING
SACRAMENTO

ORDER DIRECTING CERTAIN WORK TO BE DONE TO RENDER
DAM SAFE AND FIXING TIME FOR COMPLETION THEREOF

Application No. 8-5

Name of Dam - Lake Hodges

Stream - San Dieguito River

Legal Subdivision - Sec. 18, T. 18 S, R 2 W, SBB&M.

County - San Diego

To: CITY OF SAN DIEGO, SAN DIEGO, CALIFORNIA

WHEREAS, the application of City of San Diego was filed with the State Engineer on January 24, 1930 for approval of the above dam; that an examination of said dam and the works appurtenant thereto has been made by the State Engineer; that the State Engineer has found that certain work in and about said dam or works appurtenant thereto is necessary to render said dam safe and to protect lives and property by reason of the use thereof;

NOW, THEREFORE, you are hereby ordered and directed to perform the following work:

Strengthen the buttresses of said dam.

The above mentioned work shall be completed on or before December 31, 1931, and in order to insure such completion on or before said date said work shall be commenced on or before October 15, 1931.

Application for approval of such work must be made in accordance with the law governing the supervision of dams.

Witness my hand and the seal of the
Department of Public Works of the
State of California this 15th day
of August, 1931.

Edward Hyatt
State Engineer

3-5-37
copy/p

WESTERN UNION

July 31, 1931

Honorable Walter Austin
Mayor of San Diego
City Hall
San Diego, California

Replying to your verbal request by telephone state engineer advised San Diego chief engineer in September nineteen thirty that proceedings for correction unsatisfactory condition buttresses Lake Hodges dam should be initiated early date stop In view efforts of City to obtain funds for necessary work no further action has been taken by state office stop This matter cannot be allowed to rest in abeyance indefinitely and unless city takes steps to repair Hodges dam state will be compelled to issue orders for same stop No question whatever in the minds of state authorities as to jurisdiction and power to enforce orders in this connection suggest you refer law covering supervision of dams to city attorney for interpretation of powers of state and constitutionality of law stop City of San Diego certainly does not wish to be in position of maintaining a dam whose safety is questionable therefore urge that necessary work be initiated promptly.

EDWARD HYATT
STATE ENGINEER

Chg. Div Water Resources
Dept. Public Works

3-5-37
copy/p

August 30, 1933

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

Subject: San Dieguito River Project
Hodges reservoir dam strengthening

Gentlemen:

Under date of July 8, 1933, prints of drawings WD-464 sheets 1 to 3 of 3, being plans for increasing the stability of the buttresses and the safety of Hodges reservoir dam against earthquakes by the installation of a system of concrete reinforced bracing and steel ties between buttresses and the installation of concrete protected steel rods along each side of each buttress between the spring line of the arches, was submitted to your Honorable Body with recommendation that the Hydraulic Engineer be authorized to confer with the California State Engineer and submit the plans to him for his informal consideration and reaction preparatory to making formal application for approval.

In accordance with Resolution No. 60490, prints of the drawings were submitted by the Hydraulic Engineer to the State Engineer for his informal consideration and reaction.

It is indicated that the State Engineer's reaction was favorable and that formal application should be filed with the State Engineer.

RECOMMENDATION: It is recommended that the Hydraulic Engineer be authorized to file formal application with the State Engineer for the approval of plans for strengthening of Hodges reservoir dam.

Respectfully

H. N. Savage
Hydraulic Engineer

FDP/p

APPROVAL OF APPLICATION FILED October 27, 1933
INCLUDING THE PLANS AND SPECIFICATIONS
Division of Water Resources
Stamp Rec'd.
Division of Water

This is to certify that the within application, including plans and specifications for the repair of Lake Hodges Dam No. 3-8-3, Oct. 27, 1933 9:56 a.m.

has been examined and the same is hereby approved, subject to the following terms and limitations:

1. Construction work shall be commenced on or before January 1, 1934.
2. Construction work shall be completed on or before June 30, 1934.
3. This approval does not include, nor shall it be deemed an assent to, any purported limitation or restriction contained in the application, of the liability of the applicant to make repairs to said dam, nor shall it constitute a waiver of any rights of the people of the State of California, or any agency or department of state government, to require compliance with existing laws, or a waiver of any remedy for a violation of such laws.

The dam is located on San Dieguito River which is a tributary of Pacific Ocean in San Diego County and in the W 1/4 Sec. 18, T. 13 S., R. 2 W., S. R. 2 N.

DESCRIPTION

1. Type of dam. Concrete Multiple Arch
2. Description of work contemplated. Strengthening buttresses and extending spillway discharge apron as shown on drawings WP-464 and WP-411 Sheets 1, 2a, 3 and 4 of 4, as dated or edited October 1933 or as same may be revised.

Witness my hand and the seal of the Department of Public Works of the State of California this 13th day of November 1933

EDWARD THAYT DRAPER
State Engineer (Signed) H. N. Savage, Hydraulic Engineer
CITY OF SAN DIEGO

this 25th day of October 1933

RESOLUTION NO. 60919

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

WHEREAS, the San Diego Water Supply Company is the legal owner of Hodges Dam located in the County of San Diego; and

WHEREAS, The City of San Diego, under an agreement dated October 5, 1925, leased the said dam for a period of years with an option to purchase; and

WHEREAS, the State Engineer of the State of California has heretofore ordered and directed that certain repairs, reconstructions and betterments be made to strengthen said dam against the possibility of damage by earthquake; and

WHEREAS, both parties above mentioned desire to join in the financing of said repairs, reconstructions and betterments, and have heretofore entered into a contract in writing for such purpose; and

WHEREAS, the City of San Diego agreed to initiate the work and in consequence thereof agreed to prepare the drawings, plans and specifications for such work; and

WHEREAS, the Hydraulic Engineer of the City has now prepared such drawings, plans and specifications for Hodges strengthening; and

WHEREAS, it is necessary to obtain official approval of said plans and specifications from the State Engineer prior to the filing with the Federal Administrator of Public Works under the terms of the National Industrial Recovery Act, for the purpose of obtaining a loan to provide funds for the strengthening of Hodges Dam; and

WHEREAS, The City of San Diego has heretofore agreed to initiate the said application, and the same is now in the process of preparation; NOW, THEREFORE,

BE IT RESOLVED By the Council of The City of San Diego, as follows:

That the Hydraulic Engineer of the City be, and he is hereby authorized and directed to make application to the Department of Public Works of the State of California for approval of the drawings, plans and specifications for Hodges strengthening, so that the same may be submitted to the Federal Administrator of Public Works as a part of The City of San Diego's application for a loan for the strengthening of Hodges Dam.

It is understood that the application for approval of said drawings, plans and specifications mentioned herein is solely

for the purpose of enabling the City to negotiate with the Federal Administrator of Public Works for a loan to provide funds for the strengthening of the dam, and the fact that the City Hydraulic Engineer is directed to obtain the official approval from the Department of Public Works of the State of California shall not in any event be held as an admission by The City of San Diego that it is required either by law or by contract to repair said dam.

It is further understood that there is now pending in the Superior Court an action entitled, "The Department of Public Works of the State of California, et al. v. The City of San Diego, et al."; that no trial of said action has been had; and that the parties defendant thereto at no time have admitted, and do not now admit, any liability as a result of the filing of said action; and that the attempt by the San Diego Water Supply Company and The City of San Diego to voluntarily strengthen the dam and to jointly assist in the financing of the cost of such strengthening, shall not in any event be taken as an admission of any liability in connection with the action pending in the Superior Court, herein mentioned.

Presented by _____

Approved as
to form by _____

I HEREBY CERTIFY the above to be a full, true and correct copy of Resolution No. 60919 of the Council of the City of San Diego, California, as adopted by said Council October 23, 1933.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOTE, JR.
Deputy

3-5-37
copy/p

November 19, 1934

Mr. Fred D. Pyle, Hydraulic Engineer
City of San Diego
524 F Street
San Diego, California

Subject: Lake Hodges Dam #8-3

Dear Mr. Pyle:

We are forwarding under separate cover tracings WD-464 Sheets 1, 2a, 3 and 4. These tracings were signed by the State Engineer on November 17, 1934.

Approval of the above plans is given subject to field inspection, supervision and approval of the work as it progresses.

Very truly yours

Geo. W. Hawley
Deputy in Charge of Dams

cc- W.H.Holmes

November 20, 1936

From : Hydraulic Engineer
To : Purchasing Agent
Subject : Hodges Reservoir Dam, insurance

For a number of years the City has been insuring Hodges reservoir dam to the amount of \$350,000, costing \$2,800 per year.

The present policies expire December 31, 1936. With the completion of Hodges reservoir dam strengthening about December 20, 1936, it is not deemed necessary to continue the insurance beyond the expiration date of the present policies.

Fred D. Pyle
Hydraulic Engineer

APPROVED:

R. W. Flack
City Manager

FDP/f
cc-City Manager

4-10-37
copy/p

February 25, 1937

Mr. Edward Hyatt, State Engineer
401 Public Works Building
Sacramento, California

Subject: Hodges Reservoir Dam Strengthening

Dear Mr. Hyatt:

Under separate cover there is being forwarded to you for your final approval one set of mercury prints and one set of the original tracings, of the following drawings for Hodges reservoir dam strengthening:

WD-411 Spillway Discharge Apron
WD-464 Sheet 1A of 4 Hodges dam strengthening
" 2A " "
" 3 " "
" 4 " "
WD-586 Hodges dam strengthening

All work required by the State Engineer on the above project has been completed.

Please advise when the drawings may be expected to be approved and the certificate of approval received.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p
cc W.H.Holmes

4-10-37
copy/p

March 17, 1937

Mr. Fred D. Pyle, Hydraulic Engineer
City of San Diego
524 F Street
San Diego, California

Subject: Lake Hodges Dam #8-3

Dear Mr. Pyle:

Enclosed herewith is a certificate of approval of the above dam, issued pursuant to the provisions of the law governing State supervision of dams, Chapter 766, Statutes of 1929, as amended.

One set of approved tracings is being sent you under separate cover.

Very truly yours

Geo. W. Hawley
Deputy in Charge of Dams

Encl.
Reg.

State of California
Department of Public Works
Division of Water Resources

C E R T I F I C A T E O F A P P R O V A L

of

LAKE HODGES DAM

(Constructed prior to August 14, 1929)

THIS IS TO CERTIFY, That CITY OF SAN DIEGO
of San Diego County of San Diego STATE OF CALIFORNIA, on January 24, 1930
filed Application Number 8-3, for approval _____
of the Lake Hodges Dam located in SE 1/4 of NW 1/4, Sec. 18, T 12 S, R 2 W, SBB&M,
San Diego County, State of California; that the State Engineer caused an examination
to be made of said dam and finds the same to be safe for use to the full extent for which use
will be made as stated in said application.

NOW, THEREFORE, The said dam is hereby declared safe for use in
accordance with the findings as hereinabove set forth.

WITNESS my hand and the Seal of the Department of
Public Works of the State of California

(SEAL)

This 17th day of March 1937

Edward Hyatt
EDWARD HYATT, State Engineer

CITY OF SAN DIEGO
CALIFORNIA

WATER DEPARTMENT

DIVISION OF DEVELOPMENT AND CONSERVATION

FRED D. PYLE
HYDRAULIC ENGINEER

**NOTICE TO CONTRACTORS, INSTRUCTIONS
TO BIDDERS, PROPOSALS, DRAWINGS
AND SPECIFICATIONS**

HODGES RESERVOIR DAM STRENGTHENING

FEDERAL PUBLIC WORKS PROJECT CALIF. 1223 R

Proposals will be received at San Diego, California, until
10 o'clock A. M., March 10, 1936

COMPENSATION CERTIFICATE OF INSURANCE

This is to certify that the following described Workmen's Compensation and Employers' Liability Policy, covering as stated, has been issued by the OCCIDENTAL INDEMNITY COMPANY:

Policy No. WC 13119

Name of Assured M. H. Golden

Address Bank of America Bldg. San Diego, Calif.

Commencement December 21st, 1935

Expiration December 21st, 1936

Specific location covered Lake Hodges Dam, San Diego County, California

DESCRIPTION OF OPERATIONS OR WORK COVERED

All operations in connection with reinforcing and strengthening Lake Hodges Dam, San Diego County, California

In the event of any material change in or cancellation of said policy, the OCCIDENTAL INDEMNITY COMPANY will make every effort to notify the party to whom this Certificate is addressed of such change or cancellation but the OCCIDENTAL INDEMNITY COMPANY undertakes no responsibility by reason of any failure to do so.

Dated this 20th day of March 1936.

Issued to Water Dept. City of San Diego

Address: San Diego, California

OCCIDENTAL INDEMNITY COMPANY

By _____
Authorized Agent

4-5-37
copy/p

PUBLIC LIABILITY CERTIFICATE OF INSURANCE

This is to certify that the following described Public Liability Policy, covering as stated, has been issued by the OCCIDENTAL INDEMNITY COMPANY

Policy No. PL 3222

Name of Assured: M. H. Golden

Address: Bank of America Bldg. San Diego, Calif.

Limits: Bodily Injury \$50,000.00 One Person \$100,000.00 one accident
Property damage \$50,000.00 one accident; \$50,000.00 aggregate

Commencement: March 19th, 1936

Expiration: December 21st, 1936

Specific location covered: Lake Hodges Dam, San Diego County,
California

DESCRIPTION OF OPERATION OR WORK COVERED:

All operations in connection with reinforcing and strengthening Lake Hodges Dam including the operation of hoists or elevators used for the hoisting of material or equipment operated by and under the control of the assured and used in connection with the construction work covered under the policy.

In the event of any material change in or canbellation of said policy, the OCCIDENTAL INDEMNITY COMPANY will make every effort to notify the party to whom this Certificate is addressed of such change or cancellation but the OCCIDENTAL INDEMNITY COMPANY undertakes no responsibility by reason of any failure to do so.

Dated this 19th day of March 1936.

Issued to Water Dept. City of San Diego

Address San Diego, California

OCCIDENTAL INDEMNITY COMPANY

By _____
Authorized Agent

4-5-37
copy/p

PUBLIC LIABILITY CERTIFICATE OF INSURANCE

This is to certify that the following described Public Liability Policy, covering as stated, has been issued by the OCCIDENTAL INDEMNITY COMPANY:

Policy No. AL - 90198

Name of Assured Moreley H. Golden Company

Address Bank of America Bldg. San Diego, Calif.

Limits: \$10,000.00 one person \$20,000.00 one accident

Commencement March 10th, 1936

Expiration March 10th, 1937

DESCRIPTION OF OPERATION OR WORK COVERED:

Automobile liability and property damage coverage.
1930 Dodge 4 3-ton dump truck Motor #GB 22217

In the event of any material change in or cancellation of said policy, the OCCIDENTAL INDEMNITY COMPANY will make every effort to notify the party to whom this Certificate is addressed of such change or cancellation but the OCCIDENTAL INDEMNITY COMPANY undertakes no responsibility by reason of any failure to do so.

Dated this 20th day of March 1936. Issued to Water Dept. San Diego

Address: San Diego, Calif.

OCCIDENTAL INDEMNITY COMPANY

By _____
Authorized Agent

4-5-37
copy/p

THE TRAVELERS

AUTOMOBILE LIABILITY AND PROPERTY DAMAGE INSURANCE
CERTIFICATE

Certificate issued to City of San Diego Water Department

Address San Diego, California

Name of Assured M. H. Golden

Address 404 California Bank Building, San Diego, Calif.

Such bodily injury liability and property damage liability insurance as is afforded by the policy designated below, now in force and expiring on the date stated below, applies with respect to the liability of the Assured named above, and of any other person, firm or corporation legally responsible for the use of any automobile described in the policy with the permission of the Assured, arising from the operation of such automobile. Such insurance is subject to all the terms and conditions of the policy and this certificate is to indicate, as a matter of information only, that the described policy has been issued. In the event this policy is cancelled or changed before the expiration date stated herein in such a manner as to affect this certificate, five (5) days written notice will be given to the person, firm or corporation named above, to whom this certificate has been issued.

Policy No. FA-279257	Limits of liability	
	Bodily injury	Property damage
	Each person 10,000	Each accident 5,000
	Each accident 20,000	

Effective date August 28, 1935 Expiration date August 28, 1937

Automobiles to which insurance is applicable: 1932 Ford "AA"
1-1/2 ton truck
#B6067022

This certificate is executed for the Travelers Insurance Company as respects insurance afforded by that Company only. It is executed for The Travelers Indemnity Company as respects insurance afforded by that Company only.

THE TRAVELERS INSURANCE COMPANY

THE TRAVELERS INDEMNITY COMPANY

Date March 20, 1936

Wm. E. Shillinger
Manager

March 20, 1936

The Water Department
City of San Diego
San Diego, California

Re: PL 3222 - M. H. Golden

Gentlemen:

This is to advise that the above captioned policy covers our assured for the operation of steam boilers and other similar equipment as respects the assured's liability to pay damages imposed by law for bodily injuries or death accidentally suffered during the period of this policy by any person or persons not excluded, provided that such steam boilers are used in connection with the construction or reinforcing operations of the Lake Hodges Dam. The limits of liability are \$50,000 on account of bodily injuries to or the death of one person, subject to the same limit for each person and \$100,000 on account of bodily injuries to or the death of more than one person as the result of one accident.

Very truly yours

Hugo H. Methmann

Manager

HHM:RK

8-9-35

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THE CITY OF SAN DIEGO

CALIFORNIA

WATER DEPARTMENT

DIVISION OF DEVELOPMENT AND CONSERVATION

Fred D. Pyle
Hydraulic Engineer

NOTICE TO CONTRACTORS, INSTRUCTIONS TO BIDDERS
PROPOSAL, DRAWINGS AND
SPECIFICATIONS

8-9-35

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THE CITY OF SAN DIEGO

CALIFORNIA

HODGES RESERVOIR DAM STRENGTHENING

DIVISION OF DEVELOPMENT AND CONSERVATION

Fred D. Pyle
Hydraulic Engineer

Proposals will be received at San Diego, California
until 10 o'clock A.M., March 10, 1936.

NOTICE TO CONTRACTORS, INSTRUCTIONS TO BIDDERS

PROPOSAL, DRAWINGS AND

SPECIFICATIONS

HODGES RESERVOIR DAM STRENGTHENING
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Instructions to Bidders
Proposal
Affidavit
Penalty for False Certification
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Bidder's Statement of
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Bidder's Statement of Equipment
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Schedules
Agreement
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by City
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82. Chipping concrete
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85. Grouting
86. Anchor holes
87. Painting
88. Stressing of steel

2-4-35

NOTICE TO CONTRACTORS

Notice is hereby given that the City of San Diego will receive bids for furnishing all labor, material, transportation and services for the construction of Hodges Reservoir Dam Strengthening for the City of San Diego, California, said work being located at Hodges Reservoir Dam about ten miles easterly of Solana Beach, California and involves 4200 cubic yards of concrete, the placing of about 80,000 pounds of reinforcing steel and furnishing and placing about 6500 barrels of low heat cement, about 645,500 pounds of steel of various kinds, and miscellaneous items; each bid to be in accordance with plans and specifications now on file with the City Clerk of said City and contained in document No. 296494.

Notice is hereby given that all proceedings relating to the above project, including bidding, award of contract, and all work to be done on the project, are subject to the rules and regulations and all conditions prescribed by the Federal Emergency Administration of Public Works, as well as the Charter and Ordinances of the City of San Diego.

Bidders are hereby notified that pursuant to the Statutes of the State of California, and the Charter of the City of San Diego, the Council of the City of San Diego and in compliance with the regulations of the Federal Emergency Administration of Public Works the City of San Diego has ascertained the general prevailing rate of per diem wages, and rates for legal holidays and overtime work in the locality in which this work is to be performed, for each craft or type of workman or mechanic needed to execute the contract which will be awarded the successful bidder.

11-25-35 The prevailing rates so determined are as follows:
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<u>Trade or Occupation</u>	Rates for		
	<u>Per Diem Wage</u>	<u>Hourly Wage Rate</u>	<u>Legal Holidays & Overtime</u>
Auto Mechanic	\$6.00	\$.75	Time & one-half
Blacksmiths	6.00	.75	do
Cableway Operators	8.00	1.00	do
Carpenter Foremen	8.80	1.10	do
Carpenters	8.00	1.00	do
Cement Finishers	8.00	1.00	do
Compressor Operators	6.00	.75	do
Concrete Finishers	8.00	1.00	do
Concrete Foremen	8.80	1.10	do
Concrete Form Builders	8.00	1.00	do
Concrete Spreaders	5.00	.62-1/2	do
Concrete Tampers	5.00	.62-1/2	do
Concrete Mixermen	5.00	.62-1/2	do
Crane Operators	9.00	1.12-1/2	do
Derrick Operators	9.00	1.12-1/2	do
Dragline Operators	9.00	1.12-1/2	do
Drillers	7.00	.87-1/2	do
Drill Sharpeners	6.00	.75	do
Electricians	9.00	1.12-1/2	do
Excavation Foremen	6.00	.75	do
General Foremen	8.80	1.10	do
Hoist Operators	9.00	1.12-1/2	do
Laborers, Common	5.00	.62-1/2	do
Materialmen	6.00	.75	do
Mechanics	6.00	.75	do
Mechanic Trouble Shooters	6.00	.75	do
Mortar Men	8.00	1.00	do
Pump Men	6.00	.75	do
Reinforcing Steel Foremen	8.80	1.10	do
Reinforcing Steel Workers: (Placers and Tiers)	8.00	1.00	do
Riggers (other than heavy)	9.00	1.12-1/2	do
Shovel Operators: 1 yard or over	10.00	1.25	do
Under 1 yard	8.00	1.00	do
Shovel Cranesmen	6.00	.75	do
Shovel Oilers	6.00	.75	do
Shovel Pitmen	5.00	.62-1/2	do
Superintendents	8.80	1.10	do
Tractor Operators	6.00	.75	do
Timekeepers	6.00	.75	do
Truck Drivers under 15500 pounds	5.44	.68	do
Truck Drivers over 15500 pounds	6.00	.75	do
Welders	8.00	1.00	do

Any craft or employment not specifically mentioned in the foregoing Schedule of rates shall be paid not less than \$5.00 per diem of 8 hours.

2-3-36

The foregoing schedule of prevailing rates of per diem wages is based upon a working day of eight (8) hours. The hourly wage rate prescribed herein above is the per diem rate divided by the aforementioned number of hours constituting the working day.

It shall be mandatory upon the contractor to whom the contract is awarded, and upon any subcontractor under him, to pay not less than said specified rates to all laborers, workmen and mechanics employed by them in the execution of the contract.

Notice is also hereby given that all bidders must submit with their bids, a sworn statement of their financial responsibility, technical ability and experience.

"Notice is also hereby given that all bidders must submit with their bids a tentative schedule showing the classes of labor and the number of each class he will require in the performance of the contract."

Each bid shall be made out on a form attached to and forming a part of the specifications, which can be obtained at the office of the Hydraulic Engineer of the City of San Diego, 524 F Street, San Diego, California, and must be accompanied by a certified or cashier's check or bid bond for 10% of the amount of the bid made payable to the order of the City Clerk of the City of San Diego, California; shall be sealed and filed with the City Clerk of said City, on or before _____
 _____ March 10 _____, 1936, at _____ 10 _____ o'clock A.M.
 and will be opened in public at or about _____ 10 _____ o'clock

2-3-36

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A.M. of that day in the Council Chambers at the City Hall, San Die_o, California.

The above mentioned check or bond shall be given as a guaran- tee that the bidder will enter into contract if awarded the work, and will be declared forfeited if the successful bidder refuses to enter into said contract after bein_ requested so to do by the Council of the City of San Die_o.

The successful bidder will be required to furnish a labor and material bond in an amount equal to 50% of the contract price, and a faithful performance bond in an amount equal to 100% of the contract price, said bonds to be secured from a surety company satis- factory to the Federal Emer_ency Administration of Public Works and to the City of San Die_o. A list of such surety companies is on file with the Purchasin_ A_gent of said City.

The said City of San Die_o reserves the right to reject any or all bids and/or to waive any irre_ularity in a bid.

Unless otherwise required by law, no bidder may withdraw his bid for a period of thirty days after the date set for the openin_ thereof.

Dated San Die_o, California February 18, 1936.

FRED D. PYLE
Hydraulic En_gineer

F. M. LOCKWOOD
Purchasin_ A_gent

10-8-35

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INSTRUCTIONS TO BIDDERS

1. SECURING DOCUMENTS.- Drawings and specifications may be secured at the office of the Hydraulic Engineer of the City of San Diego, 524 F Street, San Diego, California.

2. DEPOSIT.- A deposit of Twenty five Dollars (\$25.00) is required of each bidder, who desires to secure drawings and specifications, which deposit is a guarantee that the drawings and specifications will be returned in good condition to the Hydraulic Engineer's office not later than fourteen days after bids on the project have been opened, and is liable to forfeiture if the drawings and specifications are not so returned within said time. The drawings and specifications are the property of the City of San Diego, and are loaned to the Bidder until bids are due. The deposit shall not be construed to be the purchase price of any part of those documents. Bidders are requested, should they decide not to submit a bid, to return the drawings and specifications as soon as possible after such decision is made.

3. PROPOSALS.- Bids to receive consideration shall be made in accordance with the following instructions:

(a) Bids shall be made upon the form attached to and forming a part of the specifications and shall not be detached therefrom; all bid items shall be properly filled out; numbers shall be stated both in writing and in figures and the signature of all persons signing shall be in long hand. The completed form should be without interlineations, alterations or erasures.

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(b) Bids shall not contain any recapitulation of the work to be done. Alternative proposals will not be considered unless called for. No oral, telegraphic or telephonic proposals or modifications will be considered.

(c) With each and every bid, and forming a part thereof, the bidder shall furnish a statement of his financial responsibility, technical ability and experience, properly and fully filled out.

(d) With each and every bid, the bidder shall furnish a down-to-date financial statement of his organization certified before a notary public.

(e) Bids shall be accompanied with a certified or cashier's check, or a bidder's bond for an amount not less than ten (10%) percent of the bid made payable to the order of the City of San Diego. If a bidder's bond accompanies the proposal said bond shall be secured from a surety company satisfactory to the Federal Emergency Administration of Public Works, and to the City of San Diego. A list of such surety companies is on file with the Clerk of the City of San Diego City Hall 5th and G Streets, San Diego, California. Said check or bond shall be given as a guarantee that the Bidder will enter into a contract if awarded the work and in case of refusal or failure to enter into said Contract, the check or bond, as the case may be, shall be forfeited to the City of San Diego.

(f) Before submitting a bid, bidders shall carefully examine the drawings, read the specifications, and the form of agreement, shall visit the site of work, and shall fully inform themselves as to all existing conditions and limitations, and shall include in the bid a sum to cover the cost of all items included in the contract.

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(5) Bids shall be delivered to the City Clerk of the City of San Diego on or before the day and hour set for the opening of bids, in the advertised Notice to Contractors, enclosed in a sealed envelope provided therefor, and bearing the title of the work and the name of the bidder.

4. WITHDRAWAL OF BID.- Bids may be withdrawn by the bidder prior to, but not after, the time fixed for opening of bids.

5. AGREEMENT AND BONDS.- The form of Agreement, which the successful bidder, as Contractor, will be required to execute, and the forms of bonds which he will be required to furnish, are on file at the office of the City Clerk of the City of San Diego, City Hall, 5th and G Streets, San Diego, California. These forms may be examined upon request.

6. INTERPRETATION OF DRAWINGS AND DOCUMENTS.- Should a bidder find discrepancies in, or omissions from, the drawings or specifications, or should he be in doubt as to their meaning, he shall at once notify the Hydraulic Engineer of the City of San Diego in writing, and should it be found that the point in question is not clearly and fully set forth,, a written Addenda or Bulletin of Instructions will be sent to all Bidders. The City of San Diego will not be responsible for any oral instructions.

7. ADDENDA OR BULLETINS.- Any addenda or bulletins issued during the time of bidding, or forming a part of the documents loaned to the bidder for the preparation of his bid, shall be covered in the bid and shall be made a part of the contract.

8. CONSTRUCTION REGULATIONS OF THE FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS.- Attention is called to the Construction

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Regulations of the Federal Emergency Administration of Public Works which form a part of the contract and/or specifications.

9. STATE AND DISTRICT LABOR AND MATERIAL REQUIREMENTS.- Attention is called to the State and District Labor and Material Requirements, which form a part of the contract and/or specifications.

10. OPENING OF BIDS.- Bids will be opened and read at the time set in the advertised Notice to Contractors in the Council Chamber of the City of San Diego, City Hall, 5th and G Streets, San Diego, California. Bidders, or their representatives, and other interested persons, may be present at the opening of bids.

11. AWARD OR REJECTION OF BIDS.- The contract will be awarded to the lowest responsible bidder complying with these instructions and with the advertised notice to Contractors inviting bids, provided his bid is reasonable and it is to the interest of the City of San Diego to accept it. The said City, however, reserves the right to reject any or all bids, and to waive any informality in bids received. The said City of San Diego also reserves the right to reject the bid of any bidder who has previously failed to perform properly or to complete on time, contracts with the City of San Diego of a nature similar to this project.

12. COMPETENCY AND RESPONSIBILITY.- The competency and responsibility of bidders and of their proposed subcontractors will be considered in making the awards.

13. APPROVAL OF BIDS.- All bids must be submitted to the State Engineer, P.W.A., for consideration and approval before the contract may be executed.

14. BIDDERS INTERESTED IN MORE THAN ONE BID.- No person, firm or corporation shall be allowed to make or file, or be inter-

10-8-35

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ested in more than one bid for the same work, unless alternative bids are called for. A person, firm or corporation who has submitted a sub-proposal to a Bidder, or who has quoted prices on materials to a Bidder, is not hereby disqualified from submitting a sub-proposal or quoting prices to other bidders.

15. BONDS.- The successful bidder, simultaneously with the execution of the agreement will be required to furnish a labor and material bond in an amount equal to fifty (50%) per cent of the contract price, and a faithful performance bond in an amount equal to one hundred (100%) per cent of the contract price, said bonds shall be secured from a surety company satisfactory to the Federal Emergency Administration of Public Works and to the City of San Diego.

16. SPECIAL NOTICE.- Bidders are required to inform themselves fully of the conditions relating to construction and labor under which the work will be or is now being performed and the contractor must employ, so far as possible, such methods and means in the carrying out of his work as will not cause any interruption or interference with any other contractor.

17..ASSIGNMENT OF CONTRACT.- No assignment by the contractor of any contract to be entered into hereunder or of any part thereof, or of funds to be received thereunder by the contractor will be recognized by the Public Works Administration, unless such assignment has had the approval of the awarding authority and State Director PWA, and the surety has been given due notice of such assignment in writing. No assignment will receive the approval of the State Director PWA, unless the instrument

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of assignment contains a clause to the effect that it is agreed that the funds to be paid the assignee under the assignment are subject to a prior lien for services rendered or materials supplied for the performance of the work called for in said contract in favor of all persons, firms or corporations rendering such services or supplying such material.

If any person contemplating submitting a bid for the proposed contract is in doubt as to the true meaning of any part of plans, specifications, or other proposed contract documents, he may submit to the Hydraulic Engineer of the City of San Diego a written request for an interpretation thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation of the proposed documents will be made only by Addendum duly issued and a copy of such Addendum will be mailed or delivered to each person receiving a set of such documents. The City of San Diego will not be responsible for any other explanations or interpretations of the proposed documents.

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PROPOSAL

Bids will be received until 10 A.M. (P.M.)March 10 1936, at City Hall, San Diego

California.

TO THE HONORABLE, THE COUNCIL OF
THE CITY OF SAN DIEGO, CALIFORNIA.

Gentlemen:

The undersigned hereby proposes and agrees to furnish any and all required labor, material, transportation and services for the construction of HODGES RESERVOIR DAM STRENGTHENING in strict conformity with the plans and specifications prepared therefor by the Hydraulic Engineer of the City of San Diego at and for the unit prices as set forth and contained in the schedule attached hereto.

IT IS UNDERSTOOD THAT THIS BID IS BASED UPON COMPLETION OF THE WORK WITHIN 240 CALENDAR DAYS FROM AND AFTER THE DATE OF FINAL APPROVAL OF THE EXECUTED CONTRACT DOCUMENTS BY THE STATE DIRECTOR, PWA.

If awarded the contract, the undersigned hereby agrees to sign said contract, and furnish the necessary bonds within ten (10) days of the award of said contract, and to begin work within ten (10) days from the date of approval of the Contract by the State Director of the Federal Emergency Administration of Public Works.

The undersigned has examined the location of the proposed work and is familiar with the plans and specifications and the local conditions at the place where work is to be done.

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THE UNDERSIGNED HAS CHECKED CAREFULLY THE SCHEDULE ITEMS AND UNIT PRICES PERTAINING THEREGO, SET FORTH AND CONTAINED IN THE SCHEDULE ATTACHED HERETO AND UNDERSTANDS THAT THE CITY OF SAN DIEGO WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS ON THE PART OF THE UNDERSIGNED IN MAKING UP THIS BID.

This bid is tendered with the understanding that all proceedings relating to the above project, including bidding, award of contract, and all work to be done on the project, are subject to the Rules and Regulations and all conditions prescribed by the Federal Emergency Administration of Public Works, and the undersigned, in tendering this bid, hereby agrees to abide by and conform to such Rules, Regulations and conditions of the Federal Emergency Administration of Public Works.

M. H. GOLDEN
Signature

FINANCIAL RESPONSIBILITY, TECHNICAL ABILITY, AND EXPERIENCE

The undersigned submits herewith a down-to-date statement of his financial condition, of his technical ability and of his experience in construction work.

WAGES: The undersigned agrees, if awarded the contract, that there shall be paid by the undersigned, and by all sub-contractors under him, to all laborers, workmen and mechanics employed in the execution of such contract or any sub-contract thereunder, not less than the general prevailing rate of per diem wages and rates for overtime and legal holidays in the locality in which the work is to be performed, as ascertained and determined, pursuant to state statute and/or local law thereto applicable, by the public body awarding this contract, the schedule thereof being set forth in the advertisement for bids and/or other contract documents.

"The undersigned submits herewith a tentative schedule showing the classes of labor and the number of each class he will require in the performance of the contract."

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The undersigned hereby certifies that this bid is genuine, and not sham or collusive, or made in the interest or in behalf of any person not herein named and that the undersigned has not directly or indirectly, induced or solicited any other bidder to put in a sham bid, or any other person, firm or corporation to refrain from bidding, and that the undersigned has not in any manner sought by collusion to secure for himself an advantage over any other bidder.

Enclosed find ~~find~~ certified check or cashier's check No. _____

of the ~~XXXXX~~ Bidders Bond _____ Bank _____

for \$ ~~15,000.00 Fifteen Thousand Dollars~~ _____ which is not less than ten per cent (10%) of this bid, payable to

the City Clerk, City of San Diego _____ California, and which is given as a guarantee that the undersigned will enter into Contract if awarded the work.

The undersigned agrees that this bid may not be withdrawn for a period of 30 days after the date set for the opening thereof unless otherwise required by law.

CONTRACTOR **M. H. GOLDEN**
ADDRESS **531 Bank of America Bldg.**
TELEPHONE **Fr. 7983**

Dated this 10th day of March, 1936.

A F F I D A V I T

State of CALIF.)
County of SAN DIEGO) ss

M. H. GOLDEN, being first duly sworn, says that he is AN INDIVIDUAL bidder under the notice of the Purchasing Agent hereto attached, inviting sealed proposals for HODGES RESERVOIR DAM STRENGTHENING that the proposal herewith presented is genuine, and not sham or collusive, or made in the interest or on behalf of any person, firm or corporation not herein named; that he has not directly or indirectly induced or solicited any other bidder to put in a sham proposal, or any other person or firm or corporation to refrain from bidding, and that the said bidder has not in any manner sought by collusion to secure to himself an advantage over other bidders.

Signed M. H. GOLDEN

Subscribed and sworn to before me this 10th day of MARCH, 19 36

An affidavit can be signed only by an individual before an officer authorized to administer oaths.

HELEN C. WALLACE
Notary Public in and for the
County of SAN DIEGO
State of CALIFORNIA

(SEAL)

PENALTY
FOR FALSE CERTIFICATION

Section 35 of the Criminal Code, as amended, provides a penalty of not more than \$10,000 or imprisonment of not more than ten years, or both, for knowingly and wilfully making or causing to be made "any false or fraudulent statements***** or use or cause to be made or used any false***** account, claim, certificate, affidavit or deposition, knowing the same to contain any fraudulent or fictitious statement*****" relative to any matter within the jurisdiction of any Governmental department or agency.

Signed M. H. GOLDEN

Subscribed and sworn to before me this 10th day of
MARCH 1936.

HELEN C. WALLACE
Notary Public in and for the

An affidavit can be signed only by an individual before an officer authorized to administer oaths.

County of SAN DIEGO

State of CALIFORNIA

(SEAL)

STATE OF CALIFORNIA)
) SS.
COUNTY OF SAN DIEGO)

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On this 10th day of MARCH in the year one thousand nine hundred and THIRTY-SIX, before me HELEN C. WALLACE, a Notary Public in and for the said County and State, residing therein, duly commissioned and sworn, personally appeared DONALD B. GOLDSMITH known to me to be the duly authorized Agent, and Attorney-in-Fact of the MASSACHUSETTS BONDING AND INSURANCE COMPANY, the corporation whose name is affixed to the foregoing instrument; and duly acknowledged to me that he subscribed the name of the MASSACHUSETTS BONDING AND INSURANCE COMPANY thereto as Surety and his own name as Attorney-in-Fact.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

(SEAL)

HELEN C. WALLACE
Notary Public in and for said County and State

Form J 3004B 3H 7-35 My commission expires March 12, 1938

GUARANTY OF BONDS

We hereby agree to furnish bonds for this bidder as required by these specifications and the regulations of The City of San Diego, in event contract is awarded on the basis of this proposal.

MASSACHUSETTS BONDING AND INSURANCE COMPANY

By ~~Donald B. Goldsmith~~
(Donald B. Goldsmith) Attorney-in-Fact
234 Spreckels Bldg., San Diego, Calif.

Signatures and addresses
of guarantors of bonds.

(SEAL)

Dated March 10, 1936

Surety companies, to be acceptable to The City of San Diego must be authorized to do business in the State of California and be on the accredited list of the United States Treasury Department and hold certificates under the Acts of Congress of August 13, 1894, and March 23, 1910, and their bonds will be limited to such amounts as would be acceptable to the Treasury Department and/or the Federal Emergency Administration of Public Works.

(SEAL)

BIDDER'S STATEMENT OF EXPERIENCE AND REFERENCES

The bidder is required to state below what work of similar character to that included in the proposed contract he has successfully performed, and give references which will enable the Council to judge of his responsibility, experience, skill and business standing.

Reference as to similar work performed-

- El Capitan Tunnel Inner Lining.
- Various bridges for State of California.
- Various Building & Water Projects for U.S. Navy.

H. H. GOLDEN
(Signature)

Subscribed and sworn to before me this 10 day of March 1936

(SEAL)

HELEN C. WALLACE
Notary Public in and for the
County of SAN DIEGO
State of CALIFORNIA

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BIDDER'S STATEMENT OF EQUIPMENT

If contract is awarded under this proposal, the bidder proposes to do the work with equipment of the following character and quantity:

We have ample equipment to complete contract. Detailed statement will be furnished if we are successful bidders.

M. H. GOLDEN

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BIDDER'S STATEMENT OF FINANCIAL RESPONSIBILITY AND TECHNICAL
ABILITY

See attached Statement

(Signature)

Subscribed and sworn to before me this _____ day of _____ 19__

Notary Public in and for the
County of _____

State of _____

Require financial forms for Page 20

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FINANCIAL STATEMENT

The bidder is required to state below a down-to-date financial statement of his organization.

(CORPORATE SEAL)

M. H. GOLDEN
(Signature)

Subscribed and sworn to before me this 10th day of March 1936

(SEAL)

HELEN C. WALLACE
Notary Public in and for the
County of SAN DIEGO
State of CALIFORNIA

HODGES RESERVOIR DAM STRENGTHENING
SCHEDULE

Item No.	Work or Material	Quantity and Price	Amount
1.	Excavation Class 1 300 cubic yards at	Five 35/100 (\$ 5.35) per cubic yard words	\$ 1,605.00
2.	Excavation Class 2 50 cubic yards at	Five 35/100 (\$ 5.35) per cubic yard words	\$ 267.50
3.	Excavation Class 3, cutoff excavation in spillway 100 cubic yards at	Four 00/100 (\$ 4.00) per cubic yard words	\$ 400.00
4.	Excavation Class 4 in spillway 200 cubic yards at	Three 80/100 (\$ 3.80) per cubic yard words	\$ 760.00
5.	Concrete Class 1 in columns and struts 2,500 cubic yards at	Nineteen ^{20/100} (\$ 18.20) per cubic yard words	\$ 45,500.00
6.	Concrete Class 2 in diagonal strengthening and top anchorage 950 cubic yards at	Twenty One ^{20/100} (\$ 21.20) per cubic yard words	\$ 20,140.00
7.	Concrete Class 3 in footings 150 cubic yards at	Thirteen 00/100 ¹⁰⁰ (\$ 13.00) per cubic yard words	\$ 1,950.00
8.	Concrete Class 4 in spillway 600 cubic yards at	Seven 30/100 (\$ 7.30) per cubic yard words	\$ 4,380.00
9.	Cement in the work 6,500 barrels at	Two 86/100 (\$ 2.86) per barrel words	\$ 18,590.00
10.	Cleaning and placing reinforcing steel in the work furnished by the City 80,000 pounds at	One and one ^{0.015} (\$) per pound words	\$ 1,200.00

Half Cents

Item No.	Work or Material	Quantity and Price	Amount
11.	Reinforcing steel furnished by contractor in place in the work 550,000 pounds at Four Cents (\$ 0.04) per pound		\$ 22,000.00
12.	Steel tie bars in place in the work including nuts and turnbuckles 55,000 pounds at Seven Cents (\$ 0.07) per pound		\$ 3,850.00
13.	Steel plates in place in the work 40,600 pounds at Five Cents (\$ 0.05) per pound		\$ 2,030.00
14.	Drilling holes thru concrete with concussion drill, various sizes 1,700 linear feet at ninety (\$ 0.90) per linear foot		\$ 1,530.00
15.	Chipping concrete surface 9,300 square feet at Twenty five Cents (\$ 0.25) per square foot		\$ 2,325.00
16.	Chipping keyways 1,650 cubic feet at One 70/100 (\$ 1.70) per cubic foot		\$ 2,805.00
17.	Grouting 575 drill holes at sixty Cents (\$ 0.60) each		\$ 345.00
18.	Drilling 1-1/2 inch anchor holes in spillway 500 linear feet at fifty five Cents (\$ 0.55) per linear foot		\$ 275.00
19.	Drilling 2-1/2 inch or larger anchor holes under footings of vertical columns 1,000 linear feet at sixty six Cents (\$ 0.66) per linear foot		\$ 660.00
Total:			\$130,612.50

AGREEMENT

THIS AGREEMENT, made and entered into this 24th day of March, 1936, by and between the City of San Diego, a municipal corporation, First Party, and M. H. Golden

Second Party, sometimes hereinafter called the Contractor.

WITNESSETH: That the parties hereto have mutually covenanted and agreed, and by these presents do covenant and agree with each other, as follows:

FIRST: The complete contract includes all of the Contract Documents, to-wit. The Advertisement, the Instructions to Bidders, the Proposal, the bonds executed in connection therewith, the Agreement, the General Specifications, the Detail Specifications, and the Drawings, and all modifications incorporated in those documents before their execution; any and all obligations of the First Party and the Contractor are fully set forth and described therein.

All Contract Documents and Plans are intended to cooperate so that any work called for in one and not mentioned in the other or vice versa is to be executed the same as if mentioned in all contract papers and set forth in the drawings.

SECOND: The said Contractor agrees to furnish all tools, appliances, equipment, apparatus, facilities, transportation, labor, material and incidentals necessary to perform and complete in a good and workmanlike manner, the work of

HOLGERS. RESERVOIR DAM STRENGTHENING

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as called for, and in the manner designated in, and in strict conformity with the plans and specifications adopted by the Council of the City of San Diego, California, which said plans and specifications are entitled, respectively, "Notice to Contractors, Instructions to Bidders, Proposal, Drawings and Specifications, Hodges Reservoir Dam Strengthening" and which plans and specifications are identified by the signatures of the parties to this agreement. It is understood and agreed that said tools, equipment, apparatus, facilities, labor and material shall be furnished and said work performed and completed as required in said plans and specifications under the direction and supervision of, and subject to the approval of the City of San Diego or its representatives.

THIRD: The said party of the first part agrees to pay and the second party agrees to accept at the time and in the manner as hereinafter set forth in full payment for the work above agreed to be done, the unit prices agreed upon, as set forth in the following schedule and subject to additions and deductions as provided in the General and Special Conditions of this contract, said payments to be made in accordance with the Charter provisions of the City of San Diego as follows:

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, for completed work, classified and computed on the basis of the items and unit prices named in the contract. The partial payments herein agreed to be made to the contractor shall not include material and equipment stored on project sites. 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 twenty-five per cent will be made, and from

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the remainder a further deduction will be made of all amounts due to the City of San Diego from the contractor for supplies or materials furnished or services rendered and any other amounts that may be due to The City of San Diego 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. No payments will be made to the contractor until satisfactory receipts for payment as provided in Clause 12 of P.W.A. "Construction Regulations" of all labor and materials supplied during the preceding month shall be shown to the P.W.A. Engineer-Inspector, as required. The twenty-five per cent deducted as above set forth shall not become due and payable until the completion of the work to the satisfaction of the Engineer and its acceptance by The City of San Diego and until release shall have been executed and filed as hereinafter provided, and until five days shall have elapsed after the expiration of the period within which liens may be filed under the provisions of Title 4 part 3 of the Code of Civil Procedure of the State of California. In case of suspension of the contract, the said twenty-five per cent shall be and become the sole and absolute property of The City of San Diego to the extent necessary to repay to The City of San Diego 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 the City of San Diego, under or by virtue of the contract, shall have been executed by the contractor, and when five days shall have elapsed

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after the expiration of the period within which liens may be filed, as hereinabove provided, final payment will be made, at such time and in such manner as provided by law, of any balance due, including the percentage withheld as above stated, or such portion thereof as may be due the contractor.

SCHEDULE OF UNIT PRICES

Item No.	Work or Material	Quantity and Price	Amount
1.	Excavation Class 1 300 cubic yards at	Five 35/100 words (\$ 5.35) per cubic yard	\$ 1,605.00
2.	Excavation Class 2 50 cubic yards at	Five 35/100 words (\$ 5.35) per cubic yard	\$ 267.50
3.	Excavation Class 3, cutoff excavation in spillway 100 cubic yards at	Four 00/100 words (\$ 4.00) per cubic yard	\$ 400.00
4.	Excavation Class 4 in spillway 200 cubic yards at	Three 80/100 words (\$ 3.80) per cubic yard	\$ 760.00
5.	Concrete Class 1 in columns and struts 2,500 cubic yards at	Eighteen 20/100 words (\$ 18.20) per cubic yard	\$ 45,500.00
6.	Concrete Class 2 in diagonal strengthening and top anchorage 950 cubic yards at	Twenty 000 words (\$ 21.20) per cubic yard	\$ 20,140.00
7.	Concrete Class 3 in footings 150 cubic yards at	Thirteen 00/100 words (\$ 13.00) per cubic yard	\$ 1,950.00
8.	Concrete Class 4 in spillway 600 cubic yards at	Seven 30/100 words (\$ 7.30) per cubic yard	\$ 4,380.00
9.	Cement in place in the work 6,500 barrels at	Two 86/100 words (\$ 2.86) per barrel	\$ 18,590.00

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Item No.	Work or Material	Quantity and Price	Amount
10.	Cleaning and placing reinforcing steel in the work furnished by the City	80,000 pounds at One and One (\$ 0.015) per pound <u>Half Cents</u> words	\$ 1,200.00
11.	Reinforcing steel furnished by contractor in place in the work	550,000 pounds at Four Cents (\$ 0.04) per pound words	\$ 22,000.00
12.	Steel tie bars in place in the work including nuts and turnbuckles	55,000 pounds at Seven Cents (\$ 0.07) per pound words	\$ 3,850.00
13.	Steel plates in place in the work	40,600 pounds at Five Cents (\$ 0.05) per pound words	\$ 2,030.00
14.	Drilling holes thru concrete with concussion drill, various sizes	1,700 linear feet at Ninety (\$ 0.90) per linear foot <u>Cents</u> words	\$ 1,530.00
15.	Chipping concrete surface	9,300 square feet at Twenty <u>Five Cents</u> (\$ 0.25) per square foot words	\$ 2,325.00
16.	Chipping keyways	1,650 cubic feet at One 70/100 (\$ 1.70) per cubic foot words	\$ 2,805.00
17.	Grouting	575 drill holes at Sixty Cents (\$ 0.60) each words	\$ 345.00
18.	Drilling 1-1/2 inch anchor holes in spillway	500 linear feet at Fifty Five (\$ 0.55) per linear foot <u>Cents</u> words	\$ 275.00
19.	Drilling 2-1/2 inch or larger anchor holes under footings of vertical columns	1,000 linear feet at Sixty Six (\$ 0.66) per linear foot <u>Cents</u> words	\$ 660.00
			\$ 130,612.50

APPROXIMATE GRAND TOTAL

FOURTH: Should any dispute arise respecting the true value of any work done, of any work omitted, or of any extra work which said second party may be required to do, or respecting the size of any

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payment to said second party during the performance of this contract, said dispute shall be decided by the Hydraulic Engineer, subject to written approval of the City Manager and by the Council evidenced by resolution, and said decision shall be final and conclusive, subject to the approval by the State Director, F.W.A.

FIFTH: The second party shall, at his expense, obtain all necessary permits and licenses, easements, etc. for the construction of the project, except as hereinafter provided, give all necessary notices, pay all fees required by law, and comply with all laws, ordinances, rules and regulations relating to the work and to the preservation of the public health and safety.

SIXTH: The Second Party shall at all times maintain proper facilities and provide safe access for inspection by the First Party and the Government Engineer to all parts of the work, and to the shops wherein the work is in preparation. Where the specifications require work to be specially tested or approved, it shall not be tested or covered up without timely notice, in writing, to the Hydraulic Engineer of its readiness for inspection and without the approval thereof or consent thereto by the latter. Should any such work be covered up without such notice, approval, or consent, it must, if required by the Hydraulic Engineer be uncovered for examination at the Second Party's expense.

SEVENTH: Should said First Party at any time during the progress of said work, request any alterations, deviations, additions, or omissions from the said contract, specifications, or plans, it shall be at liberty to do so, and the same shall in no way affect or make void the contract, but will be added to or deducted from

the amount of said contract price, as the case may be, by a fair and reasonable valuation. The value of any such extra work or change shall be determined in one or more of the following ways:

- (a) By estimate and acceptance in a lump sum.
- (b) By unit prices named in the contract or subsequently agreed upon.
- (c) By cost and percentage or by cost and a fixed fee.

If none of the above methods is agreed upon, the contractor, provided he received an order as above, shall proceed with the work. In such case and also under case (c), he shall keep and present in such form as the Hydraulic Engineer may direct, a correct account of the net cost of labor and materials, together with vouchers. In any case, the hydraulic engineer shall certify to the amount, including reasonable allowance for overhead and profit, due to the contractor. Pending final determination of value, payments on account of changes shall be made on the Hydraulic Engineer's certificate. No extra work shall be performed or change be made unless in pursuance of a written order from the First Party, approved by the State Director, stating that the extra work or change is authorized, and no claim for addition to the contract sum shall be valid unless so ordered.

EIGHTH: If the Second Party should neglect to prosecute the work properly or fail to perform any provision of this contract, the First party, after three days' written notice to the Second Party, may, without prejudice to any other remedy he may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Second Party, provided, however, that

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the State Director ^{PWA} shall approve both such action and the amount charged to the Second Party.

NINTH: If the Second Party should be adjudged a bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if he should fail to make prompt payment to sub-contractors or for material or labor, or persistently disregard laws, ordinances or the instructions of the City of San Diego, or otherwise be guilty of a substantial violation of any provisions of the contract, then the First Party, upon the certificate of the Hydraulic Engineer that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Second Party ten days written notice, terminate the employment of the Second Party and take possession of the premises and of all materials, tools and appliances thereon and finish the work by whatever method he may deem expedient. In such case the Second Party shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the contract price shall exceed the expense of finishing the work including compensation for additional managerial and administrative services, such excess shall be paid to the Second Party. If such expense shall exceed such unpaid balance, the Second Party shall pay the difference to the First Party. The expense incurred by the First Party as herein provided, and the damage incurred through the Second Party's default, shall be

certified by the Hydraulic Engineer.

TENTH: If the work should be stopped under an order of any court, or other public authority, for a period of ninety days, through no act or fault of the Second Party or of anyone employed by him, or if the Hydraulic Engineer should fail to issue any certificate for payment within fifteen days after it is due, or if the First Party should fail to pay the Second Party within fifteen days of its maturity and presentation, any sum certified by the Hydraulic Engineer or awarded by arbitrators, then the Second Party may, upon fifteen days' written notice to the First Party and the Hydraulic Engineer, stop work or terminate this contract and recover from the First Party payment for all work executed and any loss sustained upon any plant or materials and reasonable profit and damages.

ELEVENTH: The time during which said Second Party is delayed in said work by the acts or neglect of said First Party, or its employees or those under it by contract or otherwise, or by changes ordered in the work, or by strikes, lockouts, fire, unusual delay in transportation, unavoidable casualties or any causes beyond the Second Party's control, or by delay authorized by the First Party, or by any cause which the Hydraulic Engineer shall decide to justify the delay, then the time of completion shall be extended for such reasonable time as the Hydraulic Engineer may decide.

This article does not exclude the recovery of damages for delay by either party under other provisions in the contract documents.

TWELFTH: CONSTRUCTION REGULATIONS.- The following rules and regulations shall be incorporated verbatim as a separate chapter in all contracts (except subcontracts) for work to be performed at the site of any project financed in whole or in part by the Federal Emergency Administration of Public Works under the Emergency Relief Appropriation Act of 1935:

1. EMPLOYMENT SERVICE AND LABOR PREFERENCES.- With respect to all persons employed on projects,¹ except as otherwise² provided in Regulation No. 2:

(a) Such persons shall be referred for assignment to such work by the United States Employment Service, and

(b) Preference in employment shall be given to persons from the public relief rolls, and, except with the specific authorization of the Works Progress Administration, at least 90 percent of the persons employed on any project¹ shall have been taken from the public relief rolls: Provided, however, That, expressly subject to the requirement of subdivision (b), the supervisory, administrative, and highly skilled workers on the project,¹ as defined in the specifications,³ need not be so referred by the United States Employment Service.

(c) AMENDMENT OF OCTOBER 7, 1935, TO PARAGRAPH 1.

(1) The State works progress administrator, or representatives designated by him in writing, are hereby authorized to exempt projects from the requirement that 90 percent of all persons working on a project shall have been taken from the public relief rolls.

- (2) No exemption authorized by the foregoing paragraph (1) shall be granted unless the United States Employment Service (or such other agency for the placement of workers as may be designated by the Federal Works Progress Administrator to act in lieu of the United States Employment Service) shall have certified to such State works progress administrator or a representative designated by him, that there are no qualified workers on the public relief rolls available within the vicinity of the project. The term 'within the vicinity of the project' shall be construed to mean an area within which the worker may travel to and from work without unusual expenditure of time or excessive cost for transportation.
- (3) In the event that an exemption is granted for a project pursuant to the provisions of the foregoing paragraph (1), the United States Employment Service (or such other agency for the placement of workers as may be designated by the Federal Works Progress Administrator to act in lieu of the United States Employment Service) in assigning workers to such project who are not taken from the relief rolls, shall give preference, first, to bona fide residents of the political subdivision which is financing, in part, the construction of the project, and, second, to bona fide residents of the county in which the project is located, to the extent that labor technically qualified to perform the work is available in such political subdivision and county.
- (4) The foregoing provisions are subject to the further condition that when organized labor is desired and requested by the contractor, all organized labor, skilled and unskilled, employed upon the project shall be supplied by the employment agencies designated by the United States Employment Service (or such other agency for the placement of workers as may be designated by the Federal Works Progress Administrator to act in lieu of the United States Employment Service) from the membership of recognized unions, with preference, first, to those members of such unions who constitute regular employees of the contractor and who are on the local public relief rolls, second, to other members of such unions who are on the relief rolls, and upon the exhaustion of union members on such rolls, to any other members of the union. In the event, however, that qualified workers are not made available from the membership of the unions within

48 hours (Sundays and holidays excepted) after a request therefor is filed by the contractor, and the employment agency has notified the unions of the receipt of such request, such labor may be chosen by the contractor from other qualified workers, supplied by employment agencies designated by the United States Employment Service (or such other agency for the placement of workers as may be designated by the Federal Works Progress Administrator to act in lieu of the United States Employment Service). The provisions of this paragraph are subject to the further requirement that the preponderance of labor employed upon a project shall be taken from bona fide residents of the political subdivision which is financing, in part, the construction of the project, and the remainder from the county in which the project is located, to the extent that labor technically qualified to perform the work is available therein.

2. QUALIFICATIONS FOR EMPLOYMENT.- (a) No persons currently serving sentence to a penal or correctional institution shall be employed on the project.¹

(b) No person under the age of sixteen (16) years, and no one whose age or physical condition is such as to make his employment dangerous to his health or safety, or the health and safety of others, may be employed on the project. This paragraph shall not be construed to operate against the employment of physically handicapped persons, otherwise employable, where such persons may be safely assigned to work which they can ably perform.

(c) Except as specifically provided above, workers who are qualified by training and experience and certified for work on the project by the United States Employment Service shall not be discriminated against on any grounds whatsoever. The contractor may dismiss any employee not qualified to perform the work for

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which he has been referred, subject to disapproval by the owner.

(d) Employees shall have the right to organize and bargain collectively through representatives of their own choosing, and shall be free from the interference, restraint, or coercion of employers of labor, or their agents, in the designation of such representatives or in self-organization or in other concerted activities for the purpose of collective bargaining or other mutual aid or protection. No employee and no one seeking employment shall be required as a condition of employment to join any company union or to refrain from joining, organizing, or assisting a labor organization of his own choosing.

3. HOURS OF WORK.- (a) Except in case of emergency:

- (1) The maximum hours of work for manual labor shall be 8 hours per day and 130 hours per month. On the projects located at points so remote and inaccessible that camps or floating plants are necessary, the maximum hours of work for manual labor shall be 8 hours per day and 40 hours per week.
- (2) The maximum hours of work for cooks, camp assistants, and clerical and other nonmanual employees such as watchmen, policemen, and messengers, shall be 8 hours per day and 40 hours per week.
- (3) Administrative and supervisory employees, including executive employees, timekeepers and storekeepers, who perform in a work-week not more than 15 hours of manual labor (or, in case the project is being constructed on a 40-hour week basis, not more than 20 hours) shall not be subject to limitation of hours of work. any
- (4) Wherever practicable, the contractor shall perform the work in at least double shifts of labor, unless otherwise provided in this contract. The contractor shall not knowingly employ under this contract any person engaged in any other gainful occupation whose weekly hours

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of labor on such occupation, together with his hours of labor on the project, exceed the limitations of hours prescribed for employees of his classification under this contract.

- 1 The term "projects" or "project" as here used means the portion of the project covered by this contract.
- 2 Exception relates only to employees of the owner. Regulation no. 2 is Executive Order No. 7060, approved by the President June 5, 1935.
- 3 The term "specifications" as here used means any one of the contract documents.

(b) Nothing in these regulations is intended to authorize hours or days of work in excess of the limitations of any applicable law or regulation.

4. WAGES AND PAY ROLLS.- (a) There shall be paid each employee engaged in the trade or occupation listed below not less than the hourly wage rate set opposite the same, namely:

<u>Trade or Occupation</u>	<u>Per Diem Wage</u>	<u>Hourly Wage Rate</u>	<u>Rates for Legal Holidays & Overtime</u>	
			Time	& One-half
Auto Mechanic	\$6.00	\$.75	do	
Blacksmiths	6.00	.75	do	
Cableway Operators	8.00	1.00	do	
Carpenter Foremen	8.80	1.10	do	
Carpenters	8.00	1.00	do	
Cement Finishers	8.00	1.00	do	
Compressor Operators	6.00	.75	do	
Concrete Finishers	8.00	1.00	do	
Concrete Foremen	8.80	1.10	do	
Concrete Form Builders	8.00	1.00	do	
Concrete Spreaders	5.00	.62-1/2	do	
Concrete Tampers	5.00	.62-1/2	do	
Concrete Mixermen	5.00	.62-1/2	do	
Crane Operators	9.00	1.12-1/2	do	
Derrick Operators	9.00	1.12-1/2	do	
Dragline Operators	9.00	1.12-1/2	do	

<u>Trade or Occupation</u>	Per Diem	Hourly	Rates for
	<u>Wage</u>	<u>Wage Rate</u>	<u>Legal Holidays & Overtime</u>
Drillers	\$7.00	\$.87-1/2	Time & One-half
Drill Sharpeners	6.00	.75	do
Electricians	9.00	1.12-1/2	do
Excavation Foremen	6.00	.75	do
General Foremen	8.80	1.10	do
Hoist Operators	9.00	1.12-1/2	do
Laborers, Common	5.00	.62-1/2	do
Materialmen	6.00	.75	do
Mechanics	6.00	.75	do
Mechanic Trouble Shooters	6.00	.75	do
Mortar Men	8.00	1.00	do
Pump Men	6.00	.75	do
Reinforcing Steel Foremen	8.80	1.10	do
Reinforcing Steel Workers: (Placers and Tiers)	8.00	1.00	do
Riggers (other than heavy)	9.00	1.12-1/2	do
Shovel Operators:			
1 yard or over	10.00	1.25	do
Under 1 yard	8.00	1.00	do
Shovel Cranesmen	6.00	.75	do
Shovel Oilers	6.00	.75	do
Shovel Fitmen	5.00	.62-1/2	do
Superintendents	8.80	1.10	do
Tractor Operators	6.00	.75	do
Timekeepers	6.00	.75	do
Truck Drivers under 15500 pounds	5.44	.68	do
Truck Drivers over 15500 pounds	6.00	.75	do
Welders	8.00	1.00	do

Any craft or employment not specifically mentioned in the foregoing Schedule of rates shall be paid not less than \$5.00 per diem of 8 hours.

If after the award of this contract it becomes necessary to employ any person in a trade or occupation not herein listed, such person shall be paid not less than such hourly rate of wage, fairly comparable to the above rates, as shall be approved by the State Director, and such minimum wage rate shall be retroactive to the time of the initial employment of such person in such trade or occupation.

(b) Unless otherwise provided by law, claims or disputes pertaining to the classification of labor under this contract shall be decided by the owner subject to the

right of final review by the State Director whose decision shall be binding on all parties concerned.

(c) All employees shall be paid in full, at least once each week within 3 days after the close of the pay-roll period, in lawful money of the United States, unless otherwise authorized in writing by the State Director: Provided, however, that this paragraph shall not be construed to prohibit deductions required by law and collection of obligations by legal process.

(d) A clearly legible statement of the minimum wage rate to be paid each trade and occupation employed under this contract and of the authorized deductions therefrom, if any, shall be posted by the contractor in a prominent and easily accessible place at the site of the work.

(e) The contractor and each subcontractor shall prepare the pay rolls upon forms to be prescribed and in accordance with instructions to be furnished by the Works Progress Administration. Not later than the day following the payment of the wages a certified legible copy of each pay roll, whether paid by the contractor or any subcontractor, shall be transmitted by the contractor to such office as may be designated by the Works Progress Administration. The contractor and each subcontractor shall submit reports at such times and on such forms as may be required by the Works Progress Administration, covering purchases of, and requisitions for, materials, together with such other information as may be required to determine the progress and status of the completion of the work on the project. Such pay rolls shall be sworn to in

accordance with the "Regulations Issued Pursuant to So-called Kick-back Statute", issued jointly by the Secretary of the Treasury and the Secretary of the Interior on January 12, 1935, a copy of which is herein elsewhere set forth.

5. ACCIDENT PREVENTION.- Precaution shall be exercised at all times for the protection of persons and property. The safety provisions of applicable laws, building and construction codes shall be observed. Machinery and equipment and other hazards shall be guarded in accordance with the safety provisions of the Manual of Accident Prevention in Construction, published by the Associated General Contractors of America, to the extent that such provisions are not inconsistent with applicable law or regulation.

6. INSURANCE.- The contractor shall not commence work under this contract until he has obtained all insurance required under this paragraph and such insurance has been approved by the Owner and the State Director, nor shall the contractor allow any subcontractor to commence work on his subcontract until all similar insurance required of the subcontractor has been so obtained and approved.

(a) Compensation Insurance.- The contractor shall take out and maintain during the life of this contract adequate Workmen's Compensation Insurance for all his employees employed at the site of the project and, in case any work is sublet, the contractor shall require the subcontractor similarly to provide Workmen's Compensation Insurance for the latter's employees, unless such employees are covered by the protection afforded by the contractor. In case any class of

employees engaged in hazardous work under the contract at the site of the project is not protected under the Workmen's Compensation statute, or in case there is no applicable Workmen's Compensation statute, the contractor shall provide, and shall cause each subcontractor to provide, General Liability for the protection of his employees not otherwise protected.

(b) Public Liability and Property Damage Insurance.- The contractor shall take out and maintain during the life of this contract such Public Liability and Property Damage insurance as shall protect him and any subcontractor performing work covered by this contract, from claims for damages for personal injury, including wrongful death, as well as from claims for property damages, which may arise from operations under this contract, whether such operations be by himself or by any subcontractor or anyone directly or indirectly employed by either of them. The amounts of such insurance shall be as follows:

Public Liability Insurance in an amount not less than \$50,000 for injuries, including wrongful death, to any one person, and, subject to the same limit for each person, in an amount not less than \$100,000, on account of one accident, and Property Damage Insurance in an amount not less than \$50,000.

Provided, however, that the Owner, with the approval of the State Director, may accept insurance covering a subcontractor in character and amounts less than the standard requirements set forth under this subparagraph (b) where such standard requirements appear excessive because of the character or extent of the work to be performed by such subcontractor.

(c) The following special hazards shall be covered by rider or riders to the policy or policies required under sub-paragraph (b) hereof or by separate policies of insurance in amounts as follows:

Automobile and/or truck	\$ 5,000-\$10,000
Steam boilers	\$10,000-\$20,000
Hoists and/or elevators	\$ 5,000-\$10,000

"7- MATERIALS - (a) DOMESTIC. It is further understood and agreed, that in accordance with the provisions of Chapter 226, Statutes of California, 1933, it will be required that only such un-manufactured articles, materials and supplies as have been mined or produced in the United States, and only such manufactured articles, materials and supplies as have been manufactured in the United States, substantially all from articles, materials and supplies mined, produced or so manufactured, as the case may be, in the United States, shall be used in the performance of the contract. However, as also provided in said Chapter 226, such provisions shall not apply if articles, materials or supplies of the class or kind to be used, or the articles, materials or supplies from which they are manufactured, are not mined, produced or manufactured, as the case may be, in the United States. The above references to the United States mean the United States of America, and include any Territory or insular possession thereof."

(b) Convict Made.- No materials manufactured or produced in a penal or correctional institution shall be used on or incorporated in the project, unless required by law.

8. INSPECTION.- (a) The Administrator, through his authorized agents, and the Works Progress Administration, through its authorized agents, shall have the right to inspect all work

and materials, shall have access to all pay rolls, records of personnel, invoices of material, and all other data and records relevant to the performance of this contract.

(b) Facilities shall be provided as set forth in the specifications for the use of the Government Inspector.

9. CONSTRUCTION REPORTS.- The contractor shall submit to the Owner schedules of the cost of labor, costs and quantities of materials and other items, supported as to correctness by such evidence as, and in such form as, the Administrator through his authorized agents may require. Submission of this information shall be a condition precedent to any payment under this contract. In addition to any records herein required, the following records, on forms to be furnished by the Public Works Administration, are required:

- (1) Detailed Estimate (Contract "break-down").
- (2) Construction Schedule (Chart of Contemplated Progress).
- (3) Periodical Estimates for Partial Payment.

10. DEPARTMENT OF LABOR REPORTS.- The contractor and each subcontractor shall report to the United States Department of Labor monthly, within five days after the close of each calendar month upon forms to be prescribed, and in accordance with instructions to be furnished, by the United States Department of Labor, covering the number of persons on their respective pay rolls directly connected with the project, the aggregate amounts of such pay rolls and the man-hours worked, and an itemized statement of the total expenditures for materials. The contractor shall also furnish to the United States Department of Labor the names and addresses of all subcontractors on the work at the earliest date practicable.

11. PAYMENTS.- (a) The contractor shall provide all labor, services, material, and equipment necessary to perform and complete the work under this contract. Except as otherwise approved by the owner and the State Director, the contractor (1) shall pay for in full all transportation and utility services on or before the 20th day of the month following the calendar month in which such services are rendered, and (2) shall pay for all materials, tools, and other expendible equipment, to the extent of 90 percent of the cost thereof, on or before the 20th day of the month following the calendar month in which such materials, tools, and equipment are delivered to the project, and the balance of the cost within 30 days after completion of that part of the work in or on which such materials, tools, and other equipment are incorporated or used.

(b) In the absence of other provisions in this contract more favorable to the subcontractor, the contractor shall pay each subcontractor, within five days after each payment made to the contractor, the amount allowed the contractor for and on account of the work performed by the subcontractor, to the extent of the subcontractor's interest therein.

(c) Within the first fifteen (15) days of each calendar month the Owner will make partial payment to the Contractor for work performed during the preceding calendar month on estimate certified by the Contractor, the Owner and the government inspector. Twenty-five per cent (25%) of each approved estimate shall be retained by the Owner until final completion and acceptance of all work covered by this contract, all as provided in Paragraph "Third" of this contract.

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(d) Compliance with the provisions of subparagraphs (a) and (b) of this paragraph is a condition precedent to partial payment under subparagraph (c) hereof.

12. WAGE CLAIMS AND ADJUSTMENTS.- In cases of underpayment of wages, the Owner will withhold from the contractor out of payments due an amount sufficient to pay persons employed on the work covered by this contract the difference between the wages required to be paid under this contract and the wages actually paid such employees for the total number of hours worked. The amounts withheld shall be disbursed by the Owner for and on account of the contractor, to the respective employees to whom they are due.

13. SIGNS.- The contractor shall furnish signs bearing the legend:

"Federal Works Project No. California 1223 R
Public Works Administration"

as required in the specifications and shall erect the same at such locations as may be designated by the Government Inspector.

14. OBSERVANCE OF RULES.- All reasonable requirements which the Administrator or his authorized agents may make toward the effectuation of the matters covered in these Construction Regulations shall be observed in the performance of the work.

15. SUBCONTRACTS.- (a) The contractor shall perform, directly and without subcontracting, not less than 25 percent of the construction, to be calculated on the basis of the total contract price. No part of this contract shall be sublet without the approval of the Owner and the State Director.

(b) If the contractor shall sublet any part of this contract, the contractor shall be as fully responsible to the Owner for the acts and omissions of his subcontractor and of the persons either directly or indirectly employed by his subcontractor, as he is for the acts and omissions of persons directly employed by himself.

(c) Paragraphs 1 to 5 inclusive, 7 to 10 inclusive, 11(a) and (b), 14, 18, 19, 20, the Regulations Issued Pursuant to So-called "Kick Back Statute" and the penalty clauses set forth in Section 9 of the Act and Section 35 of the Criminal Code, as amended, shall be inserted verbatim in all construction subcontracts under this contract.

16. ASSIGNMENT OF CONTRACT.- The contractor shall not assign this contract or any part hereof without the approval of the Owner and State Director, nor without the consent of surety unless the surety has waived its right to notice of assignment.

17. TERMINATION FOR BREACH.- In the event that any of the provisions of this contract are violated by the contractor or by any of his subcontractors, the Owner may, subject to the approval of the State Director, and shall, upon request of the Administrator, serve written notice upon the contractor and the surety of its intention to terminate such

contract, such notices to contain the reasons for such intention to terminate the contract, and, unless within 10 days after the serving of such notice upon the contractor such violation shall cease and satisfactory arrangement for correction be made, the contract shall, upon the expiration of said 10 days, cease and terminate. In the event of any such termination, the O w n e r shall immediately serve notice thereof upon the surety and the contractor, and the surety shall have the right to take over and perform the contract, provided however, that if the surety does not commence performance thereof within 30 days from the date of the mailing to such surety of notice of termination, the O w n e r may take over the work and prosecute the same to completion by contract for the account and at the expense of the contractor, and the contractor and his surety shall be liable to the O w n e r for any excess cost occasioned the O w n e r thereby, and in such event the O w n e r may take possession of and utilize in completing the work, such materials, appliances, and plant as may be on the site of the work and necessary therefor.

18. PRIORITY OF CONSTRUCTION REGULATIONS.- Any provisions of this contract in conflict or inconsistent with the requirements of these Regulations, except such provisions as are required by applicable law or regulation, shall be void to the extent of such conflict or inconsistency.

19. DEFINITIONS.- The following terms as used in this contract are respectively defined as follows:

"Act": The Emergency Relief Appropriation Act of 1935.

"P.W.A." or "Public Works Administration": The Federal

Emergency Administration of Public Works.

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"Administrator": The Federal Emergency Administrator of Public Works.

"State Director": State Director (P.W.A.), his duly authorized representative or any person designated by the Administrator to perform his duties or functions.

"Government Inspector": The representative of the Inspection Division (P.W.A.).

"Owner": The public body, agency, or instrumentality which is a party hereto and for which this contract is to be performed.

"Emergency": A temporary unforeseen occurrence or combination of circumstances which endangers life or property and calls for immediate action or remedy.

"Material": Materials incorporated in the project, or used or consumed in the performance of the work.

"Subcontractor": A person, firm, or corporation supplying labor and materials or labor for work at the site of the project.

"Work at Site of Project": Work to be performed, including work normally done, on the location of the project.

20. Paragraphs 1, 2(a), (b) and (c), 3(a) (1) and (2), 4(e), 8(a) and 10 incorporate rules and regulations issued by the President under the authority of section 6 of the Act. Any willful violation of any such rule or regulation is punishable by fine of not to exceed \$1,000.

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THIRTEENTH: Pursuant to requirements contained in various rules, regulations and bulletins of the Federal Emergency Administration of Public Works, the following provisions are hereby made a part of this contract:

(1) Mill and Factory Inspection and Testing of Materials.

The Contractor shall notify the first party a sufficient time in advance of the manufacture or production of materials, to be supplied by him under this contract, in order that the first party may arrange for Mill or Factory inspection and testing of same.

Any materials shipped by the Contractor from the factory prior to having satisfactorily passed such testing and inspection by the first party's representative, or prior to the receipt of notice from said representative that such testing and inspection will not be required, shall not be incorporated on the job.

The Contractor shall also furnish to the first party, in triplicate, certified copies of all required factory and mill test reports.

(2) Substitution for Patented and Specified Articles. Whenever in the specifications, any material or process is indicated or specified by patent or proprietary name and/or by name of manufacturer, such specifications shall be deemed to be used for the purpose of facilitating description of the material and/or process desired, and shall be deemed to be followed by the words "Or Equivalent", and the contractor may offer any material or process which shall be equal in every respect to that so indicated or specified; provided, however, that if the material,

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 and P.W.A. Regulations. Work, material, or machinery not in accordance with these specifications, in the opinion of the engineer and P.W.A. Regulations, 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 The City of San Diego 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 the City Manager 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

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of the contract period no liquidated damages shall accrue for a period equivalent to such delay.

12.- Suspension of Contract.- If the Second Party should be adjudged a bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if he should fail to make prompt payment to sub-contractors or for material or labor, or persistently disregard laws, ordinances or the instructions of the City of San Diego, or otherwise be guilty of a substantial violation of any provisions of the contract, then the First Party, upon the certificate of the Hydraulic Engineer that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Second Party ten days written notice, terminate the employment of the Second Party and take possession of the premises and of all materials, tools and appliances and finish the work by whatever method he may deem expedient. In such case the Second Party shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of

193 ; that no rebates or deductions from any wages due any such person as set out on the attached pay roll have been directly or indirectly made; and that, to the best of my knowledge and belief, there exists no agreement or understanding with any person employed on the project, or any person whatsoever, pursuant to which it is contemplated that I or anyone else shall, directly or indirectly, by force, intimidation, threat or otherwise, induce or receive any deductions or rebates in any manner whatsoever from any sum paid or to be paid to any person at any time for labor performed or to be performed under the contract for the above named project.

Sworn to before me this _____ day of _____, 193 .

Section 3. Said affidavit shall be executed and sworn to by the officer or employce of the contractor or subcontractor who supervises the payment of its employecs.

Said affidavit shall be delivered, within three days after the payment of the pay roll to which it is attached, to the Government representative in charge at the site of the particular project in respect of which it is furnished, who shall forward the same promptly to the Federal agency having control of such project. If no Government representative is in charge at the site, such affidavit shall be mailed within such three-day period to the Federal agency having control of the project.

Section 4. At the time upon which the first affidavit with respect to the wages paid to employecs is required to be filed by a contractor or subcontractor pursuant to the requirements of these regulations, there shall also be filed in the manner required by Section 3 hereof a statement under oath by the contractor or subcontractor, setting forth the name of its officer or employce who supervises the payment of employecs, and that such officer or employce is in a position to have full knowledge of the facts set forth in the form of

affidavit required by Section 2 hereof. A similar affidavit shall be immediately filed in the event of a change in the officer or employee who supervises the payment of employees. In the event that the contractor or subcontractor is a corporation, such affidavit shall be executed by its president or a vice president. In the event that the contractor or subcontractor is a partnership, such affidavit shall be executed by a member of the firm.

Section 5. These regulations shall be made a part of each contract executed after the effective date hereof by the Government for any of the purposes enumerated in Section 2 hereof.

Section 6. These regulations shall become effective on January 15, 1935.

The clause in the pay-roll affidavit which reads ". . . that the attached pay roll is a true and accurate report of the full weekly wages due and paid to each person employed by the said contractor. . ." is construed by the Public Works Administration to mean:

- (a) Wages due are the wages earned during the pay period by each person employed by the contractor, less any deductions required by law.
- (b) At the time of signing the affidavit, the wages due each employee have either been paid to him in full or are being held subject to claim by him.
- (c) Such unpaid wages will be paid in full on demand of the employee entitled to receive them.

The clause ". . . that no rebates or deductions from any wages due any such person as set out on the attached pay roll have been directly or indirectly made" does not apply to any

legitimate deductions mentioned above which enter into the computation of full weekly wages due.

The "Regulations issued Pursuant to So-Called Kick-back Statute" shall not be construed to prohibit deductions required by law or deductions for health, sickness, unemployment, or other similar benefits voluntarily authorized by permanent employees of equipment suppliers engaged in installation of the equipment at the site of the project.

(4) Section 9 of the Emergency Relief Appropriation Act of 1935, reads as follows:

"Any person who knowingly and with intent to defraud the United States makes any false statement in connection with any application for any project, employment, or relief aid under the provisions of this joint resolution, or diverts, or attempts to divert, or assists in diverting for the benefit of any person or persons not entitled thereto, any moneys appropriated by this joint resolution, or any services or real or personal property acquired thereunder, or who knowingly, by means of any fraud, force, threat, intimidation, or boycott, deprives any person of any of the benefits to which he may be entitled under the provisions of this joint resolution, or attempts so to do, or assists in so doing, shall be deemed guilty of a misdemeanor and shall be fined not more than \$2,000 or imprisoned not more than one (1) year, or both."

"Section 35 of the Criminal Code, as amended, provides a penalty of not more than \$10,000 or imprisonment of not more than ten (10) years, or both, for knowingly and willfully making or causing to be made "any false or fraudulent statements . . . or use or cause to be made or used any false . . . account, claim certificate, affidavit, or deposition, knowing the same to contain any fraudulent or fictitious statement. . ." relating to any matter within the jurisdiction of any governmental department or agency.

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FOURTEENTH: It is further understood and agreed that, pursuant to the provisions of Chapter 398 of the 1931 Statutes of the State of California, no person, firm, partnership, association or corporation, or agent thereof, doing any work as a contractor or sub-contractor upon any public work being done for or under the authority of this State, or any officer or department thereof, or for or under the authority of any county, city and county, city, town, township, district, or any other political subdivision thereof, or any officer or department thereof, shall knowingly employ or cause or allow to be employed thereon any alien - meaning thereby any person not a born or fully naturalized citizen of the United States - except in cases of extraordinary emergency caused by fire, flood, or danger to life or property, or except to work upon public military or naval defences or works in time of war; provided, however, that within thirty (30) days after any alien is permitted to work thereon due to extraordinary emergency, the contractor doing the work, or his authorized agent, shall file with the officer or public body awarding the contract a report, verified by his oath, setting forth the nature of the said emergency and containing the name of the said alien and each date he was permitted to work, and failure to file said report within the said time shall be prima facie evidence that no such extraordinary emergency existed. Such contractor and each sub-contractor shall also keep, or cause to be kept, an accurate record showing the names and citizenship of all workers employed by him, in connection with the said public work, which record shall be open at all reasonable hours to the inspection of the officer or public body awarding the contract, his or its deputies and agents and to the Chief of the Division of Labor Statistics and Law Enforcement of the State Department of Industrial Relations, his deputies and agents.

It is hereby further understood and agreed that for each violation of the above stipulation, said contractor shall forfeit to the City of San Diego as a penalty the sum of ten (10) dollars for each alien knowingly employed in the execution of this agreement, by him or by any sub-contractor under him, for each calendar day, or portion thereof, during which such alien is permitted or required to labor in violation of this stipulation and the provisions of said Chapter 398 of the 1931 Statutes of the State of California.

FIFTEENTH: Pursuant to the Statutes of the State of California, or local law thereto applicable, and in compliance with the Regulations of the Federal Emergency Administration of Public Works, the Council of the City of San Diego has ascertained the general prevailing rate of per diem wages and rates for legal holiday and overtime work in the locality in which this work is to be performed, for each craft or type of workmen or mechanic needed to execute this contract. The prevailing rates so determined are as follows:

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Trade or Occupation	Rates for		
	Per Diem Wage	Hourly Wage Rate	Legal Holiday & Overtime
Auto Mechanic	\$6.00	\$.75	Time & One-half
Blacksmiths	6.00	.75	do
Cableway Operators	8.00	1.00	do
Carpenter Foremen	8.80	1.10	do
Carpenters	8.00	1.00	do
Cement Finishers	8.00	1.00	do
Compressor Operators	6.00	.75	do
Concrete Finishers	8.00	1.00	do
Concrete Foremen	8.80	1.10	do
Concrete Form Builders	8.00	1.00	do
Concrete Spreaders	5.00	.62-1/2	do
Concrete Tampers	5.00	.62-1/2	do
Concrete Mixermen	5.00	.62-1/2	do
Crane Operators	9.00	1.12-1/2	do
Derrick Operators	9.00	1.12-1/2	do
Dragline Operators	9.00	1.12-1/2	do
Drillers	7.00	.87-1/2	do
Drill Sharpeners	6.00	.75	do
Electricians	9.00	1.12-1/2	do
Excavation Foremen	6.00	.75	do
General Foremen	8.80	1.10	do
Hoist Operators	9.00	1.12-1/2	do
Laborers, Common	5.00	.62-1/2	do
Materialmen	6.00	.75	do
Mechanics	6.00	.75	do
Mechanic Trouble Shooters	6.00	.75	do
Mortar Men	8.00	1.00	do
Pump Men	6.00	.75	do
Reinforcing Steel Foremen	8.80	1.10	do
Reinforcing Steel Workers: (Placers and Tiers)	8.00	1.00	do
Riggers (other than heavy)	9.00	1.12-1/2	do
Shovel Operators:			
1 yard or over	10.00	1.25	do
Under 1 yard	8.00	1.00	do
Shovel Cranesmen	6.00	.75	do
Shovel Oilers	6.00	.75	do
Shovel Pitmen	5.00	.62-1/2	do
Superintendents	8.80	1.10	do
Tractor Operators	6.00	.75	do
Timekeepers	6.00	.75	do
Truck Drivers under 15500 pounds	5.44	.68	do
Truck Drivers over 15500 pounds	6.00	.75	do
Welders	8.00	1.00	do

Any craft or employment not specifically mentioned in the foregoing schedule of rates shall be paid not less than \$5.00 per diem of 8 hours.

The foregoing schedule of per diem wages is based on a working day of 8 hours. The hourly wage rate prescribed hereinabove is the per diem rate divided by the aforementioned number of hours constituting a working day.

It shall be mandatory upon the contractor herein, and upon any sub-contractor under him, to pay not less than the said specified rates to all laborers, workmen and mechanics employed by them in the execution of the contract.

It is hereby further agreed that said contractor shall forfeit to the City of San Diego, as a penalty, ten (\$10) dollars for each laborer, workman or mechanic employed for each calendar day or portion thereof, such laborer, workman, or mechanic is paid less than the said stipulated rates for any work done under this contract, by him or by any sub-contractor under him. The contractor, and each sub-contractor, shall keep or cause to be kept an accurate record showing the names and occupations of all laborers, workmen and mechanics employed by him in connection with the execution of this contract or any subcontracts thereunder, and showing also the actual per diem wages paid to each of such workers, which record shall be open at all reasonable hours to the inspection of the City of San Diego, awarding this contract, its officers and agents, and to the Chief of the Division of Labor Statistics and Law Enforcement of the State Department of Industrial Relations, his deputies and agents.

SIXTEENTH: It is further understood and agreed that, in accordance with the provisions of Section 653-c of the Penal Code of the State of California, eight hours' labor shall constitute a day's work, and no laborer, workman or mechanic in the employ of said Contractor, or any Sub-contractor, doing or contracting to do any part of the work contemplated by this agreement, shall be required or permitted to work more than eight (8) hours in any one calendar day, except in cases of extraordinary emergency caused by fire, flood, or danger to life and property; provided, however, that within thirty (30) days after any employee is permitted to work over eight (8) hours in one calendar day due to such extraordinary emergency, the Contractor doing the work, or his duly authorized agent, shall file with the City of San Diego, a report verified by his oath, setting forth the nature of the said emergency.

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which report shall contain the name of said worker and the hours worked by him on the said day; and the Contractor, and each sub-contractor, shall also keep an accurate record showing the names and actual hours worked of all workers employed by him in connection with the work contemplated by this agreement, which record shall be open at all reasonable hours to the inspection of the City of San Diego or its officers or agents and to the Chief of the Division of Labor Statistics and Law Enforcement of the Department of Industrial Relations, his deputies or agents; and it is hereby further agreed that said Contractor shall forfeit as a penalty to the City of San Diego the sum of ten (\$10) dollars for each laborer, workman, or mechanic employed in the execution of this contract by him or by any sub-contractor under him, for each calendar day during which such laborer, workman or mechanic is required or permitted to labor more than eight (8) hours in violation of this stipulation.

SEVENTEENTH: It is further understood and agreed, that in accordance with the provisions of Chapter 226, Statutes of 1933, it will be required that only such unmanufactured articles, materials and supplies as have been mined or produced in the United States, and only such manufactured articles, materials and supplies as have been manufactured in the United States, substantially all from articles, materials and supplies mined, produced or so manufactured, as the case may be, in the United States, shall be used in the performance of the contract. However, as also provided in said Chapter 226, such provisions shall not apply if articles, materials or supplies of the class or kind to be used, or the articles, materials or supplies from which they are manufactured, are not mined, produced or manufactured, as the case may be, in the United States. The above references to the United States mean the United States of America, and include any Territory or insular possession thereof.

EIGHTEENTH: It is further understood and agreed, that, pursuant to the provisions of Chapter 1039 of the 1933 Statutes of the State of California, known as the California Industrial Recovery Act, the contractor shall give a preference of fifteen (15%) per cent to supplies, articles, and materials, mined, produced, manufactured, or supplied in observance of any code of fair competition approved, prescribed, or issued under Title I of the National Industrial Recovery Act, or under any similar law of the State of California, or in pursuance of any agreement entered into or approved under said laws, or in conformity with the terms prescribed in any licenses issued under said laws, as the case may be, and which concerns such trade or industry and subdivision thereof as may be involved.

NINETEENTH: The time limit for the completion or performance of this contract shall be 240 calendar days from and after the date of final approval of this contract by the State Director, PWA, and should said performance not be completed, to the satisfaction

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of the City of San Diego at the time hereinabove stated, there will be deducted from the final payment due the contractor the sum of twenty-five (\$25.00) dollars per day as liquidated damages and not as a penalty, for each day's delay after the expiration of such period until final completion of all work covered by this contract and acceptance thereof by the owner.

TWENTIETH: This contract shall not be effective until it has been approved as to final execution by the State Director P.W.A.

TWENTY-FIRST: The construction provided for in this contract being financed in part by funds provided by the Federal Emergency Administration of Public Works, it is hereby agreed that each of the parties hereto shall be subject to and bound by, and this contract shall be deemed to include all laws, rules, and regulations established by the United States and/or by said Federal Emergency Administration of Public Works, applicable to this contract, whether or not specifically set forth herein. All such laws, rules and regulations shall prevail over any and all provisions that may be contained in this contract or any part thereof, inconsistent or in conflict therewith, except for such specific departures therefrom as are expressly permitted by the Federal Emergency Administrator of Public Works. The 'Construction Regulations' prescribed by the Federal Emergency Administration and included in the contract documents herein are hereby particularly referred to, without limitation to the generality of the foregoing.

IN WITNESS WHEREOF this contract is executed by a majority of the members of the Council of the City of San Diego, under and pursuant to a resolution authorizing such execution, 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.

THE CITY OF SAN DIEGO

By Percy J. Benbough
A. W. Bennett
Raymond M. Wansley
Walter C. Wurfel
Harry Warburton
Bruce Stannard
John S. Siebert
Members of the Council

(SEAL)

ATTEST:

Allen H. Wright
City Clerk
By Fred W. Sick
Deputy

M. H. Golden
Contractor

ATTEST:

Bilda C. Fatland

(If executed by an individual or partnership contractor, appropriate changes shall be made in the last preceding paragraph.)

I hereby approve the form and legality of the foregoing contract this 24 day of March 1936.

C. L. Byers
City Attorney of The City of
San Diego.

Approved as to final execution

State Director P.W.A.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

WHEREAS, the Council of the City of San Diego, by Resolution No. 64135, passed March 17, 1936, awarded to

M. H. Golden

hereinafter designated as the "Principal", a Contract for constructing The

Hodges Reservoir Dam Strengthening

and

WHEREAS, said Principal is required under the terms of said contract to furnish a Bond for the faithful performance of said contract;

NOW, THEREFORE, We, the Principal and Massachusetts Bonding

and Insurance Company, a Massachusetts Corporation,

as Surety, are held and firmly bound unto the City of San Diego, hereinafter called the "City" in the penal sum of One Hundred Thirty

Thousand Six Hundred DOLLARS (\$ 130,612.50) lawful money of the Twelve and 50/100 United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the above bounden principal, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the said contract and any alteration thereof made as therein provided, on his or their part, to be kept and performed at the time and in the manner therein specified, and in respects according to their true intent and meaning, and shall indemnify and save harmless the City of San Diego, its officers and agents, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and virtue.

And the said surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

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This Bond shall not be effective until it has been approved as to final execution, by the State Director, P. W. A.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their seals this 24th day of _____

March, 1936, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body. (SEAL)

M. H. Golden
Principal

ATTEST:

Bilda C. Fatland

By _____

Massachusetts Bonding and Insurance
Company Surety (SEAL)

ATTEST:

Bilda C. Fatland

By Donald B. Goldsmith
Attorney-in-Fact

If executed by an individual or partnership contractor, appropriate changes shall be made in the last preceding paragraph.

I hereby approve the form of the within Bond this 24 day of March, 1936. (SEAL)

C. L. Byers
City Attorney of the City of San Diego.

Approved by a majority of the members of the Council of The City of San Diego this 24th day of March 1936.

STATE OF CALIFORNIA)
) SS
County of San Diego)

On this 24th day of March 1936, before me, Helon C. Wallace, a Notary Public in and for the said County of San Diego, State of California, residing therein, duly commissioned and sworn, personally appeared M.H. Golden personally known to me to be the person whose name is subscribed to the within instrument, and he duly acknowledged to me that he executed the same.

(SEAL)

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, at my office in the County of San Diego the day and year in this certificate first above written.

My Commission expires
March 12, 1938.

Helen C. Wallace
Notary Public in and for the County of
San Diego, State of California

STATE OF CALIFORNIA)
) SS
County of San Diego)

On this 24th day of March in the year one thousand nine hundred and Thirty-six, before me Helen C. Wallace, a Notary Public in and for the said County and State, residing therein, duly commissioned and sworn, personally appeared Donald B. Goldsmith, known to me to be the duly authorized Agent and Attorney-in-Fact of the MASSACHUSETTS BONDING AND INSURANCE COMPANY, the corporation whose name is affixed to the foregoing instrument and duly acknowledged to me that he subscribed the name of the MASSACHUSETTS BONDING AND INSURANCE COMPANY thereto as Surety and his own name as Attorney-in-Fact.

(SEAL)

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

My Commission expires
March 12, 1938

Helen C. Wallace
Notary Public in and for said County
and State.

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~~Percy J. Benbough~~
~~A. W. Bennett~~
~~Raymond M. Wansley~~
~~Walter C. Wurfel~~
~~Harry Warburton~~
~~Bruce R. Stannard~~
~~John S. Siebert~~
Members of the Council

ATTEST: (SEAL)
Allen H. Wright
City Clerk
By Fred W. Sick
Deputy

Approved as to final execution.

State Director P.W.A.

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LABOR AND MATERIAL BOND

KNOW ALL MEN BY THESE PRESENTS, that

WHEREAS, the Council of the City of San Diego, State of California, by Resolution No. 64135, passed March 17, 1936, has awarded to

M. H. Golden

hereinafter designated as the "Principal," a Contract for Constructing a The Hodges Reservoir Dam Strengthening

WHEREAS, said Principal is required to furnish a Bond in connection with said Contract, providing that if said Principal, or any of his or its sub-contractors, shall fail to pay for any materials, provisions, provender or other supplies or teams used in, upon, for or about the performance of the work contracted to be done, or for any work or labor done thereon of any kind, the Surety on this Bond will pay the same to the extent hereinafter set forth;

NOW, THEREFORE, We, the Principal and Massachusetts Bonding and Insurance Company, a Massachusetts Corporation,

as Surety, are held and firmly bound unto the City of San Diego hereinafter called the "City" in the penal sum of Sixty-five Thousand

Three Hundred Six and 23/100- - - - - DOLLARS (\$ 65,306.25) lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if said Principal, his or its heirs, executors, administrators, successors, or assigns, shall fail to pay for any materials, provisions, provender or other supplies or teams used in, upon, for or about the performance of the work contracted to be done, or for any work or labor thereon of any kind as required by the provisions of an act of the Legislature of the State of California entitled "An Act to secure the payment of claims of persons employed by contractors upon public works, and the claim of persons who furnish materials, supplies, teams, implements, or machinery used or consumed by such contractors in the performance of such work, and prescribing the duties of certain public officers with respect thereto", approved May 10, 1919, as amended, and provided that the persons, companies or corporations so furnishing said materials,

STATE OF CALIFORNIA)
) SS
County of San Diego)

On this 24th day of March 1936, before me, Helen C. Wallace, a Notary Public in and for the said County of San Diego, State of California, residing therein, duly commissioned and sworn, personally appeared M.H. Golden personally known to me to be the person whose name is subscribed to the within instrument, and he duly acknowledged to me that he executed the same.

(SEAL)

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, at my office in the County of San Diego the day and year in this certificate first above written.

My Commission expires
March 12, 1938.

Helen C. Wallace
Notary Public in and for the County of
San Diego, State of California

STATE OF CALIFORNIA)
) SS
County of San Diego)

On this 24th day of March in the year one thousand nine hundred and Thirty-six, before me Helen C. Wallace, a Notary Public in and for the said County and State, residing therein, duly commissioned and sworn, personally appeared Donald B. Goldsmith, known to me to be the duly authorized Agent and Attorney-in-Fact of the MASSACHUSETTS BONDING AND INSURANCE COMPANY, the corporation whose name is affixed to the foregoing instrument and duly acknowledged to me that he subscribed the name of the MASSACHUSETTS BONDING AND INSURANCE COMPANY thereto as Surety and his own name as Attorney-in-Fact.

(SEAL)

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

My Commission expires
March 12, 1938

Helen C. Wallace
Notary Public in and for said County
and State.

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provisions, provender, or other supplies, teams, appliances or power used in, upon, for or about the performance of the work contracted to be executed or performed, or any person, company or corporation renting or hiring teams or implements or machinery or power for or contributing to said work to be done, or any person who performs work or labor upon the same, or any person who supplies both work and materials therefor, shall have complied with the provisions of said Act, then said Surety will pay the same in or to an amount not exceeding the amount herein above set forth, and also will pay in case suit is brought upon this bond, such reasonable attorney's fee, as shall be fixed by the court, awarded and taxed as in the above mentioned Statute provided.

This Bond shall inure to the benefit of any and all persons, companies and corporations entitled to file claims under said Act, so as to give a right of action to them or their assigns in any suit brought upon this bond.

And the said surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

This Bond shall not be effective until it has been approved as to final execution by the State Director, P.W.A. (SEAL)

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their seals this 24th day of March, 1936, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

M. H. Golden
Principal

ATTEST:

Bilda G. Patland

By _____

MASSACHUSETTS BONDING AND INSURANCE
COMPANY Surety (SEAL)

ATTEST:

Bilda G. Patland
(SEAL)

By Donald B. Goldsmith (SEAL)
Attorney-in-Fact

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If executed by an individual or partnership contractor, appropriate changes shall be made in the last preceding paragraph.

I hereby approve the form of the within Bond this 24
day of March, 19 36.

C. L. Byers
City Attorney of the City of
San Diego.

Approved by a majority of the members of the Council of
The City of San Diego this 24th day of March
1936.

ATTEST:

Allen H. Wright
City Clerk
By Fred W. Sick
Deputy

(SEAL)

Percy J. Benbouch
A. W. Bennett
Raymond M. Wansley
Walter C. Wurfel
Harry Warburton
Bruce R. Stannard
John S. Siebert
Members of the Council

Approved as to final execution.

State Director P.W.A.

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 Instructions to 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 shall 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 the Notice to Contractors 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 and to waive technical defects, as the interest of The City of San Diego may require.

3. Certified Check.- Each bidder shall submit with his proposal an unconditional certified check for the sum stated in the Notice to Contractors, payable to the order of "The City Clerk of The City of San Diego" (hereinafter styled City Clerk). 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 subject to deposit in the Treasury of The City of San Diego as moneys belonging to The City of San Diego, the proceeds of said check being agreed upon as liquidated damages to The City of San Diego on account of the delay in the execution of the contract and bond and the performance of work thereunder, and

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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 the approval of his bond on behalf of The City of San Diego, and the checks of the other bidders will be returned at the expiration of forty-five 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 a written contract with The City of San Diego, and if bonds are required, furnish good and approved bonds within ten days after award of contract is made. The contract shall be made in the form adopted by The City of San Diego and 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 Advertisement, Notice to Contractors, Instructions to Bidders, Proposal, Bonds, General Conditions, Drawings, and Detail Specifications are a part of 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.- Unless another sum is specified in the Instructions to Bidders, the contractor shall furnish a labor

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and materialmen's bond in an amount of not less than fifty per cent of the estimated contract price, lawful money of the United States of America, to be paid to The City of San Diego, conditioned upon the payments by said contractor of all materials, supplies, teams or transportation 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 thereon.

All such bonds shall be satisfactory to the State Engineer or State Director (P.W.A.)

The contractor shall also furnish a faithful performance bond in an amount not less than one hundred per cent of the estimated contract price, lawful money of the United States of America, to be paid to the City of San Diego, 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, in the opinion of the Council, evidenced by resolution, are or become irresponsible, the Council may require additional sufficient sureties, which the contractor shall furnish to the satisfaction of the said Council within ten days after notice, and in default thereof the contract may be suspended by the Council evidenced by resolution, and the materials purchased or the work completed as provided in paragraph 12.

6. Transfers.- This agreement shall not be assigned to any other party, and any such assignment shall cause annulment of the contract so far as The City of San Diego is concerned; all right of action, however, for breach of this contract is reserved to The City of San Diego, subject to the approval of State director P.W.A.

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7. Engineer.- The word "Engineer" used in these specifications or the contract means the Hydraulic Engineer Division of Development and Conservation of the Water Department of The City of San Diego. He will be represented by assistants and inspectors authorized to act for him. On all questions concerning the acceptability of material, machinery, 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.

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 The City of San Diego. 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 material to be furnished or used in the work as the engineer may require.

10. Materials 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 and P.W.A. Regulations. Work, material, or machinery not in accordance with these specifications, in the opinion of the engineer and P.W.A. Regulations, 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 The City of San Diego 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 the City Manager 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

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of the contract period no liquidated damages shall accrue for a period equivalent to such delay.

12.- Suspension of Contract.- If the Second Party should be adjudged a bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if he should fail to make prompt payment to sub-contractors or for material or labor, or persistently disregard laws, ordinances or the instructions of the City of San Diego, or otherwise be guilty of a substantial violation of any provisions of the contract, then the First Party, upon the certificate of the Hydraulic Engineer that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Second Party ten days written notice, terminate the employment of the Second Party and take possession of the premises and of all materials, tools and appliances and finish the work by whatever method he may deem expedient. In such case the Second Party shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of

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the contract price shall exceed the expense of finishing the work including compensation for additional managerial and administrative services, such excess shall be paid to the Second Party. If such expense shall exceed such unpaid balance, the Second Party shall pay the difference to the First Party. The expense incurred by the First Party as herein provided, and the damage incurred through the Second Party's default, shall be certified by the Hydraulic Engineer.

13. Changes.- The engineer may, without notice to the sureties on the contractor's bonds, make changes: (a) in the designs or material 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 structures and excavations therefor; (b) the shifting of locations to suit conditions disclosed as work progresses. No changes affecting the cost in excess of \$1,000 will be made by the engineer

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without the approval of the City Manager and authorization of the Council evidenced by resolution. 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, subject to approval by the City Manager and by the Council evidenced by resolution, shall be final. Extra work or material shall be charged for as hereinafter provided. No changes in the approved plans and specifications will be authorized without the approval of the State Director of P.W.A. and no claims for additional cost will be valid unless approved by the State Director of P.W.A.

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 the City Manager and authorization of the Council evidenced by resolution. 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 "Faithful Performance" and "Labor and Materialmen's" bonds, and 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 178

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shop and field equipment where required, but will in no case include any allowance for office expenses, general superintendence or other general expenses. 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. No extra work or material or change in approved plans and specifications will be authorized without the approval of the State Director P.W.A. and no claim for additional cost will be valid unless so approved.

15. Delays - No Extra Compensation.- The contractor shall receive no compensation for delays or hinderances 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 The City of San Diego 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

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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, subject to approval by State Director F.W.A., the City Manager and by the Council evidenced by resolution, shall be final.

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 as approved by State Director F.W.A. may be authorized by the engineer if not detrimental to the work and if without additional cost to The City of San Diego.

17. Inspection.- All materials furnished and work done under this contract will be subject to rigid inspection. The contractor shall furnish without cost to The City of San Diego complete facilities, including the necessary labor for the inspection of all material and workmanship. The engineer, or his authorized agent and the U. S. Government Engineer 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.

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18. Contractor's Financial Obligations.- The contractor shall promptly make payments to all persons supplying labor and materials in the execution of the contract, as set out in P.W.A. Regulations.

19. Experience.- Bidders 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 proposal, agreement or detail 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 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. The contractor shall also furnish the engineer copies of all invoices for materials and supplies and copies of freight bills on all machinery, materials, and supplies, shipped to or from the project in connection with the work under the contract.

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 The City of San Diego 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 subcontractor, 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 subcontractors, 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 The City of San Diego or any of its officers.

26. Staking Out Work.- The work to be done will be staked out for the contractor who shall without cost to The City of San Diego 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 extensions of time on account of such order, when approved by State Director P.W.A.

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 The City of San Diego for excess or deficiency therein, actual or relative. Payment at the prices agreed upon will be in full for the completed work and no additional claim or charge shall be made by the contractor for or on account of materials, supplies, labor, tools, machinery, or any 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 The City of San Diego 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 The City of San Diego, and the contractor and his sureties shall be liable therefor. He shall take all risks from floods 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 The City of San Diego at the expense of the contractor, and the contractor and sureties shall be liable therefor.

32. Roads and Fences.- Streets and roads 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 of Way.- The right of way for the works to be constructed under this contract will be provided by The City of San Diego.

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 not subcontract in excess of 20 per cent of the total amount of the contract, except by express permission in writing of the engineer. The contractor shall advise the engineer in advance and in detail of all portions of the work that he contemplates subcontracting. The contractor

shall also furnish The City of San Diego 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 The City of San Diego and the principal contractor and the terms of that agreement and all parts thereof shall be made a part of such subcontract insofar 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 insofar 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 The City of San Diego will hold the contractor responsible therefor.

37. Infringement of Patents.- The contractor shall hold and save The City of San Diego, its officers, 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, 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, equality, 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 The City of San Diego, its officers, 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 The City of San Diego may pay such royalties and secure such licenses and charge the cost thereof against any money due the contractor from The City of San Diego, 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 The City of San Diego 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 LIABILITY INSURANCE.- The Contractor shall maintain adequate workmen's compensation insurance under the laws of the State of California, for all labor employed by him or by any subcontractor under him, who may come within the protection of such workmen's compensation laws of the State of California, and shall provide, where practicable, employers' general liability insurance for the benefit of his employees and the employees of any subcontractor under him not protected by such compensation laws, and proof of such insurance satisfactory to the first party and to the Public Works Administration, shall be given by filing certificates of such insurance with the first party, in form satisfactory to said first party and said Public Works Administration.

The Contractor shall, in addition, take out and shall furnish satisfactory proof, by certificate or otherwise, as may be required, that he has taken out public liability insurance with an insurance carrier satisfactory to the first party and to the Public Works Administration, and in such amounts and such form as shall be satisfactory to each of them to protect said Contractor against loss from liability imposed by law, for damages on account of bodily injury, including death resulting therefrom, suffered or alleged to have been suffered by any person or persons, other than employees, resulting directly or indirectly from the performance or execution of this contract or any subcontract thereunder, and also to protect said Contractor against loss from liability imposed by law or damage to any property, caused directly or indirectly by the performance or execution

of this contract or any subcontract thereunder.

Said public liability and property damage insurance shall be maintained by the Contractor in full force and effect during the entire period of performance under this contract, in the amount of not less than Fifty Thousand Dollars (\$50,000) for one person injured in one accident, and not less than One Hundred Thousand Dollars (\$100,000) for more than one person injured in one accident, and in the amount of not less than Fifty Thousand Dollars (\$50,000) with respect to any property damage aforesaid.

If the Contractor fails to maintain such insurance, the first party may take out such public liability insurance to cover any damages which said first party may be liable to pay through any of the operations under this contract, and deduct and retain the amount of the premiums for such insurance from any sums due under the contract.

Satisfactory to the State Engineer PWA and to the City of San Diego, the Contractor shall also carry Public Liability Insurance to cover accidents arising out of the use and operation of automobiles or trucks or accidents arising out of boiler explosions or from operating elevators or hoists. Such accidents must be covered by rider or separate policy. The contractor shall provide two original signed copies and four duplicate copies of the policy.

If the whole or a portion of the work involving the use of automobiles, trucks, boilers, elevators or hoists is sublet it is required that the subcontractors performing such work be covered as well as the contractor.

Nothing herein contained shall be construed as limiting in

any way the extent to which the Contractor may be held responsible for the payment of damages to persons or property resulting from his operations or the operation of any subcontractor under him.

39. COMPLIANCE WITH LAWS.- The contractor shall conduct the work in compliance with all rules and regulations of the Public Works Administration, all laws and regulations of the State of California, ordinances of the County of San Diego and the Charter and ordinances of The City of San Diego, limiting or controlling the work in any manner. The contractor shall at his own expense obtain all necessary permits and licenses and pay all fees required by law.

40. ASSIGNMENT.- No assignment by the contractor of any principal construction contract or any part thereof, or of the funds to be received thereunder by the contractor, will be recognized by the Public Works Administration unless such assignment has had the approval of the City and the State Engineer PWA, and the surety has been given due notice of such assignment in writing.

No assignment will receive the approval of the State Engineer PWA unless the instrument of assignment contains a clause to the effect that it is agreed that the funds to be paid to the assignee under the assignment are subject to a prior lien for services rendered or materials supplied for the performance of the work called for in said contract in favor of all persons, firms or corporations rendering such services or supplying such materials.

41. SUBSTITUTION FOR PATENTED AND SPECIFIED ARTICLES.-

Whenever in the specifications, any material or process is indicated or specified by patent or proprietary name and/or by name of manufacturer, such specifications shall be deemed to be used for the purpose of facilitating description of the material and/or process desired, and shall be deemed to be followed by the words "Or Equivalent", and the contractor may offer any material or process which shall be equal in every respect to that so indicated or specified; provided, however, that if the material, process, or article offered by the contractor is not, in the opinion of the engineer, equal in every respect to that specified then the contractor must furnish the material, process or article specified or one that in the opinion of the engineer is the equal thereof in every respect.

42. STATE SALES TAX.- The contractor shall include in his unit prices bid, where applicable, the State of California sales tax and no additional allowance will be made on account thereof. Payment of sales tax to the State shall be made by the contractor promptly as required, and his sureties shall be liable therefor.

DETAIL SPECIFICATIONS
Special Conditions

43. REQUIREMENT.- It is required that there be excavated and constructed in accordance with the drawings hereinbelow listed and these specifications, Hodges Reservoir Dam Strengthening. The work is located at Hodges Reservoir Dam about ten miles easterly of Solana Beach.

44. LIST OF DRAWINGS.-

WD-211 Geography

WD-464 Sheet 1 Hodges Reservoir Dam Strengthening
Longitudinal Section
Sheet 2a Hodges Reservoir Dam Strengthening
Typical Buttress Section
Sheet 3 Hodges Reservoir Dam Strengthening
Typical Frame Detail
Sheet 4 Structural Details

WD-411 Spillway Topography, Plan and Section

45. COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK.- Work shall be commenced by the contractor within ten days after the approval of the contract on behalf of Federal Emergency Administration of Public Works, and shall be completed within 240 days, including Sundays and Holidays after execution of the Contract, and approval of the PWA. The contractor shall, at all times during the continuance of the contract, prosecute the work with such force and equipment as, in the judgment of the engineer are sufficient to complete the different portions of the work in the order required and the entire work within the specified time.

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46. 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 \$25.00 per day will be made for each and every day, including Sundays and holidays, that the contract remains uncompleted after the date required for completion. The said amounts are hereby agreed upon as liquidated damages for the loss to The City of San Diego on account of the expense due to the employment of engineers, inspectors, and other employes, after the expiration of the time for completion, and on account of the value of the operation of the domestic works dependent thereon, 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.

47. CONSTRUCTION PROGRAM.- The construction program shall be subject at all times to the approval of the engineer. The capacity of the construction plant, sequence of operations, and method of operations shall be such as to insure the completion of the work within the time specified. The concrete in diagonal strengthening shall be brought up behind and concrete therein shall at no time be higher than the corresponding transverse strengthening unless specifically permitted by the engineer. It is especially required that chipping keyways for diagonal strengthening will be a minimum distance ahead of concreting and the rate of such chipping shall be approved in advance by the Engineer.

48. RESERVOIR CONTROL.- The City of San Diego may impound water to the fullest extent practicable in the Hodges Reservoir basin. In the event that the water spills over the crest, the contractor shall adequately protect his work without additional

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cost to the City, but upon written request by the contractor, an extension of time to complete the work under this contract may be made for a period equal to the period of time that the water in the reservoir spilled over the crest and thereby prevent the contractor from progressing with the work. The contractor shall take every precaution to prevent pollution of the reservoir and water drawn from the reservoir into the Hodges Reservoir-San Dieguito Conduit.

49. MEALS FURNISHED.- The contractor, during the period he maintains a mess in connection with the work, shall furnish suitable meals, satisfactory in quality, quantity, and service, at usual hours to all employes and officials and official guests of The City of San Diego, single meals at not more than fifty cents per meal plus tax. Requisitions will be issued in advance by the engineer for all meals, and at the end of each month the contractor shall present bills to the engineer for meals served in accordance with requisition, showing the names, dates and number of meals furnished each person. These bills when approved by the engineer will be paid by the City.

50. WATER FOR PLANT CONSTRUCTION AND DOMESTIC USE.- Water for all the mechanical construction or domestic requirements of the work may be obtained by the contractor from Hodges Reservoir by pumping at his own expense and there shall be pumped and/or stored a sufficient quantity at an elevation which will insure at all times a continuous and adequate supply under ample pressure for the work.

51. 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, 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 twenty-five per cent will be made, and from the remainder a further deduction will be made of all amounts due to the City of San Diego from the contractor for supplies or materials furnished or services rendered and any other amounts that may be due to The City of San Diego 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. No payments will be made to the contractor until satisfactory receipts for payment as provided in Clause 12 of P.W.A. "Construction Regulations" of all labor and materials supplied during the preceding month shall be shown to the P.W.A. Engineer-Inspector, as required. The twenty-five percent deducted as above set forth shall not become due and payable until the completion of the work to the satisfaction of the Engineer and its acceptance by The City of San Diego and until release shall have been executed and filed as herein-after provided, and until five days shall have elapsed after the expiration of the period within which liens may be filed under the provisions of Title 4 part 3 of the Code of Civil Procedure

of the State of California. In case of suspension of the contract, the said twenty-five per cent shall be and become the sole and absolute property of The City of San Diego to the extent necessary to repay to The City of San Diego 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 the City of San Diego, under or by virtue of the contract, shall have been executed by the contractor, and when five days shall have elapsed, after the expiration of the period within which liens may be filed, as hereinabove provided, final payment will be made, at such time and in such manner as provided by law, of any balance due, including the percentage withheld as above stated, or such portion thereof as may be due the contractor.

Note: The provisions of the contract relative to progress payments and/or final payment to the contractor are subject to and are qualified by the requirements of the Public Works Administration to the extent that the latter may be applicable and/or more severe than the requirements herein set forth

51-A The Contractor shall provide adequate office facilities for the P.W.A. Inspector. Such quarters shall be convenient to the work and for the sole use of the Government Inspector, and shall be provided with light, heat and telephone service and shall be furnished with table, desk and chairs.

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UNDER THIS HEAD IS INCLUDED ALL EXCAVATION INVOLVED AND INCLUDED IN THE HODGES RESERVOIR DAM STRENGTHENING

52. 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, shoring and other temporary structures, all pumping, bailing, draining, backfill 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 vertical lines shown on the drawings or as such neat lines may have been changed by the engineer. Any excavation made beyond vertical lines shall be made at the expense of the Contractor. Excavation shall be made as shown on the drawings or as directed by the engineer. The excavated materials shall be deposited as shown on the drawings or as and where directed by the engineer. Excavated materials not deposited within the area between buttresses and spillway excavation not used for bedding shall be wasted below the spillway as directed.

53. CLASSIFICATION.- Class 1 - All excavation for footings under solid panels, columns or diagonal strengthening and within vertical lines extending to prescribed concrete lines and to ground surfaces. The bottom of footing will be into suitable rock to a depth directed by the engineer. Class 2 - Any excavation, if required for anchorage, below the bottom of foundation. Class 3 - Cutoff excavation in spillway below bottom of general excavation. Class 4 - All spillway excavation except Class 3. 197

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No payment shall be made for material of any class 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 and classification 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 specific objections, with reasons therefor, within said ten days, shall be considered a waiver of all claims based on alleged erroneous estimates of quantities or incorrect classifications of materials for the work covered by such statement.

54. UTILIZATION OF EXCAVATED MATERIAL.- All materials excavated shall be utilized for backfill or bedding as shown on the drawings or as directed by the engineer, or if not required for backfill or bedding shall be wasted between buttresses, or downstream from the spillway, with uniform and slightly surfaces and where directed by the engineer. The cost of utilizing and placing excavated materials in backfill, bedding or wasting shall be included in the unit prices bid for excavation. All material to be wasted, which cannot conveniently be distributed between the buttresses, shall be wasted below the spillway as directed by the engineer.

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55. USE OF EXPLOSIVES.- The use of explosives will not be permitted for work between buttresses. All excavation between buttresses shall be accomplished by drilling, plug and feather, wedging, and gadding, or other methods approved by the engineer. No explosives may be used for the spillway excavation which, in the opinion of the engineer may result in injury to the Hodges Dam and Spillway and Appurtenant Works, and any damage done to the work by the use of explosives shall be repaired to the satisfaction of the engineer, by the contractor at his own expense. Spillway excavation for which the use of explosives will not be permitted by the engineer, shall be accomplished by drilling, plug and feathers, wedging and gadding or other methods approved by the engineer.

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CONCRETE

UNDER THIS HEAD IS INCLUDED ALL CONCRETE WORK INVOLVED AND INCLUDED IN THE CONSTRUCTION OF THE HODGES RESERVOIR DAM STRENGTHENING.

56. ERECTION OF STRUCTURES.- The construction of the various units and the sequence of installation as well as the rate of progress and the place and time of each separate installation shall be subject to the approval by the engineer. It is of primary importance that only such concreting be accomplished as may be directed by the engineer. In general all concrete work shall be constructed as shown on the drawings or as directed by the engineer. The dimensions will be subject to such changes as may be found necessary to adapt such structures to the conditions disclosed by field conditions or as the engineer may prescribe.

57. 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 two parts of sand and about four parts of broken stone or gravel. 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 modification. All concrete used in the strengthening of the dam is expected to have a minimum strength of 3,000 pounds per square inch at the end of 90 days.

58. CEMENT.- All cement used on this work shall be of standard brand low heat Portland cement which has been successfully used in similar construction for not less than two years. It must conform to the Standard Specifications and tests for Portland Cement, U.S. Bureau of Reclamation Specifications No. 599-D or as they may have been subsequently amended, 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 give the engineer thirty (30) days notice to allow 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 immediately removed from the site of the work.

On account of the low heat cement to be used in the work, supports for concrete forms are required to stay in place until the concrete has thoroughly hardened and no supports for forms may be removed until approval of the engineer is obtained. One sack of cement shall be considered equivalent to one cubic foot by volume. The contractor shall furnish and maintain at the work suitable weather-proof warehousing for storing cement 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 shall be returned to the City, thoroughly shaken and bundled for shipment. Any loss in sacks or loss due to return of sacks in a condition unacceptable to the cement company will be charged to the contractor. The contractor shall install and operate at the damsite a power driven mechanical sackshaker and all cement recovered by the operation of such shaker shall be the property of the City. The contractor shall use such recovered cement in the work as directed by the engineer, without additional cost to the City.

59. 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 crushing suitable rock. The sand particle shall be hard, dense, strong, durable rock fragments and shall be screened and shall conform in all respects to Section 29 of Standard Specifications as edited to May 1931 of the California Division of Highways.

60. Broken Rock or Gravel.- The broken rock or gravel for concrete must be hard, dense, durable rock fragments or pebbles and shall conform in all respects to the Standard Specifications edited to May 1931 of the California Division of Highways. The sizes shall be as follows:

- (1) Rock passing a two and one-half 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 mesh sieve.
- (4) Fine aggregate passing a 3 mesh sieve.

All of the foregoing sized rock shall be so graded in size that when combined it will comply with the combined aggregate grading of the above mentioned specifications. Each of the sizes of aggregate shall be predominately gravels. The engineer will, from time to time determine the exact proportions 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. If directed by the engineer the 2-1/2 inch aggregate shall be omitted. The contractor will not be entitled to additional compensation on account thereof.

61. 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.

62. 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. Proper means shall be provided to make adjustments on account of variation in grading or moisture content in materials. 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 produce concrete of the required consistency. 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 gang, who shall see that all instructions issued by the engineer as to the matter of mixing, handling, and placing concrete, are carried out.

63. 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 204

its depositing shall be subject to his approval. All 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. 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 thoroughly wet before the concrete is deposited. On account of the nature of the work, making it necessary to have the minimum amount of shrinkage upon the setting of concrete, it is desirable to use a minimum amount of water. A slump of not greater than 2" will be permitted in places where access to forms is difficult. In all other places on the dam a dryer mix shall be used. (The slump for spillway work shall be as directed by the engineer.) On this account the use of mechanically, air or electrically operated internal and/or external vibrators will be required for compacting the lifts or layers of concrete, excepting in the spillway. The vibrators shall be moved from place to place, as directed by the engineer, and the distance

which they are to be moved, the number of vibrators used, the length of time which they vibrate in any one spot, and any and all operations connected with their use, shall be subject to the approval and direction of the engineer. In addition to the vibration, the concrete, if required by the engineer, shall be rammed, tamped or worked with suitable appliances, tamping bars, forked tools or other devices until the concrete completely fills the forms, closes 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, vibrating and tamping shall be done with a special view to obtaining the densest

8-9-35

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concrete and smoothest surfaces practicable. No concrete shall be placed except in the presence of a duly authorized inspector. No chutes longer than 10 feet will be permitted. In order to permit the use of a dry mix it will be desirable to place the concrete directly from buckets, buggies or skips into the forms. Spillway paving shall be screeded and floated so as to present a neat and uniform appearance.

64. 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 surface 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 where required shall be rounded or beveled by the use of moulding strips or suitable moulding or finishing tools.

65. 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 wet for at least two weeks after the concrete has been placed, or, if approved in advance by the engineer, Hunt Process, or equivalent coating, in the opinion of the engineer, may be applied for the purpose of curing. 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.

66. 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. Chamfer strips shall be used in forms where edges are exposed. 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.

67. BONDING.- The surface of concrete shall be kept free from deleterious matter and shall be thoroughly cleaned by the use of jets of water or air under relatively high pressure, and metal brushes, or both, or other methods, before pouring new concrete thereon. It is the intent to thoroughly remove all laitance before placing a succeeding lift. The surface of concrete, wherever required by the engineer, shall be flushed with cement grout immediately before depositing new concrete. All costs in connection with bonding shall be included in the unit prices bid for concrete.

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68. SUPPORTS FOR FORMS.- The contractor shall provide suitable steel tie rods and "she" bolts or cone washers and bolts properly anchored, or other means satisfactory to the engineer, to hold the forms rigidly in place to specified line, thickness of wall and grade, as indicated in the drawings, or as directed by the engineer. The contractor may fasten his forms to the steel rods or reinforcing passing thru the buttress, provided the methods of fastening are satisfactory to the engineer. The contractor shall, immediately upon removal of the form, fill the bolt or washer holes even with the wall face and leave the exposed surface smooth and in good condition to be finished as required.

69. PREPARATION OF FOUNDATION.- The surface of the rock foundations shall be left sufficiently rough to bond adequately with the concrete. The foundations, before placing concrete, shall be thoroughly cleaned of all earth, gravel, loose fragments of rock, and disintegrated and fissured rock. Before placing concrete on or against any foundation, all water shall be removed from all depressions. The cost of preparation of foundation and/or trimming for concrete shall be included in the unit prices bid for concrete.

70. FOUNDATION PIP WATER CONTROL.- The elevation of the water in the foundations for concrete work shall be kept at all times under control so that no water will be in contact with the concrete until it is at least 12 hours old.

71. CONTRACTION JOINTS.- Wherever shown on the drawings, or where directed by the engineer, vertical contraction joints,

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or horizontal or sloping construction joints, formed of concrete and built against forms, shall be built as directed. No joint shall be made except in accordance with details as shown or as directed by the engineer. Whenever a pour is stopped in the transverse strengthening, keyways will be required. All costs in connection with contraction or construction joints shall be included in the unit prices bid for concrete.

72. CONCRETE ADMIXTURES.- Admixtures, to prevent segregation and improve the workability of the concrete, will be permitted, provided the admixture material proposed shall first be approved by the engineer and the proportions of admixture to be used shall be fixed by him. No admixture shall be used without written permission from the engineer. The furnishing and using of admixtures with concrete shall be at the contractor's expense, and no additional allowance will be made therefor.

73. REINFORCING STEEL FURNISHED BY THE CONTRACTOR.- Such reinforcing steel as is not available or suitable, in the opinion of the engineer, from the steel furnished by the City, shall be furnished by the contractor. Such reinforcing shall be deformed bars made by the open hearth process from new billet stock of intermediate grade in accordance with the Standard Specifications for Billet-steel Concrete Reinforcement Bars, Serial Designation A15-30, with subsequent amendments, of the American Society for Testing Materials, and shall be of required sizes and shapes. The contractor shall furnish, clean, haul, store, cut, bend, place and secure in position the steel required by the drawings, or as directed by the engineer. All 210

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metal reinforcement, before being placed, shall be thoroughly cleaned of mill and rust scale and coatings. If the exact position of reinforcing steel is not shown on the drawings accompanying these specifications, the contractor will be furnished, or shall submit for approval, supplementary detail drawings and lists which will give him the necessary information for cutting, bending and spacing. The steel used for concrete reinforcement shall be so secured in position that it will not be displaced during the depositing of concrete, and special care shall be exercised by the contractor to prevent any disturbance of the steel in concrete already placed. Payment for reinforcing steel in place in the work will be made at the unit price bid which shall include the cost of furnishing, hauling, storing, cutting, bending, placing, wiring, furnishing the wire, and securing in place.

74. REINFORCING STEEL FURNISHED BY THE CITY.- Such reinforcing steel as may be suitable will be furnished by The City of San Diego at Hodges Dam in the lengths and condition there available. The contractor shall haul, store, clean with wire brushes, cut, bend, place and secure in position the steel required by the drawings or as directed by the engineer. The reinforcing steel shall be so secured in position that it will not be displaced during the depositing of concrete, and special care shall be exercised by the contractor to prevent any disturbance of steel in concrete already placed. It may be found advisable by the engineer to make use of steel to be furnished by the City at Hodges dam, which does not have the same dimensions as indicated on the drawings. In this event an equivalent area of 211

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steel will be placed in the sections, and adjustment for lengths made, but the contractor will not be entitled to additional compensation on account thereof. However, when available size of steel at Hedges Dam differs in diameter by more than 1/4" either way from the diameter of steel shown on the drawings, the contractor will not be required to use such steel. Any additional cost to the contractor on account of such adjustment shall be included in the unit price bid for steel to be furnished by the City and placed and hauled by the contractor. Lap joints in steel will be permitted to be made only at such places as the engineer will direct. Payment will be made at the unit price bid for hauling and placing steel which price shall include hauling, storing, cleaning, cutting, bending, placing and securing steel in place.

75. CONCRETE IN DIAGONAL AND TRANSVERSE STRENGTHENING.-

Concrete in diagonal strengthening shall be poured at a rate not to exceed 6 feet vertically in any one lift. Concrete in the columns or struts shall be poured in lifts as indicated on the drawings, or as directed by the engineer. The rate of progress, the locations at which the contractor may place concrete, and the manner of placing shall be subject to the approval of the engineer. The commencement of all work will be determined by the engineer from field conditions. Before concrete may be placed adjacent to existing buttresses, the latter shall have been thoroughly wetted and kept wet for a period of 6 hours directly preceding the placing of concrete adjacent to such existing concrete. The contractor shall take every precaution to thoroughly spade and vibrate the concrete, so as to prevent 212

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any voids, present a neat surface of concrete, and secure an intimate contact of all reinforcing steel with concrete. The forms shall be constructed in such a way that vibration will not deflect them nor loosen them from the buttresses during or after concreting operations. Concrete will be required to harden at least 3 days, ^{or longer if required by the engineer} and all laitance shall be completely removed before the next succeeding lift may be placed thereon. Concrete shall be placed as dry as possible to reduce shrinkage due to setting. It is required that this work be done at a rate of construction which will permit ample time between successive concrete lifts and will permit the maximum shrinkage to occur during construction.

76. MORTAR GROUT.- Mortar grout, where required by the engineer, shall be mixed in the proportions designated. The cost of such grout complete in place will be paid for at the same rate as the respective unit prices bid for concrete in the places where such grout is used.

77. MEASUREMENT OF CONCRETE.- Concrete will be measured for payment to the neat lines shown on the drawings or prescribed by the engineer. No payment for cement or concrete will be made for concrete or cement outside of prescribed lines or wasted.

78. PAYMENT FOR CONCRETE.- Concrete will be paid for at the respective unit prices bid, which shall include the cost of all power and machinery, labor and materials involved in quarrying, excavating, hauling, crushing and screening rock; hauling, crushing, screening and washing sand, and mixing and placing concrete, preparing foundations, providing and removing landing platforms, centers, forms, moulds, finishing, curing and pro-

protecting surfaces and shall include the cost of all other labor and materials entering into the construction of concrete, except cement, and steel reinforcement, which will be paid for as separate items.

79. CEMENT WASH.- All new concrete work exposed to view shall be painted with one coat of cement wash where required by the engineer. The cost of this work shall be included in the unit prices bid for concrete, except cement which will be paid for at the unit price bid.

80. CONCRETE CLASSIFICATION.- Concrete will be classified for payment as follows:

Class 1 - Concrete in vertical columns and horizontal struts.

Class 2 - Concrete in diagonal strengthening including top anchorage.

Class 3 - Concrete in footings for vertical columns.

Class 4 - Concrete in spillway.

81. DRILLING HOLES THRU BUTTRESSES. - All holes thru the buttresses shall be drilled by the contractor where indicated by the engineer. Only such holes may be drilled at any one time as the engineer shall direct. Necessary care shall be taken to prevent damage to the buttresses and to make true horizontal holes to serve the purpose for which they are intended. The diameter of the holes shall be at least 1/2" but not more than 1" less than the bars which are to pass thru them. Payment will be made at the unit price bid, which shall include the cost of all labor, materials and operations.

82. CHIPPING CONCRETE.- Where indicated on the drawings or directed by the engineer, the surface of concrete shall be chipped and keyways chipped to such depth and in such manner as may be satisfactory to the engineer. The rate of progress

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and the location at which chipping may be done at any time shall be subject to the approval of the engineer. No chipping may be done unless expressly permitted by the engineer. For chipping of surface it will only be required to roughen the face without removing concrete to a material depth. Chipping shall always be at least five feet ahead of new concrete and no chipping shall be done within five feet of new concrete until it has hardened at least three days. Extent of chipping in advance of concreting for diagonal strengthening will be dependent upon the water level in the Hodges reservoir and upon design problems, and no chipping for diagonal strengthening will be permitted when water is running over the spillway. Payment for chipping will be made at the respective prices bid which shall include the cost of all labor, materials and operations.

83. TIE BARS.- Tie bars shown on the drawings, or where directed by the engineer, shall be placed by the contractor. After concrete has hardened, the nuts shall be taken up until the desired stress exists in tie bars as determined by the engineer. Before the tie bars are encased in concrete, they shall be oiled where they pass thru the buttresses, to prevent adhesion to concrete and permit of tightening to required stress. The tie bars shall be upset at the ends to develop the entire net section strength of the tie bars. However, where the bars are joined in the center of the span by means of turnbuckles, or sleeve nuts which have one right hand and one left hand thread, bars shall not be upset. Steel in the tie bars shall conform in all respects to the standard specification of the American Society for Testing Materials Structural Steel of Bridges A-7-29 215

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with subsequent amendments. Payment for the tie bars, complete in place and tightened to required stress, will be made at the unit price bid, which shall include the cost of all labor, materials and operations complete in place. Hexagon nuts shall be used on the tie bars. Payment for the nuts will be made at the unit price bid for tie bars.

84. PLATES.- Steel bearing plates shall be placed under each nut of the dimensions indicated on the drawings or as directed by the engineer. The contractor shall make proper provisions for bedding these plates by chipping, if required, and bring up by plastering with cement grout an even face under the plates. The cost of plastering shall be included in the unit price bid for plates, except the cement, which will be paid for as a separate item at the unit price bid. Plates shall conform in all respects to the American Society for Testing Materials Standards for Structural Steel for Buildings A 9-29 with subsequent amendments. Payment for plates will be made at the unit price bid which shall include the cost of all labor, materials and operations, complete in place, except cement and chipping which will be paid for as separate items.

85. GROUTING.- After steel bars have been inserted in the holes in the buttresses drilled for them, the space around the steel bars shall be grouted with grout of such proportions and consistency and under relatively low pressure, as directed by the engineer. Payment will be made at the unit price bid for grouting which shall include the cost of all labor, materials and operations, excepting cement which will be paid for as a separate item at the unit price bid.

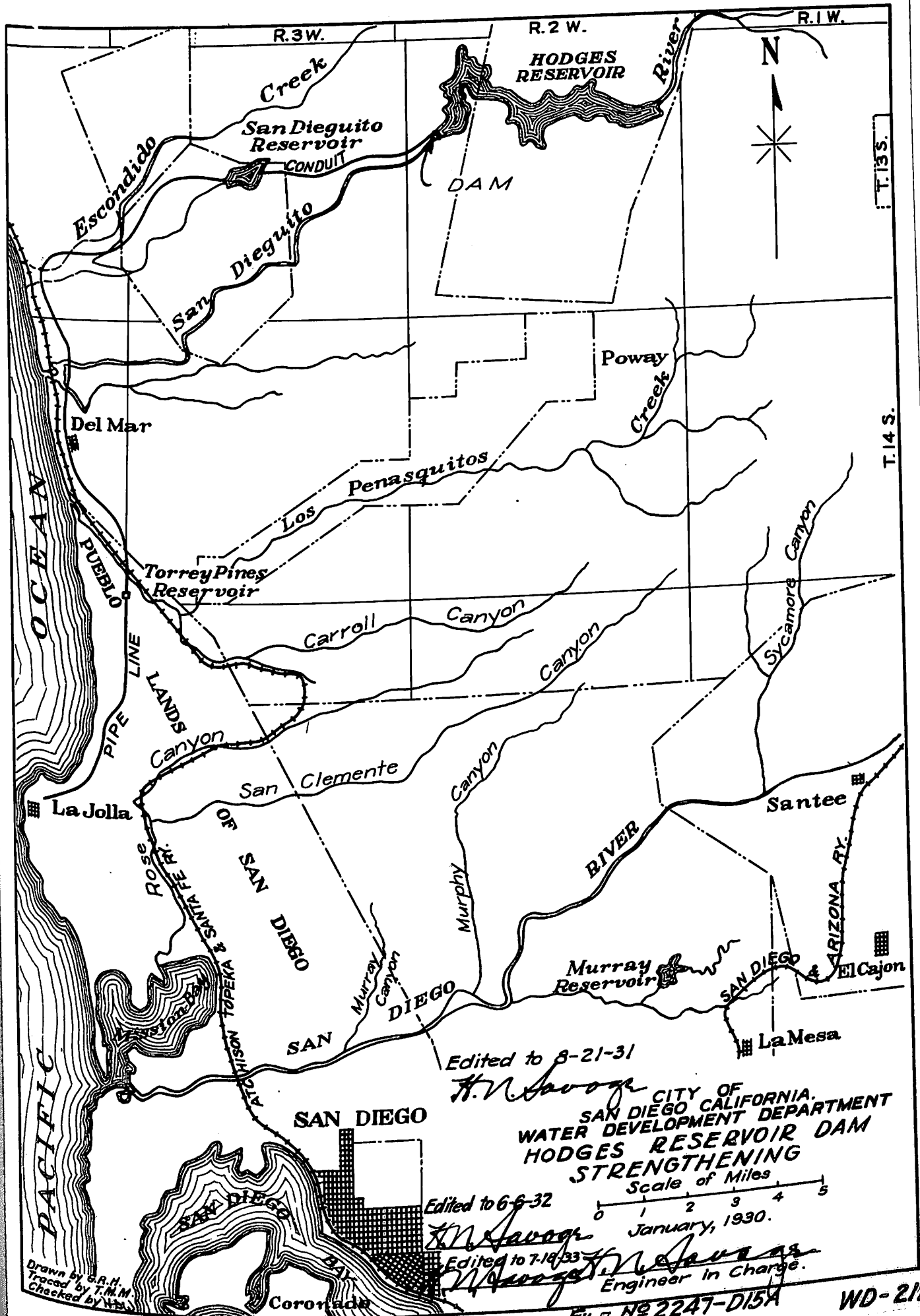
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86. ANCHOR HOLES.- The contractor shall drill holes for anchors in the spillway as shown on the drawings or as directed by the engineer. Requirement may exist for the drilling of anchor holes below general foundation for steel in transverse strengthening and the contractor shall drill such holes and provide anchorage as directed. Payment will be made at the unit price bid which shall include the cost of all operations, labor and materials involved in drilling holes and setting anchors, except cement and reinforcing steel which will be paid for as separate items.

87. PAINTING.- After being placed, all exposed metal work shall be painted by the contractor with one coat of Dutch Boy Red^{lead,} or equivalent in the opinion of the engineer, and boiled linseed oil and two coats of Dutch Boy, or equivalent, white lead and oil colored with lamp black, as directed by the engineer. The work shall be done in a thorough workmanlike manner satisfactory to the engineer. The cost of labor and materials shall be included in the respective unit prices bid for the metal work.

88. STRESSING OF STEEL.- The contractor will be required to use such means and methods as may be necessary to determine the stress in the tie bars and the cost thereof shall be included in the unit price bid for concrete, and no additional payment will be made on account thereof.

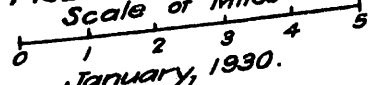


Edited to 8-21-31

H.V. Savage

CITY OF
SAN DIEGO CALIFORNIA.
WATER DEVELOPMENT DEPARTMENT
HODGES RESERVOIR DAM
STRENGTHENING

Scale of Miles



January, 1930.

Edited to 6-6-32

H.V. Savage

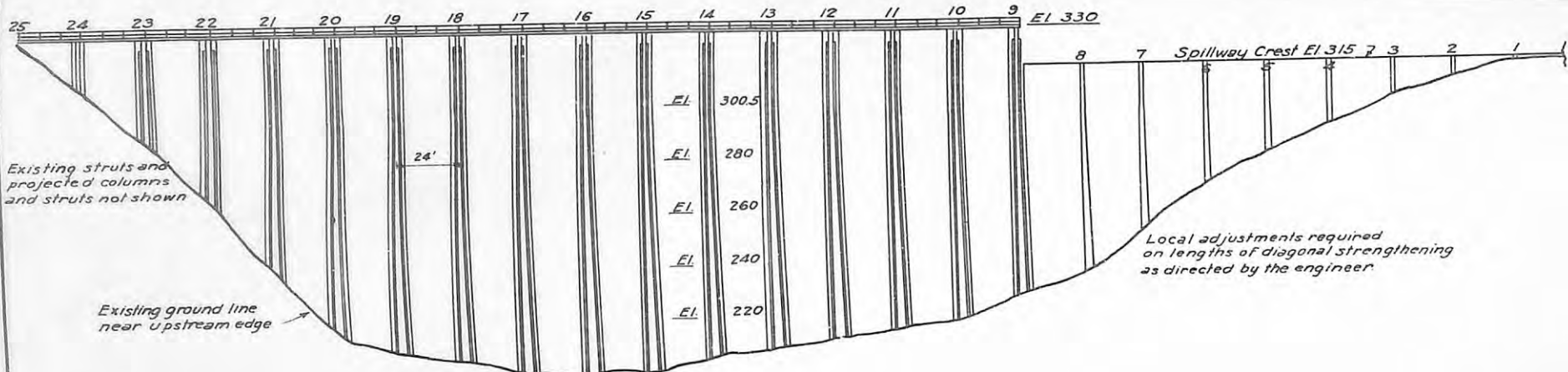
Edited to 7-18-33

H.V. Savage
Engineer in Charge.

Drawn by G.R.H.
Traced by T.M.M.
Checked by W.W.

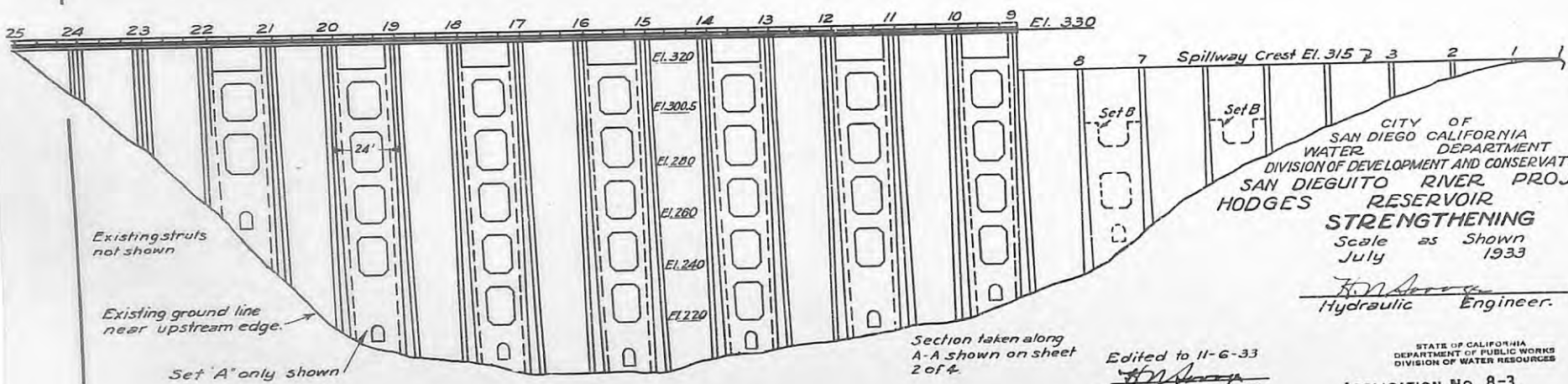
FILE NO 2247-D15A

WD-211



LONGITUDINAL SECTION
SHOWING DIAGONAL REINFORCING
Scale of Feet
0 30 60

219



SECTION
SHOWING COLUMN & STRUT REINFORCING
Scale of Feet
0 30 60

Dr. Fr. by NG & RB
Checked by ORB

CITY OF
SAN DIEGO CALIFORNIA
WATER DEPARTMENT
DIVISION OF DEVELOPMENT AND CONSERVATION
SAN DIEGUITO RIVER PROJECT
HODGES RESERVOIR DAM
STRENGTHENING
Scale as Shown
July 1933

H. N. ...
Hydraulic Engineer.

Edited to 11-6-33
H. N. ...
Edited to October 2, 1933.
H. N. ...

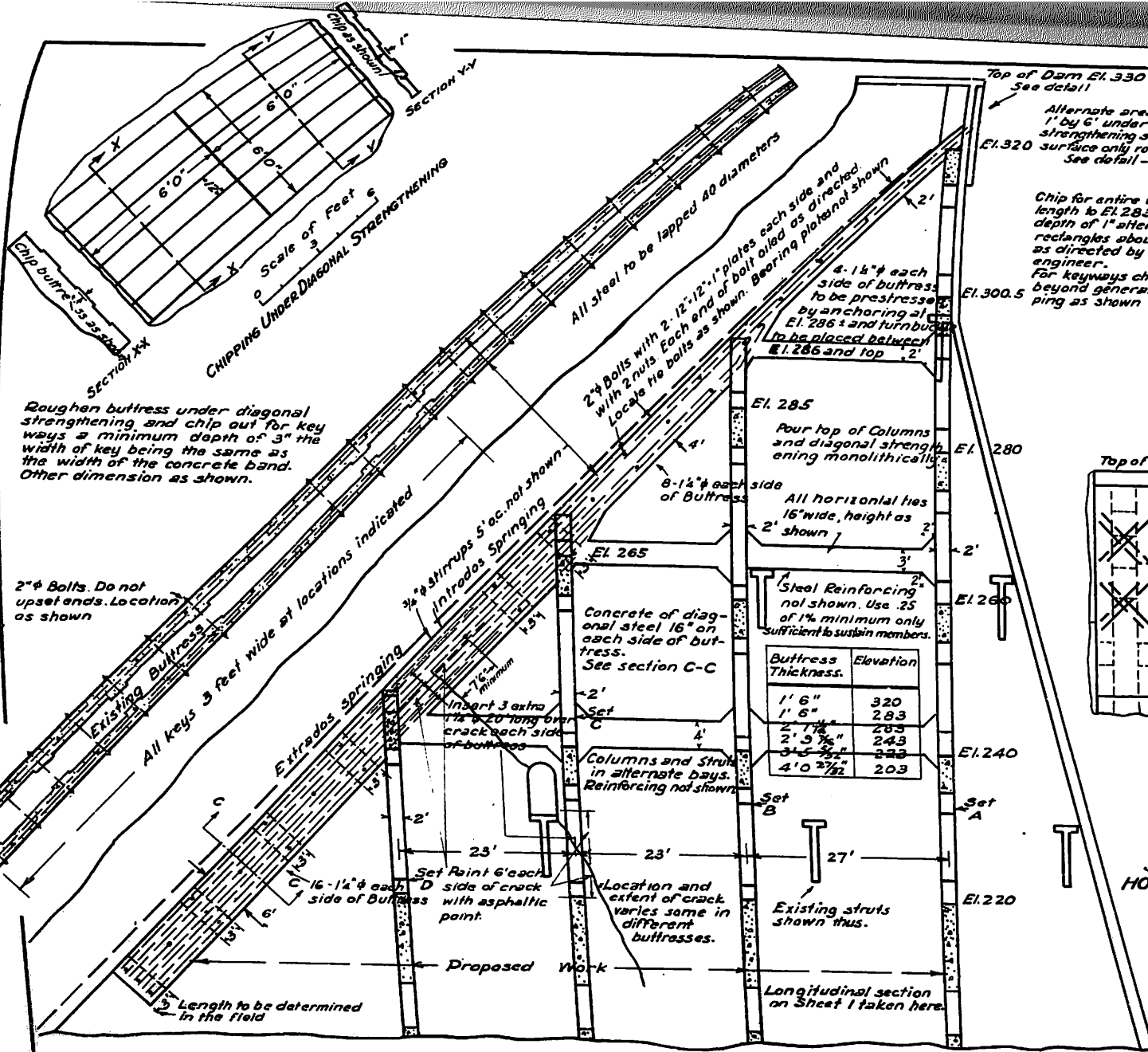
Sheet 1 of 4

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES
APPLICATION NO. 8-3
APPROVED AS TO SAFETY
November 17, 1934

W. D. ...
STATE ENGINEER

W.D. 464

220



Roughen buttress under diagonal strengthening and chip out for key ways a minimum depth of 3" the width of key being the same as the width of the concrete band. Other dimension as shown.

2" Bolts. Do not upset ends. Location as shown

All keys 3 feet wide at locations indicated

Extrados Springing

Intrados Springing

3/4" stirrups 5' o.c. not shown

16-1/4" each side of Buttress

Set Point 6' each side of crack with asphaltic point.

Location and extent of crack varies same in different buttresses.

Proposed Work

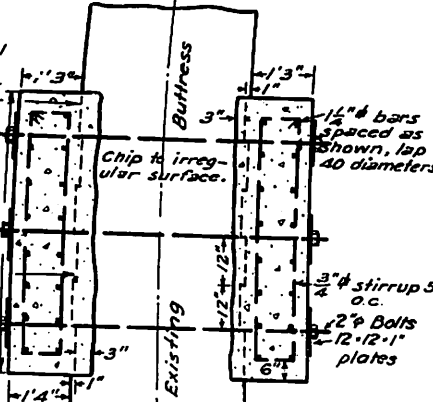
Length to be determined in the field

All steel to be lapped 40 diameters

2" Bolts with 2-12-12" plates each side and with 2 nuts Each end of bolt oiled as directed. Bearing plates shown

4-1/2" each side of buttress to be prestressed by anchoring at El. 286 and turnbuckles to be placed between El. 286 and top

Buttress Thickness.	Elevation
1' 6"	320
1' 6"	283
2' 7 1/2"	263
2' 5 1/2"	243
3' 5 1/2"	223
4' 0 1/2"	203

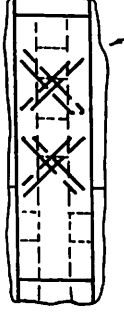


Top of Dam El. 330 See detail

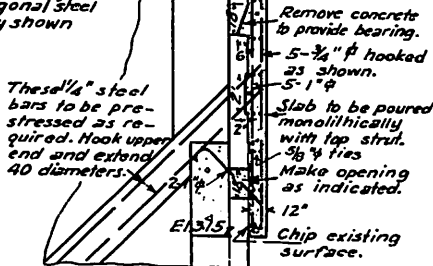
Alternate areas about 1' by 6' under diagonal strengthening shall have El. 320 surface only roughened. See detail

Chip for entire width and length to El. 283 ± for a depth of 1" alternate rectangles about 1' x 6' as directed by the engineer. For keyways chip 3" beyond general chipping as shown

Top of dam



Anchorage for diagonal steel only shown



Remove concrete to provide bearing.

5-3/4" hooked 23 shown.

5-1" #

Slab to be poured monolithically with top strut.

3/8" ties

Make opening as indicated.

12"

Chip existing surface.

Scale of Feet 0 5 10

CITY OF SAN DIEGO CALIFORNIA
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF DEVELOPMENT AND CONSERVATION
 SAN DIEGUITO RIVER PROJECT
 HODGES RESERVOIR DAM
 STRENGTHENING
 Scale as Shown
 October 1933

H. N. Sawyer
 Hydraulic Engineer.

Drawn by P.B.
 Traced by N.C.
 Checked by P.B.

Scale of Feet 0 10 20

TYPICAL BUTTRESS SECTION

Edited to 10-23-34
W. D. O'Leary

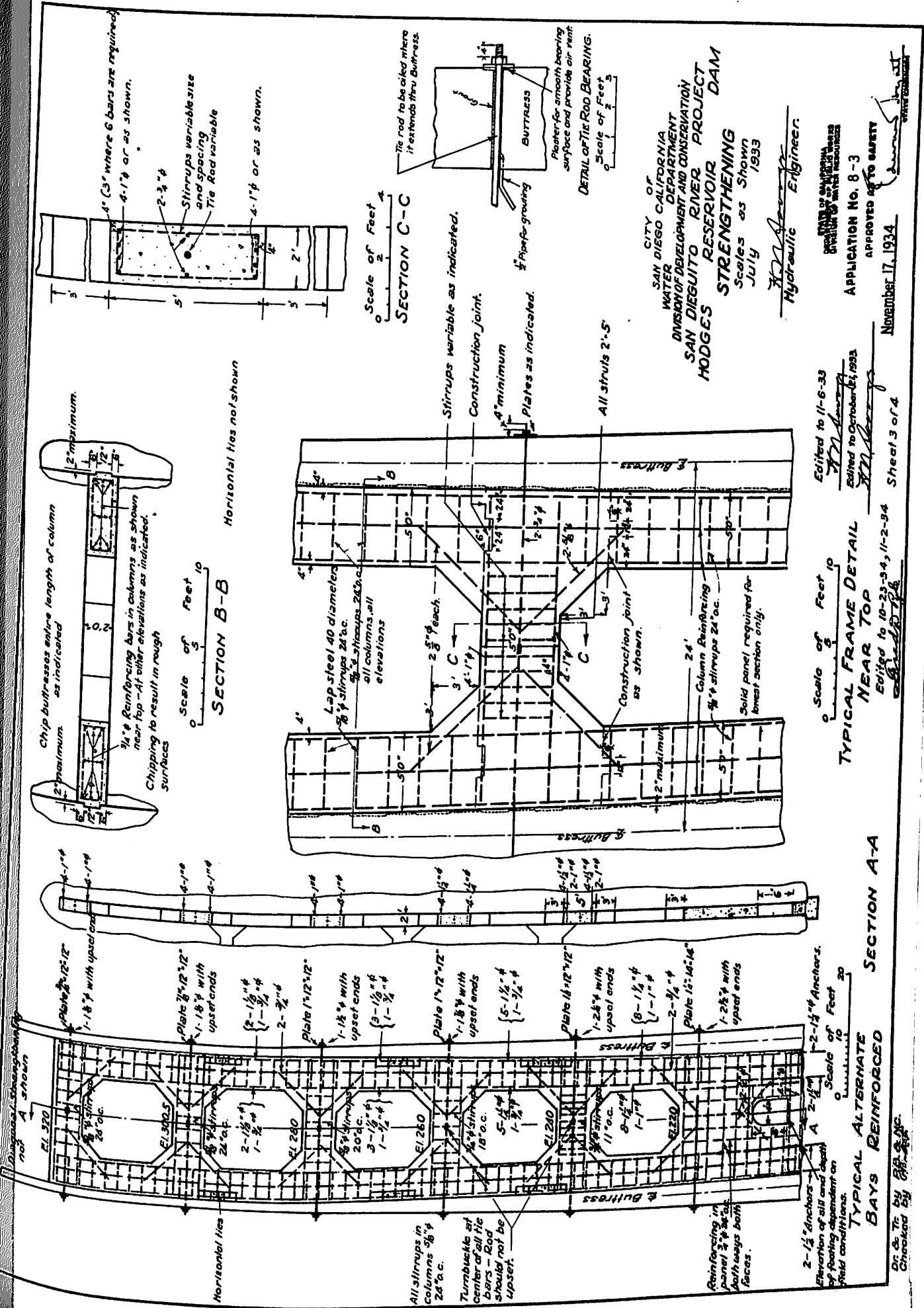
Edited to 11-6-33

APPLICATION No. 8-3
 APPROVED AS TO SAFETY

November 17, 1934

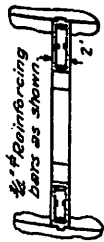
W. D. O'Leary
 STATE ENGINEER

Sheet 2A of 4

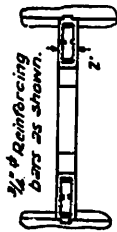


CITY OF CALIFORNIA
 WATER DEPARTMENT
 DIVISION OF DEVELOPMENT AND CONSERVATION
HODGES RESERVOIR DAM
 Scales as Shown
 July 1933
 Hydraulic Engineer

APPROVED AS TO SAFETY
 November 17, 1934
 APPLICATION NO. 8-3
 DIVISION OF WATER RESOURCES

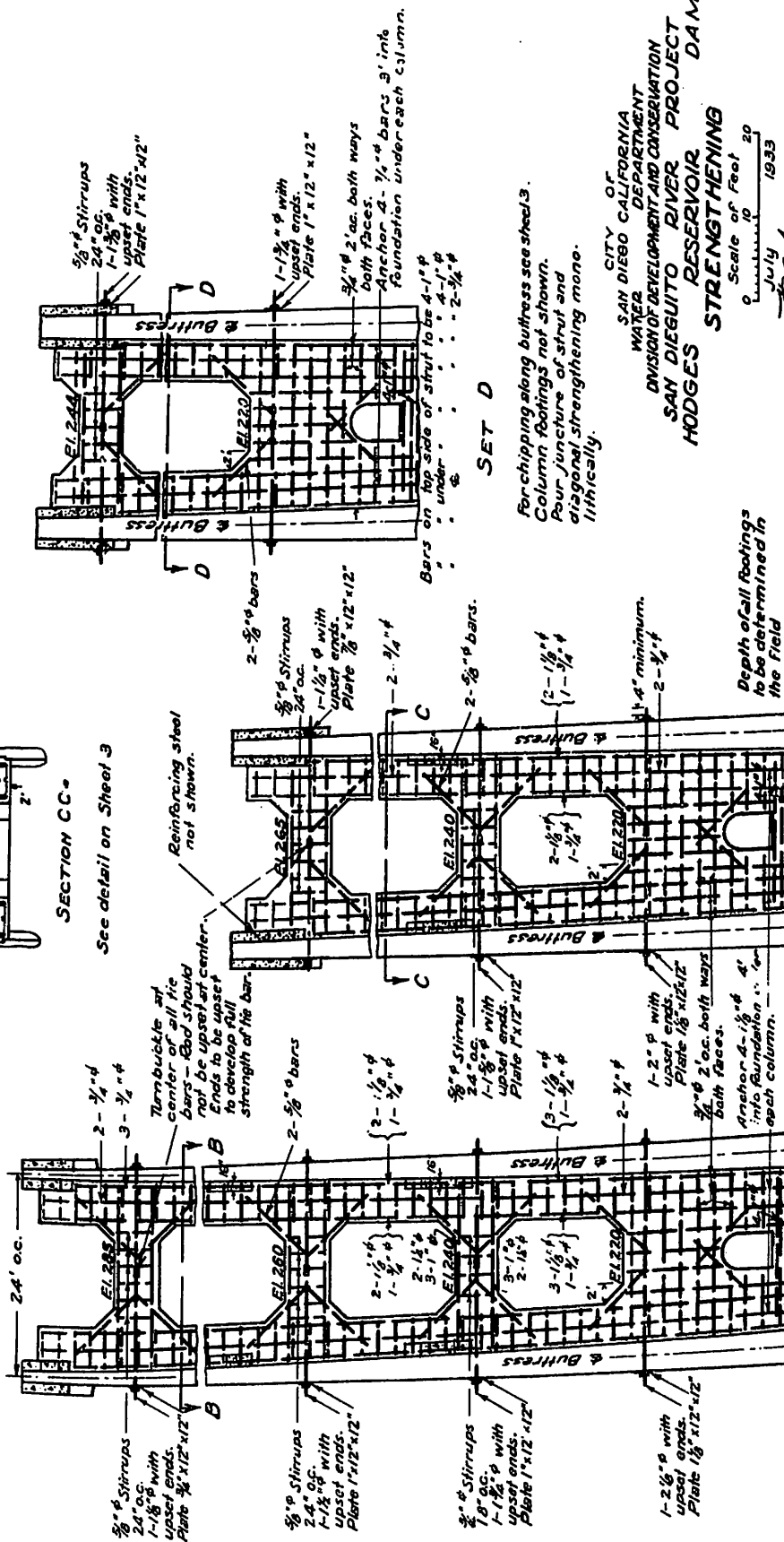


SECTION BB



SECTION CC

See detail on Sheet 3



For chipping along buttress see sheet 3.
Column footings not shown.
Four juncture of strut and diagonal strengthening mono lithically.

CITY OF
SAN DIEGO CALIFORNIA
WATER DEPARTMENT
DIVISION OF DEVELOPMENT AND CONSERVATION
SAN DIEGUITO RIVER PROJECT
HODGES RESERVOIR DAM
STRENGTHENING

Scale of feet
0 10 20
July 1933
Hydraulic Engineer.

Edited to 10-23-34, 11-2-34
Edited to 10-21-33

For bottom strut bars on top side of strut to be 2-1/2 inch & 3-1/4 inch Bars on top side of strut to be 4-1/2 inch & 5-1/4 inch under 2-1/2 inch & 3-1/4 inch

Remainder of struts same as SET C.

SET C

Edited to 10-21-33

APPLICATION NO. 8-3

APPROVED AND SAFETY

November 17, 1934

Edited to 11-2-33

Sheet 4 of 4

Drawn by RB & NC.
Traced by RB & NC.
Checked by RB & NC.

April 15, 1936

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

Subject: PWA Docket Calif. 1223-R Hodges Reservoir Dam
Strengthening, sub-contract with Emsco Concrete
Cutting Corp.

Gentlemen:

With further reference to Document No. 297063, being contract between the City of San Diego and M. H. Golden for PWA Docket Calif. 1223-R Hodges Reservoir Dam Strengthening, enclosed is sub-contract agreement entered into between Contractor M. H. Golden and Emsco Concrete Cutting Corp. 1517 Santa Fe Avenue, Los Angeles, California, for certain drilling, chipping, etc. in connection with the above project.

The enclosed sub-contract agreement appears to be regular and in conformity with the requirements of the specifications filed with the Council under Document No. 296494 and with the rules and regulations of the Public Works Administration.

RECOMMENDATION: It is recommended that the sub-contract agreement between Contractor M. H. Golden and Emsco Concrete Cutting Corp. be approved.

Respectfully

Fred D. Pyle
Hydraulic Engineer

/p
encl.

APPROVED:

City Manager.

THIS AGREEMENT, made this Tenth day of April 1936 by and between EMSCO CONCRETE CUTTING CORP. hereinafter called the Sub-contractor and M. H. GOLDEN hereinafter called the Contractor.

WITNESSETH, That the Subcontractor and Contractor for the considerations hereinafter named agree as follows:

Section 1. The Subcontractor agrees to furnish all material and perform all work as described in Section 2 hereof for Hodges Dam Strengthening for City of San Diego hereinafter called the Owner, at San Diego County in accordance with the General Conditions of the Contract between the Owner and the Contractor and in accordance with the Drawings and the Specifications prepared by City of San Diego Water Department hereinafter called the Architect, all of which General Conditions, Drawings and Specifications signed by the parties thereto or identified by the Architect, form a part of a Contract between the Contractor and the owner dated, March Twenty Fourth 1936, and hereby become a part of this Contract.

Section 2. The Subcontractor and the Contractor agree that the materials to be furnished and work to be done by the Subcontractor are

Item 14: Drilling holes thru concrete	1700 L.Ft.
" 15: Chipping concrete surface	9300 Sq.ft.
" 16: Chipping keyways	1650 Cu.ft.
" 18: Drilling anchor holes in spillway	500 L.ft.
" 19: Drilling anchor holes in footings	1000 L.ft.

Drilling and gadding for Contractor wherever he desires in places not covered by above items.

Furnishing compressed air, of necessary pressure, and at easily accessible points at the base of dam, sufficient for operation of Contractors concrete vibrators and air hoists for duration of Sub-contractor's work.

Section 3. The Subcontractor agrees to complete the several portions and the whole of the work herein sublet by the time or times following:

Work is to commence immediately upon receipt of notice to proceed, and must at all times be kept in step with the progress of the Contractor without delay to him; and to the satisfaction of the Owner and his Representative.

Section 4. The Contractor agrees to pay the Subcontractor for the performance of his work the sum of Total amount to be determined according to the final quantities as determined by the Owners Representative. in current funds, subject to additions and deductions for changes as may be agreed upon, and to make payments on account thereof in accordance with Section 5 hereof.

The quantities as stated in Section 2 are tentative only, and may be varied by the Engineer to suit conditions encountered during construction.

Item 14:	Seventy two cents - - - - -	(\$0.72)	per L.ft.
" 15:	Twenty cents - - - - -	(\$0.20)	" sq.ft.
" 16:	Dollar One and Thirty Six Cents - - -	(\$1.36)	" cu.ft.
" 18:	Forty four cents - - - - -	(\$0.44)	" L. ft.
" 19:	Fifty Three cents - - - - -	(\$0.53)	" L. ft.

Drilling and gadding in places not covered above:
Dollars two and twenty five cents - - (\$2.25) " hour per gun.
(This includes all equipment, tools, fuel and operators required, and will be paid for only actual hours of work.)

Furnishing compressed air for concrete vibrators and air hoists, No charge. The cost of this service is included in above items.

THE TRAVELERS

The Travelers Insurance Company
 The Travelers Indemnity Company

CONTRACTOR'S INSURANCE
 CERTIFICATE

This is to certify that policies, certificates or endorsements of insurance as described below have been issued by The Travelers Insurance Company and/or The Travelers Indemnity Company to the contractor for whom this Certificate is issued and are in force at this time. If canceled or changed during the period of coverage as stated herein in such manner as to affect this Certificate, written notice will be given to the Principal at whose request this Certificate has been issued.

1. Name and address of Owner or Contractor to whom Certificate is issued (herein called "Principal").

M. H. Golden - San Diego, California

2. Location of operations of Principal to which this Certificate applies.

Within the State of California

3. Name and address of Contractor for whom this Certificate is issued (herein called "Employer" or "Assured").

Emsco Concrete Cutting Corporation - 1517 Santa Fe Avenue - Los Angeles, Calif.

4. Policies and Certificates in force - Direct Liability.

	Policy Number	Effective Date	Expiration Date	Limits of Liability
(a) Compensation Policy in state named in Item 2	PAUB 8184628	10-13-35	10-13-36	None
(b) Public Liability Policy-personal injuries	DEX 2282903	10-13-35	10-13-36	\$ 50,000 each person \$125,000 each accident
(c) Property Damage- Policy or Certificate	DEX 2282902	10-13-35	10-13-36	(x) \$ 20,000 each accident

The following business operations are covered under the policies or certificates listed, subject, however, to any exceptions for Property Damage noted below:

(x) Effective 1-6-36

Compensation
 Drilling Work
 Automobile Garage
 Wrecking-not Marine

Public Liability & Property Damage
 Drilling work
 Wrecking-not Marine
 Contractor's permanent yard

Liability for damage to property caused by Explosions of any Character. Explosions of any character or building or structure collapse is excluded for operations classified as Drilling Work - Wrecking Code No. 6204-3451.

5. Endorsements and Certificates in force-Protective Liability.

	End. Form	Effective Date	Expiration Date	Limits of Liability	
(a) Protective Public Liability-personal injuries	1462	10-13-35	10-13-36	\$ 50,000 \$125,000	each person each accident
(b) Protective Property Damage	1468	10-13-35	10-13-36	\$ 20,000	each accident

All operations sublet by the Principal and included as part of the Assured's contract with the Principal are covered if entries so indicating are made herein.

Branch Los Angeles, Calif.

THE TRAVELERS INSURANCE COMPANY
THE TRAVELERS INDEMNITY COMPANY

Dated April 11, 1936

By Wm. E. Shiels Mgr.

DUPLICATE ORIGINAL-TO BE SENT TO THE PRINCIPAL

1. EMPLOYMENT SERVICE AND LABOR PERFORMANCES.- With respect to all persons employed on projects,¹ except as otherwise² provided in Regulation No. 2:

(a) Such persons shall be referred for assignment to such work by the United States Employment Service, and

(b) Preference in employment shall be given to persons from the public relief rolls, and, except with the specific authorization of the Works Progress Administration, at least 90 per cent of the persons employed on any project¹ shall have been taken from the public relief rolls; Provided, however, That, expressly subject to the requirement of subdivision (b), the supervisory, administrative, and highly skilled workers on the project,¹ as defined in the specifications,² need not be so preferred by the United States Employment Service.

(c) AMENDMENT OF OCTOBER 7, 1935, TO PARAGRAPH 1.

(1) The State works progress administrator, or representatives designated by him in writing, are hereby authorized to exempt projects from the requirement that 90 per cent of all persons working on a project shall have been taken from the public relief rolls.

(2) No exemption authorized by the foregoing paragraph (1) shall be granted unless the United States Employment Service (or such other agency for the placement of workers as may be designated by the Federal Works Progress Administrator to act in lieu of the United States Employment Service) shall have certified to such State works progress administrator or a representative designated by him, that there are no qualified workers on the public relief rolls available within the vicinity of the project. The term 'within the vicinity of the project' shall be construed to mean an area within which the worker may travel to and from work without unusual expenditure of time or expensive cost for transportation.

(3) In the event that an exemption is granted for a project pursuant to the provisions of the foregoing paragraph (1), the United States Employment Service (or such other agency for the placement of workers

as may be designated by the Federal Works Progress Administrator to act in lieu of the United States Employment Service) in assigning workers to such project who are not taken from the relief rolls, shall give preference, first, to bona fide residents of the political subdivision which is financing, in part, the construction of the project, and, second, to bona fide residents of the county in which the project is located, to the extent that labor technically qualified to perform the work is available in such political subdivision and county.

(4) The foregoing provisions are subject to the further condition that when organized labor is desired and requested by the contractor, all organized labor, skilled and unskilled, employed upon the project shall be supplied by the employment agencies designated by the United States Employment Service (or such other agency for the placement of workers as may be designated by the Federal Works Progress Administrator to act in lieu of the United States Employment Service) from the membership of recognized unions, with preference, first, to those members of such unions who constitute regular employees of the contractor and who are on the local public relief rolls, second, to other members of such unions who are on the relief rolls, and upon the exhaustion of union members on such rolls, to any other members of the union. In the event, however, that qualified workers are not made available from the membership of the unions within 48 hours (Sundays and holidays excepted) after a request therefor is filed by the contractor, and the employment agency has notified the unions of the receipt of such request, such labor may be chosen by the contractor from other qualified workers, supplied by employment agencies designated by the United States Employment Service (or such other agency for the placement of workers as may be designated by the Federal Works Progress Administrator to act in lieu of the United States Employment Service). The provisions of this paragraph are subject to the further requirement that the preponderance of labor employed upon a project shall be taken from bona fide residents of the political subdivision which is financing, in part, the construction of the project, and the remainder from the county in which the project is located, to the extent that labor technically qualified to perform the work is available therein.

2. QUALIFICATIONS FOR EMPLOYMENT.- (a) No persons currently serving sentence to a penal or correctional institution shall be employed on the project.¹

(b) No person under the age of sixteen (16) years, and no one whose age or physical condition is such as to make his employment dangerous to his health or safety, or the health and safety of others, may be employed on the project. This paragraph shall not be construed to operate against the employment of physically handicapped persons, otherwise employable, where such persons may be safely assigned to work which they can ably perform.

(c) Except as specifically provided above, workers who are qualified by training and experience and certified for work on the project by the United States Employment Service shall not be discriminated against on any grounds whatsoever. The contractor may dismiss any employee not qualified to perform the work for which he had been referred, subject to disapproval by the owner.

(d) Employees shall have the right to organize and bargain collectively through representatives of their own choosing, and shall be free from the interference, restraint, or coercion of employers of labor, or their agents, in the designation of such representatives or in self-organization or in other concerted activities for the purpose of collective bargaining or other mutual aid or protection. No employee and no one seeking employment shall be required as a condition of employment to join any company union

or to refrain from joining, organizing, or assisting a labor organization of his own choosing.

3. HOURS OF WORK.- (a) Except in case of emergency:

- (1) The maximum hours of work for manual labor shall be 8 hours per day and 130 hours per month. On the projects located at points so remote and inaccessible that camps or floating plants are necessary, the maximum hours of work for manual labor shall be 8 hours per day and 40 hours per week.
- (2) The maximum hours of work for cooks, camp assistants, and clerical and other non-manual employees such as watchmen, policemen, and messengers, shall be 8 hours per day and 40 hours per week.
- (3) Administrative and supervisory employees, including executive employees, timekeepers and storekeepers, who perform in a work-week not more than 15 hours of manual labor (or, in case the project is being constructed on a 40-hour week basis, not more than 20 hours) shall not be subject to any limitation of hours of work.
- (4) Wherever practicable, the contractor shall perform the work in at least double shifts of labor, unless otherwise provided in this contract. The contractor shall not knowingly employ under this contract any person engaged in any other gainful occupation whose weekly hours of labor on such occupation, together with his hours of labor on the project, exceed the limitations of hours prescribed for employees of his classification under this contract.

- 1 The term "projects" or "Project" as here used means the portion of the project covered by this contract.
- 2 Exception relates only to employees of the owner. Regulation No. 2 is Executive Order No. 7060, approved by the President, June 5, 1935.
- 3 The term "specifications" as here used means any one of the contract documents.

(b) Nothing in these regulations is intended to authorize hours or days of work in excess of the limitations of any applicable law or regulations.

4. WAGES AND PAY ROLLS.- (a) There shall be paid each employee engaged in the trade or occupation listed below not less than the hourly wage rate set opposite the same, namely:

<u>Trade or Occupation</u>	<u>Per Diem Wage</u>	<u>Hourly Wage rate</u>	<u>Rates for Legal Holidays and Overtime</u>
Auto Mechanic	\$6.00	\$.75	Time & One-Half
Blacksmiths	6.00	.75	do
Cableway Operators	8.00	1.00	do
Carpenter Foremen	8.80	1.10	do
Carpenters	8.00	1.00	do
Cement Finishers	8.00	1.00	do
Compressor Operators	6.00	.75	do
Concrete Finishers	8.00	1.00	do
Concrete Foremen	8.80	1.10	do
Concrete Form Builders	8.00	1.00	do
Concrete Spreaders	5.00	.62-1/2	do
Concrete Tampers	5.00	.62-1/2	do
Concrete Mixermen	5.00	.62-1/2	do
Crane Operators	9.00	1.12-1/2	do
Derrick Operators	9.00	1.12-1/2	do
Dragline Operators	9.00	1.12-1/2	do
Drillers	7.00	.87-1/2	do
Drill Sharpeners	6.00	.75	do
Electricians	9.00	1.12-1/2	do
Excavation Foremen	6.00	.75	do
General Foremen	8.80	1.10	do
Hoist Operators	9.00	1.12-1/2	do
Laborers, Common	5.00	.62-1/2	do
Materialmen	6.00	.75	do
Mechanics	6.00	.75	do
Mechanic Trouble Shooters	6.00	.75	do
Mortar Men	8.00	1.00	do
Pump Men	6.00	.75	do
Reinforcing Steel Foremen	8.80	1.10	do
Reinforcing Steel Workers: (Placers and Tiers)	8.00	1.00	do
Riggers (other than heavy)	9.00	1.12-1/2	do
Shovel Operators:			do
1 yard or over	10.00	1.25	do
Under 1 yard	8.00	1.00	do
Shovel Cranesmen	6.00	.75	do
Shovel Oilers	6.00	.75	do
Shovel Pitmen	5.00	.62-1/2	do
Superintendents	8.80	1.10	do
Tractor Operators	6.00	.75	do

<u>Trade or Occupation</u>	<u>Per Diem Wage</u>	<u>Hourly Wage rate</u>	<u>Rates for Legal Holidays and Overtime</u>
Timekeepers	\$6.00	\$.75	Time & One-half
Truck Drivers under 15500 pounds	5.44	.68	do
Truck Drivers over 15500 pounds	6.00	.75	do
Welders	8.00	1.00	do

Any craft or employment not specifically mentioned in the foregoing Schedule of rates shall be paid not less than \$5.00 per diem of 8 hours.

If after the award of this contract it becomes necessary to employ any person in a trade or occupation not herein listed, such person shall be paid not less than such hourly rate of wage, fairly comparable to the above rates, as shall be approved by the State Director, and such minimum wage rate shall be retroactive to the time of the initial employment of such person in such trade or occupation.

(b) Unless otherwise provided by law, claims or disputes pertaining to the classification of labor under this contract shall be decided by the owner subject to the right of final review by the State Director whose decision shall be binding on all parties concerned.

(c) All employees shall be paid in full, at least once each week within 3 days after the close of the pay-roll period, in lawful money of the United States, unless otherwise authorized in writing by the State Director: Provided, however, that this paragraph shall not be construed to prohibit deductions required by law and collection of obligations by legal process.

(d) A clearly legible statement of the minimum wage rate to be paid each trade and occupation employed under this contract and of the authorized deductions therefrom, if any, shall be posted by the contractor in a prominent and easily accessible place at the site of the work.

(e) The contractor and each subcontractor shall prepare the pay rolls upon forms to be prescribed and in accordance with instructions to be furnished by the Works Progress Administration. Not later than the day following the payment of the wages a certified legible copy of each pay roll, whether paid by the contractor or any subcontractor, shall be transmitted by the contractor to such office as may be designated by the Works Progress Administration. The contractor and each sub-contractor shall submit reports at such times and on such forms as may be required by the Works Progress Administration, covering purchases of, and requisitions for, materials, together with such other information as may be required to determine the progress and status of the completion of the work on the project. Such pay rolls shall be

sworn to in accordance with the "Regulations Issued Pursuant to So-called Kick-back Statute", issued jointly by the Secretary of the Treasury and the Secretary of the Interior on January 12, 1935, a copy of which is herein elsewhere set forth.

5. ACCIDENT PREVENTION.- Precaution shall be exercised at all times for the protection of persons and property. The safety provisions of applicable laws, building and construction codes shall be observed. Machinery and equipment and other hazards shall be guarded in accordance with the safety provisions of the Manual of Accident Prevention in Construction, published by the Associated General Contractors of America, to the extent that such provisions are not inconsistent with applicable law or regulation.

7. MATERIALS- (A) DOMESTIC. It is further understood and agreed, that in accordance with the provisions of Chapter 226, Statutes of California, 1933, it will be required that only such un-manufactured articles, materials and supplies as have been mined, or produced in the United States, and only such manufactured articles, materials and supplies as have been manufactured in the United States, substantially all from articles, materials and supplies mined, produced or so manufactured, as the case may be, in the United States, shall be used in the performance of the contract. However, as also provided in said Chapter 226, such provisions shall not apply if articles, materials or supplies of the class or kind to be used, or the articles, materials or supplies from which they are manufactured are not mined, produced or manufactured, as the case may be, in the United States. The above references to the United States mean the United States of America, and include any Territory or insular possession thereof."

(b) Convict Made.- No materials manufactured or produced in a penal or correctional institution shall be used on or incorporated in the project, unless required by law.

8. INSPECTION.- (a) The Administrator through his authorized agents, and the Works Progress Administration, through its authorized agents, shall have the right to inspect all work and materials, shall have access to all pay rolls, records of personnel, invoices of material, and all other data and records relevant to the performance of this contract.

(b) Facilities shall be provided as set forth in the specifications for the use of the Government Inspector.

9. CONSTRUCTION REPORTS.- The contractor shall submit to the Owner schedules of the cost of labor, costs and quantities of materials and other items supported as to correctness by such evidence as, and in such form as, the Administrator through his authorized agents may require. Submission of this information shall be a condition precedent to any payment under this contract. In addition to any records herein required, the following records, on forms to be furnished by the Public Works Administration, are required:

- (1) Detailed Estimate (Contract "break-down").
- (2) Construction Schedule (Chart of Contemplated Progress).
- (3) Periodical Estimates for Partial Payment.

10. DEPARTMENT OF LABOR REPORTS.- The contractor and each sub-contractor shall report to the United States Department of Labor monthly, within five days after the close of each calendar month upon forms to be prescribed, and in accordance with instructions to be furnished, by the United States Department of Labor, covering the number of persons on their respective pay rolls directly connected with the project, the aggregate amounts of such pay rolls and the man-hours worked, and an itemized statement of the total expenditures for materials. The contractor shall also furnish to the United States Department of Labor the names and addresses of all subcontractors on the work at the earliest date practicable.

11. PAYMENTS.- (a) The contractor shall provide all labor, services, material, and equipment necessary to perform and complete the work under this contract. Except as otherwise approved by the owner and the State Director, the contractor (1) shall pay for in full all transportation and utility services on or before the 20th day of the month following the calendar month in which such services are rendered, and (2) shall pay for all materials, tools, and other expendible equipment, to the extent of 90 per cent of the cost thereof, on or before the 20th day of the month following the calendar month in which such materials, tools, and equipment are delivered to the project, and the balance of the cost within 30 days after completion of that part of the work in or on which such materials, tools, and other equipment are incorporated or used.

(b) In the absence of other provisions in this contract more favorable to the subcontractor, the contractor shall pay each subcontractor, within five days after each payment made to the contractor, the amount allowed the contractor for and on account of the work performed by the subcontractor, to the extent of the subcontractor's interest therein.

14. OBSERVANCE OF RULES.- All reasonable requirements which the Administrator or his authorized agents may make toward the effectuation of the matters covered in these construction Regulations shall be observed in the performance of the work.

18. PRIORITY OF CONSTRUCTION REGULATIONS.- Any provisions of this contract in conflict or inconsistent with the requirements of these Regulations, except such provisions as are required by applicable law or regulation, shall be void to the extent of such conflict or inconsistency.

19. DEFINITIONS.- The following terms as used in this contract are respectively defined as follows:

"Act": The Emergency Relief Appropriation Act of 1935.

"P.W.A." or Public Works Administration": The Federal Emergency Administration of Public Works.

"Administrator": The Federal Emergency Administrator of Public Works.

"State Director": State Director (P.W.A.), his duly authorized representative or any person designated by the Administrator to perform his duties or functions.

"Government Inspector": The representative of the Inspection Division (P.W.A.).

"Owner": The public body, agency, or instrumentality which is a party hereto and for which this contract is to be performed.

"Emergency": A temporary unforeseen occurrence or combination of circumstances which endangers life or property and calls for immediate action or remedy.

"Material": Materials incorporated in the project, or used or consumed in the performance of the work.

"Subcontractor": A person, firm, or corporation supplying labor and materials or labor for work at the site of the project.

"Work at Site of Project": Work to be performed, including work normally done, on the location of the project.

20. Paragraphs 1, 2(a), (b) and (c), 3(a) (1) and (2), 4(e), 8(a) and 10 incorporate rules and regulations issued by the President under the authority of section 6 of the Act. Any willful violation of any such rule or regulation is punishable by fine of not to exceed \$1,000.

(3) Pursuant to the provisions of Public Act No. 324, Seventy-third Congress, approved June 13, 1934 (48 Stat. 948), concerning rates of pay for labor, the Secretary of the Treasury and the Secretary of the Interior hereby jointly promulgate the following regulations:

SECTION 1. Said Act reads as follows:

To effectuate the purpose of certain statutes concerning rates of pay for labor by making it unlawful to prevent anyone from receiving the compensation contracted for thereunder, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

That whoever shall induce any person employed in the construction, prosecution, or completion of any public building, public work, or building or work financed in whole or in part by loans or grants from the United States or in the repair thereof to give up any part of the compensation to which he is entitled under his contract of employment, by force, intimidation, threat of procuring dismissal from such employment, or by any other manner whatsoever shall be fined not more than \$5,000, or imprisoned not more than five years, or both.

Sec. 2. To aid in the enforcement of the above section, the Secretary of the Treasury and the Secretary of the Interior jointly shall make reasonable regulations for contractors or subcontractors on any such building or work, including a provision that each contractor and subcontractor shall furnish weekly a sworn affidavit with respect to the wages paid each employee during the preceding week.

Section 2. Each contractor and subcontractor engaged in the construction, prosecution, or completion of any building or work of the United States or of any building or work financed in whole or in part by loans or grants from the United States, or in the repair thereof, shall furnish each week an affidavit with respect to the wages paid each employee during the preceding week. Said affidavit shall be in the following form:

State of _____

County of _____, ss:

I, _____ (name the party signing affidavit) _____ (Title), do hereby certify that I am (the employee of) _____ (name of contractor or subcontractor) who supervises the payment of the employees of said contractor (subcontractor); that the attached pay roll is a true and accurate report of the full weekly wages due and paid to each person employed by the said contractor (subcontractor) for the construction of _____ (project), for the weekly pay roll period from the _____ day of _____, 193____; that no rebates or deductions from any wages due any such person as set out on the attached pay roll have been directly or indirectly made; and that, to the best of my knowledge and belief, there exists no agreement or understanding with any person employed on the project, or any person whatsoever, pursuant to which it is contemplated that I or anyone else shall, directly or indirectly, by force, intimidation, threat or otherwise, induce or receive any deductions or rebates in any manner whatsoever from any sum paid or to be paid to any person at any time for labor performed or to be performed under the contract for the above named project.

Sworn to before me this _____ day of _____, 193____.

Section 3. Said affidavit shall be executed and sworn to by the officer or employee of the contractor or subcontractor who supervises the payment of its employees.

Said affidavit shall be delivered, within three days after the payment of the payroll to which it is attached, to the Government representative in charge at the site of the particular project in respect of which it is furnished; who shall forward the same promptly to the Federal agency having control of such project. If no Government representative is in charge at the site, such affidavit shall be mailed within such three-day period to the Federal agency having control of the project.

Section 4. At the time upon which the first affidavit with respect to the wages paid to employees is required to be filed by a contractor or subcontractor pursuant to the requirements of these regulations, there shall also be filed in the manner required by Section 3 hereof a statement under oath by the contractor or subcontractor, setting forth the name of its officer or employee who supervises the payment of employees, and that such officer or employee is in a position to have full knowledge of the facts set forth in the form of affidavit required by Section 2 hereof. A similar affidavit shall be immediately filed in the event of a change in the officer or employee who supervises the payment of employees. In the event that the contractor or subcontractor is a corporation, such affidavit shall be executed by its president or a vice president. In the event that the contractor or subcontractor is a partnership, such affidavit shall be executed by a member of the firm.

Section 5. These regulations shall be made a part of each contract executed after the effective date hereof by the Government for any of the purposes enumerated in Section 2 hereof.

Section 6. These regulations shall become effective on January 15, 1935.

The clause in the pay-roll affidavit which reads ". . . that the attached pay roll is a true and accurate report of the full weekly wages due and paid to each person employed by the said contractor . . ." is construed by the Public Works Administration to mean:

(a) Wages due are the wages earned during the pay period by each person employed by the contractor, less any deductions required by law.

(b) At the time of signing the affidavit, the wages due each employee have either been paid to him in full or are being held subject to claim by him.

(c) Such unpaid wages will be paid in full on demand of the employee entitled to receive them.

The clause ". . . that no rebates or deductions from any wages due any such person as set out on the attached pay roll have been directly or indirectly made" does not apply to any legitimate

deductions mentioned above which enter into the computation of full weekly wages due.

The "Regulations issued Pursuant to So-called Kick-back Statute" shall not be construed to prohibit deductions required by law or benefits voluntarily authorized by permanent employees of equipment suppliers engaged in installation of the equipment at the site of the project.

(4) Section 9 of the Emergency Relief Appropriation Act of 1935, reads as follows:

"Any person who knowingly and with intent to defraud the United States makes any false statement in connection with any application for any project, employment, or relief aid under the provisions of this joint resolution, or diverts, or attempts to divert, or assists in diverting for the benefit of any person or persons not entitled thereto, any moneys appropriated by this joint resolution, or any services or real or personal property acquired thereunder, or who knowingly, by means of any fraud, force, threat, intimidation, or boycott, deprives any person of any of the benefits to which he may be entitled under the provisions of this joint resolution, or attempts so to do, or assists in so doing, shall be deemed guilty of a misdemeanor and shall be fined not more than \$2,000 or imprisoned not more than one (1) year, or both"

"Section 35 of the Criminal Code, as amended, provides a penalty of not more than \$10,000 or imprisonment of not more than ten (10) years, or both, for knowingly and willfully making or causing to be made "any false or fraudulent statements . . . or use or cause to be made or used any false . . . account, claim certificate, affidavit, or deposition, knowing the same to contain any fraudulent or fictitious statement . . . "relating to any matter within the jurisdiction of any Governmental department or agency.

Notwithstanding anything contained herein to the contrary all other terms and conditions of the above mentioned Subcontract to remain in full force and effect.

Dated this 10th day
6th April 1936

M. H. GOLDEN

By M. H. Golden
Contractor

Subcontractor:

EMSCO CONCRETE CUTTING CORPORATION

W. J. Comett

Section 5. The Contractor and Subcontractor agree to be bound by the terms of the Agreement, the General Conditions, Drawings and Specifications as far as applicable to this subcontract, and also by the following provisions:

The Subcontractor agrees—

(a) To be bound to the Contractor by the terms of the Agreement, General Conditions, Drawings and Specifications, and to assume toward him all the obligations and responsibilities that he, by those documents, assumes toward the Owner.

(b) To submit to the Contractor applications for payment in such reasonable time as to enable the Contractor to apply for payment under Article 24 of the General Conditions.

(c) To make all claims for extras, for extensions of time and for damages for delays or otherwise, to the Contractor in the manner provided in the General Conditions for like claims by the Contractor upon the Owner, except that the time for making claims for extra cost is one week.

The Contractor agrees—

(d) To be bound to the Subcontractor by all the obligations that the Owner assumes to the Contractor under the Agreement, General Conditions, Drawings and Specifications, and by all the provisions thereof affording remedies and redress to the Contractor from the Owner.

(e) To pay the Subcontractor, upon the issuance of certificates, if issued under the schedule of values described in Article 24 of the General Conditions, the amount allowed to the Contractor on account of the Subcontractor's work to the extent of the Subcontractor's interest therein.

(f) To pay the Subcontractor, upon the issuance of certificates, if issued otherwise than as in (e), so that at all times his total payments shall be as large in proportion to the value of the work done by him as the total amount certified to the Contractor is to the value of the work done by him.

(g) To pay the Subcontractor to such extent as may be provided by the Contract Documents or the subcontract, if either of these provides for earlier or larger payments than the above.

(h) To pay the Subcontractor on demand for his work or materials as far as executed and fixed in place, less the retained percentage, at the time the certificate should issue, even though the Architect fails to issue it for any cause not the fault of the Subcontractor.

(j) To pay the Subcontractor a just share of any fire insurance money received by him, the Contractor, under Article 29 of the General Conditions.

(k) To make no demand for liquidated damages or penalty for delay in any sum in excess of such amount as may be specifically named in the subcontract.

(l) That no claim for services rendered or materials furnished by the Contractor to the Subcontractor shall be valid unless written notice thereof is given by the contractor to the Subcontractor during the first ten days of the calendar month following that in which the claim originated.

(m) To give the Subcontractor an opportunity to be present and to submit evidence in any arbitration involving his rights.

(n) To name as arbitrator under arbitration proceedings as provided in the General Conditions the person nominated by the Subcontractor, if the sole cause of dispute is the work, materials, rights or responsibilities of the Subcontractor; or, if of the Subcontractor and any other subcontractor jointly, to name as such arbitrator the person upon whom they agree.

The Contractor and the Subcontractor agree that--

(o) In the matter of arbitration, their rights and obligations and all procedure shall be analogous to those set forth in this contract.

Nothing in this article shall create any obligation on the part of the Owner to pay to or to see to the payment of any sums to any Subcontractor.

Section 6.

a: The Subcontractor agrees to pay any and all State and Federal taxes and fees applicable to this contract.

b: The Subcontractor further agrees to pay all necessary industrial insurance, public liability and property damage insurance premiums applicable to this contract; and to furnish to the Contractor, for approval by the Owner and P.W.A. officers, three (3) certified copies of each of these policies. Said copies to be addressed to the Contractor.

c: The Subcontractor agrees to be bound by and to comply with P.W.A. construction rules and regulations, and regulations as stated on the attached sheets numbers 1 to 17 inclusive.

Section 7:

The Contractor agrees to erect sufficient steel or wood skeleton for scaffolding, and to furnish a reasonable amount of suitable planking for same; but the Subcontractor agrees to place the planking as it is needed, and to bring it with him from lift to lift as his work proceeds.

IN WITNESS WHEREOF the parties hereto have executed this agreement the day and year first above written.

M. H. GOLDEN

EMSCO CONCRETE CUTTING CORP.

M. H. Golden
Contractor

W. J. Comett
Subcontractor

COMMENCEMENT
PROSECUTION
and
COMPLETION OF WORK

3-9-37
copy/p

March 11, 1936

Mr. A. D. Wilder
Acting State Director PWA
805 Washington Building
Los Angeles, California

Subject: PWA Docket Calif. 1223-R Hodges
Reservoir Dam Strengthening, Bids

Dear Sir:

In compliance with PWA Bulletin "A" in connection with
PWA Docket Calif. 1223-R Hodges Reservoir Dam Strengthening,
enclosed are:

1. 4 blue prints of Drawing WD-553 Tabulation
of Bids received March 10, 1936
2. Certified copy of each of the three low
bids including signed statement of their
financial responsibility and technical
qualifications.

The Hydraulic Engineer will make his recommendation to
the City Council today that award of contract, subject to
approval of PWA be made to the low bidder, M. H. Golden, and
it is expected that the Council will take action in this
matter Tuesday, March 17, 1936. The required documents will
be forwarded to your office as soon as possible thereafter.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p
encls.(7)

March 11, 1936

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

Subject: Hodges reservoir dam strengthening
PWA Docket Calif. 1223 R, bids

Gentlemen:

The following is a summary of the bids received until 10 o'clock a.m. March 10, 1936 and thereafter opened and read by the City Clerk of the City of San Diego in Council meeting for the Hodges reservoir dam strengthening on the basis of unit prices bid:

<u>Bidder</u>	<u>Bid Total</u>
M. H. Golden, San Diego	\$ 130,612.50
B. O. Larsen, San Diego	140,231.00
Case Constructn Co. Inc. Alhambra	156,810.00
Bent Brothers Inc. Los Angeles	161,177.00
George Hess, Los Angeles	167,432.00
V. R. Dennis, San Diego	171,242.50
Frank Doran, San Diego	179,189.00
L. E. Dixon Co. Los Angeles	179,621.00

Enclosed is print of drawing WD-553 being tabulation of the bids received. The following funds are available or will become available as the work progresses for Hodges reservoir dam strengthening:

(1) Ordinance 727 - now available	20,000.00
(2) Ordinance 728 - now available	50,000.00
(3) Ordinance 729 - now available	11,800.00
(4) Ordinance 827 - now available	17,200.00
(5) PWA grant which will be advanced as the work progresses and the expenditures are approved	<u>81,000.00</u>
Total	\$180,000.00

Barring unforeseen difficulties, it is indicated that, based on the low bid, the total cost of the Hodges reservoir dam strengthening work will be about \$150,000.00.

M. H. Golden, with a total bid of \$130,612.50 on the basis of unit prices bid and schedule quantities, is the low bidder; he has adequate financial responsibility, equipment and technical experience and other qualifications to perform the work; his bid appears regular in every way; the bonding company guaranteeing to furnish bond is in conformity with the list of insurance

To the Honorable, the Mayor
and Council

-2

3/11/36

companies furnished by PWA and is acceptable to the City.
M. H. Golden also has satisfactorily completed other work for
the City of San Diego.

RECOMMENDATION: It is recommended that the PWA be request-
ed to authorize the City to award the contract for Hodges
reservoir dam strengthening to the low bidder, M. H. Golden,
Bank of America Building, San Diego; that his bid be accepted
and that award be made by the Council, subject to approval by
PWA, at the earliest practicable date.

Respectfully

Fred D. Pyle
Hydraulic Engineer

BB/p

APPROVED:

R. W. Flack
City Manager

3-9-37
copy/p

March 17, 1936

Mr. A. D. Wilder
Acting State Director PWA
805 Washington Building
Los Angeles, California

Subject: PWA Docket Calif. 1223-R Hodges
Reservoir Dam Strengthening

Dear Sir:

Enclosed is certified copy of Resolution No. 64135 of the Council of the City of San Diego, requesting authorization by the PWA of award by the City of San Diego of contract for Hodges Reservoir Dam Strengthening PWA Docket Calif. 1223-R, to the low bidder - H. H. Golden, 531 Bank of America Building, San Diego, California; and

Copy of letter dated March 11, 1936, Hydraulic Engineer to the Mayor and Council of the City of San Diego recommending that the PWA be requested to authorize the City to award the contract to the low bidder; and

Certified statement by the Auditor of the City of San Diego certifying to the amount of money available.

Respectfully

Fred D. Pyle
Hydraulic Engineer

/p
encls.(3)

3-9-37
copy/p

March 23, 1936

Mr. Fred D. Pyle, Hydraulic Engineer
City of San Diego Water Department
524 F Street
San Diego, California

Calif. 1223 R
City of San Diego
Strengthening Hodges Dam

Dear Sir:

This will acknowledge receipt of your letter of March 11, 1936, enclosing four (4) copies of tabulation of bids received by you on March 10, 1936, relative to the above designated project, together with one copy of proposal and one statement of qualifications from each of the three low bidders.

The above documents have been examined by this office. Your recommendation is hereby approved and you are authorized to execute the contract with M. H. Golden 531 Bank of America Building, San Diego, California, in the amount of \$130,612.50. As soon as the contract has been executed, please send to this office the documents listed in State Engineer's Bulletin No. "A" under Section V. "Executed Contract Documents."

Upon receipt of the above documents, they will be examined by this office and if they are approved you will be authorized to proceed with the work. Please note that no documents will be approved unless they conform in all respects with those we have already approved as to form.

We are sending you herewith one (1) copy of PW 16249 re Engineer's and/or Architect's Estimate (Breakdown) and ten (10) copies of PW Form 96, Detailed Estimate. Please fill out and return to this office as soon as possible nine (9) copies of PW Form 96 re above designated project, in conformity with the instructions in PW 16249. Please note that you are required to attach to Form 96 a statement showing the estimated cost of your inspection and supervision in the field. Please also note that your construction contract will not be approved, nor will construction be permitted to proceed, until a satisfactory breakdown has been submitted to this office on these forms PW 96.

Very truly yours

A. D. WILDER, ACTING STATE DIRECTOR (Calif.)

By Dwight W. Stephenson, Assistant

For the Administrator.

Encs.
CWS:NB

3-9-37
copy/p

March 24, 1936

Mr. A. D. Wilder
State Director PWA
805 Washington Building
Los Angeles, California

Subject: PWA Docket Calif. 1223-R
Hodges Reservoir Dam
Strengthening, executed
contract and documents

Dear Sir:

Enclosed are six copies of the complete contract documents for PWA Docket Calif. 1223-R Hodges Reservoir Dam Strengthening, the bound books, of which two are executed in original, contain

1. Plans
2. Specifications
3. Instructions to Bidders
4. Bid Proposals
5. Contract agreement
6. Advertisements
7. Faithful performance bond
8. Labor and materialmens bond

There are also enclosed the following:

9. 10. 11 Six of each
Public liability certificate of insurance AL-90198
Public liability certificate of insurance PL-3222
Compensation certificate of insurance WC-13119
Automobile liability and property damage insurance
Letter March 20, 1936 from Occidental Indemnity
Company re steam boiler insurance
12. One certified copy of Resolution No. 64183
13. Nine copies of Form 96

Any other data required will be furnished upon request. Your earliest approval and authorization to commence the work will be appreciated.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p
encls. (48)

March 24, 1936

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

Subject: PWA Docket Calif. 1223-R Hodges Reservoir
Dam Strengthening, execution of contract
with M. H. Golden

Gentlemen:

With further reference to letter of the Hydraulic Engineer
to the Honorable, the Mayor and Council dated March 11, 1936,
and Council Resolution No. 64135;

Enclosed is copy of letter dated March 23, 1936 from
Public Works Administration authorizing execution of the
contract with M. H. Golden, 531 Bank of America Building,
San Diego, California, in the amount of \$130,612.50 for Hodges
reservoir dam strengthening, PWA Docket Calif. 1223-R, on the
basis of the schedule quantities and unit prices bid.

RECOMMENDATION: It is recommended that the Council enter
into contract with M. H. Golden for Hodges reservoir dam
strengthening in accordance with the enclosed letter from
the Public Works Administration.

Respectfully

Fred D. Pyle
Hydraulic Engineer

FDP/p
encl.

APPROVED:

R. W. Flack
City Manager

3-9-37
copy/p

March 26, 1936

Mr. Fred D. Pyle
Hydraulic Engineer
City of San Diego Water Dept.
524 F Street
San Diego, California

Calif. 1223 R
City of San Diego
Hodges Reservoir Dam
Strengthening

Dear Sir:

This will acknowledge receipt of your letter of March 24, 1936, with the accompanying executed copies and facsimile copies of contract documents as listed, covering the contract between the City of San Diego and M. H. Golden, 531 Bank of America Bldg., San Diego, California, for the construction of the above designated project.

The above mentioned contract documents are hereby approved. You are authorized to proceed with the work as soon as a representative of Mr. O. E. Carr, State Engineer Inspector, PWA, 805-M Washington Building, Los Angeles, arrives on the project. It is suggested that you immediately notify Mr. Carr as to the date upon which you desire to begin actual construction work.

We are returning to you two (2) approved executed sets of contract, performance bond, labor and material bond, plans and specifications; one set to be retained by you and the other set to be delivered by you to the contractor. We are also returning to you one facsimile set of the above documents to be kept intact on the site of the project for official reference and are not to be used for working reference.

Very truly yours

A.D. WILDER, ACTING STATE DIRECTOR
(Calif.)

By Dwight W. Stephenson

For the Administrator

Enclosures
CWS:NB

March 27, 1936

From : Hydraulic Engineer
To : L. H. Hill
Subject : Records of work

Records of work should include the following:

(a) Resident Engineer's Daily Diary: To be kept in ink in Resident Engineer's own handwriting and should show:

1. Progress of work
2. Salient developments
3. Important understandings with contractor or his representative
4. Record of important conversations or verbal discussions relative to work
5. Any other data having bearing on any disputes which may arise

(b) Construction Note Books:

1. Materials received and used purchased by the contractor or owned by the city, date when contractor's materials arrived on the job and by whom furnished
2. Any other pertinent data of like nature

(c) Structure Field Book or Books:

1. All structure measurements including estimates where required; amount and kind of material placed; excavation and backfill quantities and other quantities not susceptible to later measurement.

(d) Construction Survey Note Book:

1. Construction surveys including bench marks and reference points and particularly points which may later be destroyed.

Sufficient reference points should be placed to obviate the necessity of extensive surveys to reproduce points.

Fred D. Pyle
Hydraulic Engineer

3-26-37
copy/p

April 6, 1936

From : Hydraulic Engineer
To : PWA Engineer Inspector KH-1
Subject : PWA Docket Calif. 1223-R Hodges Reservoir
Dam strengthening, general information

The City of San Diego is represented on the project by the Hydraulic Engineer, 524 F Street, San Diego, California.

Resident Engineer L. H. Hill represents the Hydraulic Engineer on the site of the project.

All field engineering will be done through the Resident Engineer; measurement and checking of quantities for partial payment will be made in the field office at Hodges Dam and referred for checking and final addition to the Hydraulic Engineer.

The Resident Engineer will have charge of field inspection, acceptance of materials and workmanship and installations, subject to the approval of the Hydraulic Engineer.

Tests of concrete and steel reinforcement will be made in the City of San Diego's testing laboratory.

Fred D. Pyle
Hydraulic Engineer

PB/p
cc-Resident Engineer

April 7, 1936

H-8

Mr. M. H. Golden
531 Bank of America Building
San Diego, California

Subject: PWA Docket Calif. 1223-R Hodges
Reservoir Dam Strengthening, records
to be furnished by contractor

Dear Sir:

In compliance with paragraph 9 on page 42 of the contract specifications for Hodges reservoir dam strengthening, please furnish this office in duplicate copies of invoices of all materials, tools and other expendable equipment and supplies, including copies of freight bills etc., purchased or required by the contractor for use in connection with the work. These invoices should show the source, date of delivery, cost and proof of payment. One copy of the invoice will be filed in this office and the other copy will be furnished by the City to the PWA Resident Engineer Inspector.

Under paragraph 10 on page 42 you are required to make a monthly report to the U.S. Department of Labor regarding your payroll and expenditures for materials. You should also furnish them with the names and addresses of all subcontractors on the work.

Under paragraph 1 Article 13 on page 48 you are required to furnish in triplicate to the City of San Diego certified copies of all factory and mill test reports. Please furnish three additional copies of these reports for the PWA Engineer-Inspector.

You are also required to notify the PWA with copy to this office, sufficiently in advance of the manufacture or production of materials to be supplied by you under the contract. The name of each of the manufacturers involved and the location at which the materials will be produced should also be furnished.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p

To be forwarded by the State Expediter
 To the Divisional Expediter Saturday of each week

Date: April 8, 1936

DOCKET NUMBER	LOCATION	PLANS AND SPECIFICATIONS		CONSTRUCTION DATES			REMARKS or REASONS FOR DELAY	
		Percent Complete	Date Approved by State	Work Advertised	Bids Opened	Contracts Awarded		Work Started
Calif. 1223-R	Hodges Dam	100	2-14-26	2-18-36	3-10-36	3-24-36	4-2-36	

255

Fred D. Pyle

April 30, 1936

Mr. Fred D. Pyle
524 F Street
San Diego, California

Subject: Hodges Dam Strengthening, PWA Docket
Calif. 1223-R, operating program

Dear Sir:

The operating methods proposed for above project are briefly outlined below. As the uncertainty of depth of footings makes a definitely timed schedule of operations impossible, we are merely attempting to outline the procedure.

The mixing plant will consist of a stationary $3/4$ yard mixer, installed under a two-compartment bin hopper with approximately 100 yard capacity. The Fenton Material Company, who are furnishing the aggregates, have assured us that the correct proportions of various sizes of coarse aggregates can be mixed at their plant without difficulty, and this will necessitate only two bins on the job-plant which will simplify the batching process and assure a uniform mix.

The aggregates will be delivered to the job by trucks and will be dumped directly in the storage hoppers.

The mixing plant will be located near the end of the spillway, and connected to the road by a wooden trestle. The mixer will discharge the concrete into a concrete pump, which will distribute the concrete through the usual pipeline to various points of deposit. However, it may be necessary at various points to use an elephant trunk or buggies for final deposit into the forms.

The forms used for the columns will be "Uniforms", while for the diagonals and struts we will use special built wood panels bolted to the buttresses.

For curing, we propose to spray a coat of "Pave Cure" immediately upon stripping of forms.

Trusting this meets with your approval, we are,

Very truly yours

M. H. Golden

S. F. Nielsen

SFN/a

3-26-37
copy/p

May 8, 1936

Mr. M. H. Golden, Contractor
531 Bank of America Building
San Diego, California

H-18

Subject: PWA Docket Calif. 1223-R Hodges Reservoir
Dam Strengthening, operating program

Dear Sir:

Confirming discussion with you on May 7, 1936 and in reply to your letter dated April 30, 1936, it is required that, provided hoppers for concrete aggregates are made, provision be made at the site of the work for separate bins to store the two coarse sizes of aggregate for Hodges reservoir dam strengthening so that the change in grading may be made if and when required.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p

August 10, 1936

Mr. Fred D. Pyle
Hydraulic Engineer
Water Department
The City of San Diego
San Diego, California

Dear Sir:

Progress

Your attention is directed to Construction Schedule No. 4 (P.W. I-97), Hodges Dam Strengthening, Project Calif. 1223-R dated July 31, 1936, which schedule shows time consumed fifty-two one-half (52.5) percent, physical completion only thirty-five (35) percent.

The lag of physical completion as compared with time consumed is such that, based upon past performance, the projected probable date of completion falls considerably beyond the contractual completion date, November 22, 1936. The 40-hour week, effective the 20th ult., has not materially speeded progress.

Please confer with the contractor, Mr. M. H. Golden, with the view of expediting progress. It is suggested that some additional concentration of labor on the erection of forms and preparations for concreting would be helpful in that a more constant and uniform pouring schedule could be effected.

Very truly yours

C. F. Graff
Resident Engineer
Inspector, PWA

3-26-37
copy/p

August 14, 1936

Mr. M. H. Golden, Contractor
531 Bank of America Building
San Diego, California

H-39

Subject: PWA Docket Calif. 1223-R
Hodges Reservoir Dam Strengthening
Progress

Dear Sir:

Enclosed is copy of letter dated August 10, 1936
from Mr. C. F. Graff, Resident Engineer Inspector, PWA,
directing attention to the progress of the work on
PWA Docket Calif. 1223-R Hodges Reservoir Dam Strengthening.

I shall appreciate a conference with you at a mutually
satisfactory time with a view to expediting the progress.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p
encl.

3-8-37
copy/p

September 23, 1936

Mr. M. H. Golden, Contractor
531 Bank of America Building
San Diego, California

H-46

Subject: PWA Docket Calif. 1223-R
Hodges Reservoir Dam
Strengthening, Signs

Dear Sir:

Please furnish 3' x 5' signs pertaining to PWA Docket Calif. 1223-R Hodges Reservoir Dam Strengthening as now required by PWA Order No. 154.

Prior to making up these signs please contact Resident Engineer Inspector C.F.Graff so that the signs will comply in all respects to PWA requirements.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p

3-8-37
copy/p

FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS

P.O.Box 322
East San Diego Station
Calif.

November 25, 1936

Inspection: PVC
Docket: Calif. 1223-R
Hodges Dam

Mr. Fred D. Pyle, Hydraulic Engineer
524 F Street
San Diego, Calif.

Dear Sir:

For your information and action I quote the following from Los Angeles Memo. No. 45 Revised, dated November 17, 1936.

"All projects which are under construction on which completion dates in contracts extend beyond December 15, 1936 should have Administration approval for such extension of time. Any approval for extension of time for completion of project beyond December 15, 1936 should be recorded as a Change Order on Form 84 Revised.

Therefore, if this condition applies to your docket, request the Owner to prepare a Change Order for the time from December 15, 1936 to completion date stated in the contract."

In making up this change order for extension of time beyond December 15, 1936 would suggest you refer to "Co-ordination Letter No. 94, October 13, 1936.

Very truly yours

P.V.Cooper
Resident Engineer Inspector

December 28, 1936

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

Subject: PWA Docket Calif. 1223-R Hodges Reservoir
Dam strengthening, completion and
acceptance of work

Gentlemen:

The work under contract with M.H. Golden for Hodges Reservoir Dam Strengthening, PWA Docket Calif. 1223-R Contract Document No. 297063 dated March 25, 1936, has been fully completed in compliance with the plans, drawings and specifications, except for date of completion, to the satisfaction of the Hydraulic Engineer.

Under the terms of the contract the work was to have been completed on or before November 22, 1936. After consideration of a joint application by the contractor and the city to the Public Works Administration, the date for completion of the work was extended by Resolution No. 65137 of the Council, dated November 10, 1936, to December 30, 1936. The work was completed on December 28, 1936.

RECOMMENDATION: It is recommended that the materials furnished and the work performed in the construction and completion of PWA Docket Calif. 1223-R Hodges Reservoir Dam Strengthening, by M. H. Golden, be officially accepted and paid for by the City of San Diego subject to approval of the Public Works Administration and to the provisions of Paragraph 51 of the contract specifications.

Respectfully

Fred D. Pyle
Hydraulic Engineer

PB/p

APPROVED:

R. W. Flack
City Manager

NOTICE OF COMPLETION AND ACCEPTANCE OF THE WORK PERFORMED AND MATERIALS FURNISHED BY M.H.GOLDEN UNDER HIS CONTRACT FOR THE CONSTRUCTION OF HODGES RESERVOIR DAM STRENGTHENING, WHICH SAID CONTRACT IS DATED MARCH 24, 1936, AND IS ON FILE IN THE OFFICE OF THE CITY CLERK OF THE CITY OF SAN DIEGO AS DOCUMENT NO. 297063, AND FURTHER IDENTIFIED AS PUBLIC WORKS ADMINISTRATION DOCKET NO. CALIF. 1223-R

TO WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN By The City of San Diego, Owner of the Hodges Dam, located on the San Dieguito River in the County of San Diego, State of California, that the work performed by M.H.Golden under his contract for the construction of Hodges Reservoir Dam Strengthening was completed to the satisfaction of the Engineer on December 28, 1936.

YOU ARE FURTHER NOTIFIED that the Council of The City of San Diego, on December 29, 1936, by resolution duly and regularly passed and adopted, officially accepted the work performed by M.H.Golden in the construction of Hodges Reservoir Dam Strengthening. A certified copy of the resolution of the Council accepting said work is attached hereto and made a part of this Notice the same as though fully set out herein.

R. W. Flack
City Manager of The City of San Diego
California

ATTEST:

Allen H. Wright
City Clerk

RESOLUTION NO. 65329

WHEREAS, a Public Works Administration project was approved and a contract for the construction of Hodges Reservoir Dam Strengthening let to M. H. Golden, under date of March 24, 1936, filed in the office of the City Clerk as Document No. 297063, and further identified as Public Works Administration Docket 1223-R; and

WHEREAS, the said contract has been performed and said Hodges Reservoir Dam Strengthening completed, in accordance with the plans, specifications and approved change orders, and to the satisfaction of the Council of The City of San Diego, and the same was actually completed on December 28, 1936; NOW, THEREFORE,

BE IT RESOLVED AND ORDERED that said Hodges Reservoir Dam Strengthening be, and the same is hereby accepted.

BE IT FURTHER RESOLVED, that the time between the contract completion date, to-wit: December 28, 1936, and the date of the adoption of this acceptance, be, and is hereby waived and no damages assessed; and that the City Manager of The City of San Diego be, and he is hereby authorized to sign a "Notice of Completion."

On motion of Councilman Wansley, seconded and carried, the above resolution was adopted.

I hereby certify the above to be a full, true and correct copy of Resolution No. 65329 of the Council of the City of San Diego, California, as adopted by said Council December 29th, 1936.

Allen H. Wright,
City Clerk

By Fred W. Sick
Deputy

FUNDS

ESTIMATES

PAYMENTS

FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS

HAROLD L. ICKES, ADMINISTRATOR
WASHINGTON

APPLICATION FOR GRANT

State

State File No.
(Not to be filled in by applicant)

The City of San Diego

..... (herein called the "Applicant"), hereby
makes application to the United States of America through the Federal Emergency Administration of Public
Works (herein called the "Government"), for a grant for the purpose of aiding in financing the construction of²

Hodges Reservoir Dam Strengthening

(herein called the "Project") the total cost of which is estimated to be ³\$ 120,000.00.....

In the event this application is approved and the Government offers to assist in financing the construc-
tion of the Project, the Applicant, if it accepts such offer, will provide funds in an amount which, together
with the grant, will, in the judgment of the Applicant and the Federal Emergency Administrator of Public
Works, be sufficient to construct the Project, such additional funds to be provided by the Applicant in an
amount and in a manner satisfactory to the Applicant and to the said Administrator.

It is expressly understood that if the Government makes the above-requested grant, the Applicant, in
accepting such grant proceeds, in expending the same, and in carrying out the construction of the Project,
will abide by all rules and regulations prescribed by the Government.

IN WITNESS WHEREOF, the Applicant has caused this application to be duly executed in its name, this

29 day of August, 1935

The City of San Diego¹

By /s/ R. W. Flack⁴

R.W.Flack
City Manager⁵

[SEAL]

¹ Insert correct corporate name of Applicant.
² Describe Project briefly.
³ Insert estimated cost of Project.
⁴ Signature of officer authorized to execute Application.
⁵ Title of officer executing Application.

FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS
Harold L. Ickes, Administrator
Washington

DATA SUPPORTING GRANT APPLICATION

State California

State File No. _____

1. Exact corporate name of applicant THE CITY OF SAN DIEGO
2. Attach general description, with drawings sufficient for a thorough understanding of the project and report of engineers or architect with pertinent design data, if available.

(a) The City of San Diego acquired the San Dieguito water system, including the Hodges reservoir dam, from the San Dieguito Water Company under the terms of a lease-option to purchase agreement dated October 5, 1925.

Hodges reservoir dam is a multiple arch concrete structure completed in 1918. The dam extends across the San Dieguito River, which at that point has a drainage area of about 303 square miles. The spillway crest of the dam is at elevation 315 U.S.G.S., or 115 feet above streambed. The top of the dam is at elevation 330. The reservoir capacity is 37,700 acre feet; flooded area 1317 acres. The crest length of the dam is 616 feet. Buttresses are spaced 24 feet center to center. The arches decrease in thickness from 2.5 feet at the base of the deepest sections to 1.0 feet at the top. The buttresses decrease in thickness from 4 feet 2 inches at the base of the deepest sections to 18 inches at the top. There is very little effective bracing between the buttresses, and the buttresses are not reinforced.

Cracks have appeared in each of the higher buttresses. The cracks generally extend diagonally downward and about at right angles from the lower middle third point of the spring line of the arches. The cracks have been carefully measured for several years. Evidence is conclusive that they are increasing in extent. The cracks reach their maximum widths during the winter months and their minimum widths during the late summer. There is a gradual increasing in the width of the cracks each season as compared with that of the preceding season.

The height and slenderness of the unreinforced buttresses and their cracked condition, together with their very meager bracing, as well as the location of the dam in a general region of known seismic activity, constrains to the conclusion that the structure is unsafe in the event of a major earthquake.

In the event of failure of Hodges reservoir dam, a reach of about 10 miles and an area of about 5,500 acres in the San Dieguito Valley between the dam and the Pacific Ocean is subject to destructive flood overflow. This area has a population of about 360. The improvements are valued at about \$870,000, not including a reach of 4,000 linear feet of United States Highway Route 101, between San Diego and Los Angeles, and about 4,000 linear feet of Atchison Topeka & Santa Fe main line railway between San Diego and Los Angeles, both of which would be materially injured, if not destroyed.

A new \$140,000 concrete bridge on the highway and a railway bridge, both across the San Dieguito River, probably would be materially injured, if not destroyed.

The failure of the dam would cut off the water supply of the Santa Fe Irrigation District, San Dieguito Irrigation District and Del Mar Water Light & Power Company, which supply a population of about 3,340, and about 4,500 acres of citrus orchards and crops.

The failure of the dam would also reduce the available water supply of the City of San Diego's population of about 170,000, including the U.S. Army and Navy forces, by three million gallons a day.

The State of California placed all questions affecting the safety of dams in California under the jurisdiction of the California State Engineer, effective August 14, 1929.

The safety and stability of Hodges dam has been carefully investigated and reviewed by the California State Engineer. A consulting board, consisting of B.A. Etcheverry, F.C. Herrmann, A. Kempkey and Henry D. Dewell, on March 11, 1929, reported to the State Engineer, in part, as follows:

"1. Lake Hodges dam is safe to carry the loads, excepting in the case of a major earthquake, provided that the spillway is improved to prevent overtopping."

"2. Earthquakes of major intensity occurred in 1812 and again in 1887. There is reason to believe that Lake Hodges dam will at some future time doubtless be subjected to similar earthquakes. To resist such earthquakes the dam must be reinforced by thorough bracing of the buttresses."

A second board of consulting engineer, George A. Elliott, Harry W. Dennis and Walter L. Huber, appointed by the State Engineer, also investigated Hodges dam and concurred in the findings of the previous board of consultants.

The spillway capacity was improved to the satisfaction of the State Engineer in 1930.

On August 15, 1931, the State Engineer, officially representing the California State Department of Public Works, ordered and directed the City of San Diego to strengthen the buttresses of Hodges reservoir dam. See Exhibit 11, attached.

Designs for increasing the stability of the buttresses and the safety of the Hodges reservoir dam against earthquakes, by the installation of a system of concrete reinforced bracing and steel ties between the buttresses and the installation of concrete protected steel rods along both sides of each buttress near the spring line of the arches, have been developed in the City of San Diego Hydraulic Engineer's office, in cooperation with the technical staff of the California State Engineer, and were approved by the State Engineer on November 17, 1934 as shown on Exhibit 9 hereto attached.

3. Estimate of cost of project:

a. Preliminary expenses absorbed by City	\$	-
b. Cost of land, rights-of-way, easements - none required		-
c. Construction cost: List of items of break- down, giving quantities and unit prices:		
1. Excavation Class 1, 2000 cubic yards @ \$10.00 per cubic yard	\$	2,000
2. Excavation Class 2, 80 cubic yards @ \$4.00 per cubic yard		200
3. Excavation Class 3, cutoff excava- tion in spillway, 100 cubic yards @ \$3.00 per cubic yard		300
4. Excavation Class 4 in spillway, 200 cubic yards @ \$2.00 per cubic yard		400
5. Concrete Class 1 in columns and struts, 2500 cubic yards @ \$20.00 per cubic yard		50,000
6. Concrete Class 2 in diagonal strengthening and top anchorage 950 cubic yards @ \$30.00 per cubic yard		28,500
7. Concrete Class 3 in footings, 150 cubic yards @ \$15.00 per cubic yard		2,250
8. Concrete Class 4 in spillway, 600 cubic yards at \$8.00 per cubic yard		4,800

9. Cement in place in the work 6500 barrels @ \$1.00 per barrel	\$ 6,500
10. Cleaning and placing reinforcing steel furnished by the City 210000 pounds @ \$.04 per pound	8,400
11. Reinforcing steel furnished by contractor in place in the work 375000 pounds @ \$.06 per pound	22,500
12. Steel tie bars in place including nuts and turnbuckles, 55000 pounds @ \$.10 per pound	5,500
13. Steel plates in place in the work 40600 pounds at \$.10 per pound	4,060
14. Drilling holes thru concrete 1700 feet @ \$3.00 per foot	5,100
15. Chipping concrete surface, 9300 square feet @ \$.35 per square foot	3,256
16. Chipping keyways, 1650 cubic feet @ \$1.00 per cubic foot	1,650
17. Grouting 575 drill holes @ \$2.00 each	1,150
18. Drilling anchor holes in spillway 500 feet @ \$1.47 per foot	735
19. Drilling anchor holes under footings of vertical columns, 1000 feet @ \$2.00 per foot	2,000
	<u>150,300</u>
Reinforcing steel to be furnished by City	4,200
Cement to be furnished by City	<u>13,000</u>

\$167,500

TOTAL CONSTRUCTION COST

d. Engineering, architectural, and other fees for technical service. The basis upon which this item is computed should be clearly indicated.

12,300

1 Chief Engineer (H.E.)	15%	6 months	375
1 Asst. Engineer	25%	6 months	375
1 Resident Engineer		6 months	1,800
1 Chief of Party		6 months	1,080
4 Inspectors		5 months	2,000
2 Chainmen		6 months	1,560
1 Draftsman		6 months	1,050

1 Engineering Clerk	6 months	920	
1 Secretary Steno.	6 months	840	
Consulting Service		400	
Transportation		500	
Engineering equipment		200	
Insurance		200	
		<u>12,300</u>	

(Cost of rent, light, heat are absorbed by City)

All expenses of designs and preliminary investigations have been absorbed by the City

e. Legal, administrative, and overhead costs. This item should be subdivided to indicate clearly the items to which the funds are applied and the basis upon which they have been computed. 200

f. Interest during construction - none

g. Miscellaneous costs in reasonable detail - none

Total miscellaneous charges

Total estimated cost of project \$ 180,000

h. Amount of funds and materials to be furnished by the applicant from sources other than the Government

Appropriated as per Exhibit 4			
(a) (b) (c)	\$	81,800	
Appropriated as per Exhibit 5		4,200	
Cement to be furnished by the City as per Exhibit 7		<u>13,000</u>	99,000

i. Amount of grant requested 81,000

4. Statement as to status of drawings and specifications with description of preliminary work done to date of application.

Complete except for changes in General conditions required by PWA from time to time.

5. Estimated Division of Allotments

	(1)	(2)	(3)	(4)
	Amount of Dollars	Percent of sub-total	Percent of total	Daily Average Number to be Employed
a. Labor:				
(1) Unskilled	23,000	26.9	13.0	60
(2) Intermediate	29,250	33.6	16.3	60
(3) Skilled	20,030	34.6	16.7	35
(4) Technical	<u>4,290</u>	<u>4.9</u>	2.4	5
(5) Sub-total	86,970	100.0		
b. Superintendence	3,000	-	1.7	4
c. Professional services	6,200		3.4	6
d. Other expenses on project:				
(1) Materials, supplies, and equipment	72,000	86.0	40.0	
(2) Contingent expense	11,830	14.0	6.5	
(3) Land, rights-of-way and purchase of existing facilities	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
(4) Sub-total other expense	83,820	100.0		
e. TOTAL	180,000		100.0	

f. Skilled labor to consist of following average daily number to be employed from various trades:

Number	Trade	Number	Trade
(1) 10	Carpenters	(8) 1	General Foreman
(2) 2	Concrete men	(9) 2	Mechanics
(3) 2	Compressor operators	(10) 5	Reinforcing steel men
(4) 1	Crane operator	(11) 22	Riggers
(5) 2	Drillers	(12) 1	Superintendent
(6) 1	Electrician	(13) 5	Other classes
(7) 1	Excavation foreman	(14) 35	Total

6. Estimated expenditure per man-year of employment based on prevailing wages and 130 hours per month \$ 1,690.00

7. Estimate total man-hours - 125,000

8. Estimated period of preparation before work at site can be started.

45 days after money is made available.

9. Estimated daily average number of employees each month during execution of project:

1.	2.	3.	4.	5.	6.
100	160	180	120	120	160

10. Estimated elapsed time from beginning work to completion - 6 months.

11. a. What part of labor on project would usually be handled by contract?
All, except supervision, inspection and administration. 100%

b. What part of labor on project would usually be day labor?
None except as stated in (a) 0%

12. a. If the project will compete with an existing facility, a complete description of the existing facility should be given, and should define its present physical condition.
Project will not compete with an existing facility.
It contemplates the repair of a dam only.

b. If the project will compete with an existing facility, the experience record of the existing facility for the past 8 years should be presented, if available, to show revenues, sales, or service from which revenues derive, classified as to type; and valued as to rates, and maintenance and operating expense.
Does not apply.

c. If the project will have a competing facility, the franchise, permit, or license under which the competing facility operates should be described.
Does not apply.

13. Statement as to method proposed to finance that portion of the cost of project not financed by the grant herein applied for.
City will provide cash on hand and materials on hand and available as follows:

Appropriated to Hodges Reservoir Dam Strengthening	\$81,800
Fund as per Exhibit (a) (b) (c) attached	
Reinforcing steel on hand as per Exhibit 5 attached.	4,200
Cement to be furnished by City as per Exhibit 7 attached	<u>13,000</u>
Total	\$99,000

14. Reference to Constitution, statutory, and charter authority empowering applicant to construct the project.

The City of San Diego was originally incorporated in 1850, under the laws of the State of California. Subsequent thereto,

and on March 16, 1929, the people of the City of San Diego adopted a freeholders' charter, which was approved by the legislature of the State of California; at the session of 1889 (Senate Joint Resolution No. 5, California Statutes, 1889). Subsequent thereto, and pursuant to the authority contained in Section Eight of Article Eleven of the Constitution of the State of California, the people of the City of San Diego adopted a new freeholders' charter, which was approved by the Legislature of the State of California at the session of 1931 (Senate Concurrent Resolution No. 24, California Statutes, 1931). The City at present is organized and existing under and by virtue of the charter last adopted; a copy of which is attached to this application as Exhibit 8.

The City of San Diego obtains authority to construct, own and operate Hodges Reservoir Dam from the following constitutional and charter provisions, to-wit:

Section 19 of Article XI of the Constitution of the State of California provides, in part, as follows:

"Any municipal corporation may establish and operate public works for supplying its inhabitants with light, water, power, heat, transportation, telephone service or other means of communication. Such works may be acquired by original construction or by the purchase of existing works, including their franchises, or both A municipal corporation may furnish such services to inhabitants outside its boundaries; provided, that it shall not furnish any service to the inhabitants of any other municipality owning or operating works supplying the same service to such inhabitants, without the consent of such other municipality, expressed by ordinance."

Article I, Section 1 of the City Charter, provides as follows:

"Section 1. INCORPORATION AND CORPORATE POWERS. The municipal corporation now existing and known as "The City of San Diego" shall continue to be a municipal corporation under the same name, with the boundaries as now established or as may hereafter be legally established. Such municipal corporation shall have perpetual succession, may use a corporate seal; may sue and defend in all courts and places, and in all matters and proceedings whatever; may own and acquire property within or without its boundaries for either governmental or proprietary, or any municipal purposes either by succession, annexation, purchase, device, lease, gift, or condemnation, and may sell, lease, convey, exchange, manage and dispose of the same as the interests of said City may require; receive bequests, donations and gifts of all kinds of

property within and without the City of San Diego in fee simple or in trust for charitable or other purposes, and do all acts necessary to carry out the purposes of such gifts; bequests and donations; may own and operate public utility systems, including the joint or sole operation and ownership of utilities for the purchase, development and supply of water and electrical power for the use of the City and its inhabitants and others; and generally shall have all municipal powers, functions, rights, privileges and immunities of every name and nature whatsoever now or hereafter authorized to be granted to municipal corporations by the Constitution and laws of the State of California."

It must be remembered that the City of San Diego heretofore, and under date of October 5, 1925, acquired its rights in what is known as the San Dieguito water system, including Hodges reservoir dam. Under the terms of the agreement then entered into the City of San Diego leased from the San Dieguito Water Company the entire water system, with an option to complete the purchase after a term of years, certain payments being made each year to apply on principal payments.

In connection with the execution of said contract, the City of San Diego submitted to the electors thereof the proposition of entering into the lease-option agreement. A certificate declaring the results of the San Dieguito Lease option election is attached hereto as Exhibit 2.

As supporting the authority of the City to engage in such an enterprise, you are further referred to:

Section 90, Article VII of the Charter of
The City of San Diego,

which provides, in part, as follows:

"(b) Whenever the Council shall determine that the public interest or necessity demands the acquisition, construction or completion of any municipal improvement for the development, conservation and furnishing of water, whether in the County of San Diego or elsewhere, the Council may contract bonded indebtedness for such improvement for the development, conservation and furnishing of water whenever authorized to do so by a vote of two-thirds of the electors voting at an election held for that purpose in the manner and note prescribed by the general laws of the State of California in force at the time of holding said election."

You are also referred to the provisions of the Charter of The City of San Diego in force at the time the purchase was made,
to-wit:

Section 13. Chapter II, Article VI,
which provides as follows:

"Section 13. Whenever the Common Council shall determine that the public interest or necessity demands the acquisition, construction, or completion of any municipal buildings, bridges, sewers, water works, water rights, reservoir sites, rights of way for pipes, aqueducts, flumes or other conduits, or any other property or appliances suitable or proper for supplying said city or its inhabitants with water, or other municipal improvements, the cost of which will be too great to be paid out of the ordinary annual income and revenue of said city, the said Common Council may contract bonded indebtedness for said purposes, or any of them, and the proceedings taken for incurring such indebtedness shall be in accordance with the mode and manner prescribed by the provisions of the general laws of the State of California, relative to incurring bonded indebtedness by municipalities, in force at the time such proceedings are taken. Said Common Council may also contract bonded indebtedness for any other purpose authorized by this charter or the general law of the State of California; provided, that the proceedings taken therefor shall be in accordance with the provisions of the general law in force at the time such proceedings are taken."

Further reference to authority of the City to enter into such an undertaking is made by citing the following decisions of the State of California:

State v. McCauley & Tevis, 15 Cal. 439;
McBean v. City of Fresno, 112 Cal. 159;
Smilie v. Fresno County, 112 Cal. 311;
Doland v. Clark, 143 Cal. 176;
In re Controversy between City and County
of San Francisco and the County of Alameda
on the one part and James F. Boyle as
Auditor etc., 191 Cal. 172;
Wykoff v. Force, 61 Cal. App. 246;
Posz v. Taylor, 61 Cal. App. 523;

The City of San Diego has general authority under the terms of its charter to construct any municipal improvement out of revenue on hand. In other words, if the cost of the project does not exceed the amount of money on hand, no necessity arises for submitting to the electors the proposition of incurring a debt.

Under the terms of California Statutes, 1929 (Page 1505-Act 1960, Deering's General Laws of the State of California,) being commonly referred to as the State Dam Act, it is necessary for the City of San Diego to make application to the Department

of Public Works of the State of California for approval of the plans, drawings and specifications for the reconstruction and strengthening of Hodges Dam. The completed plans, drawings and specifications have heretofore been filed by the Hydraulic Engineer for the City with the State Engineer of the State of California. Formal approval of such drawings, plans and specifications has been granted by the Department of Public Works on November 17, 1934.

There is now no litigation in process, pending or threatened either in state or federal courts, in any wise affecting the corporate existence of the City of San Diego, the authorization, execution, sale and delivery of any proposed obligations, levy and collection of taxes to pay the principal of and interest on any proposed obligations, the boundaries of the City of San Diego, or the incumbency of any of its officers.

There is now pending in the Superior Court of San Diego County a cause known as "Department of Public Works vs. The City of San Diego," which affects the construction of the project to the extent that the plaintiff therein, to-wit, the Department of Public Works, filed the action in an effort to compel The City of San Diego and the San Diego Water Supply Company to immediately initiate and complete the project herein described.

There is no other litigation of any kind or character now in process, pending or threatened in connection with the project.

15. Is project part of a larger plan or long-range program of development?

No.

16. Is there a local or regional planning board?

Not applicable.

17. Is applicant a part of a metropolitan district?

No.

C. L. BYERS, City Attorney
Attorney for the Applicant
The City of San Diego

R. W. FLACK
R. W. Flack
City Manager

By H. B. DANIEL
Assistant City Attorney.

FRED D. PYLE
Hydraulic Engineer of
The City of San Diego

AFFIDAVIT

R. W. Flack, being first duly sworn, says:

1. That the affiant has been authorized by the above-named applicant to furnish the information to the Federal Emergency Administration of Public Works to support the grant application of said applicant, dated August 29, 1935:

2. That the information supplied on the above form and in the attached exhibits and statements is true, correct, and complete to the best of his knowledge and belief.

R. W. FLACK

Sworn to before me this 29th day of August 1935.

E. H. BROOKS
Notary

(SEAL)

My commission expires
July 5th, 1937.

LIST OF EXHIBITS

- Exhibit No. 1 - Certified copy of resolution #63450 authorizing the City Manager to execute and file an application to the Federal Emergency Administration of Public Works for a grant to aid in financing of Hodges Reservoir Dam Strengthening and furnish information requested.
- Exhibit No. 2 - Certificate declaring results of San Dieguito lease option approval election.
- Exhibit No. 3 - Certified copy of resolution #63453 creating a Hodges Reservoir Dam Strengthening Fund.
- Exhibit No. 4 - (a) Certified copy of City Ordinance #727 appropriating to the Hodges Reservoir Dam Strengthening Fund \$20,000
- (b) Certified copy of City Ordinance #728 transferring to the Hodges Reservoir Dam Strengthening Fund \$50,000
- (c) Certified copy of City Ordinance #729 appropriating to the Hodges Reservoir Dam Strengthening Fund \$11,800
- Exhibit No. 5 - Hydraulic Engineer's certificate, availability and value of steel.
- Exhibit No. 6 - Certified copy of resolution #63451 accepting offer of San Diego Water Supply Company to furnish cement for Hodges Reservoir Dam Strengthening (offer attached).
- Exhibit No. 7 - Hydraulic Engineer's Certificate of cement requirements.
- Exhibit No. 8 - Certified copy of City Charter.
- Exhibit No. 9 - Drawings and description of work.
- Exhibit No. 10 - Certificate of City Clerk as to existing officials.
- Exhibit No. 11 - State Engineer's order to strengthen buttresses of Hodges Reservoir Dam.

EXHIBIT I Res. 63450

EXHIBIT 2

San Diego, Calif. Aug. 28, 1935

CERTIFICATE DECLARING RESULT OF SAN
DIEGUITO LEASE-OPTION ELECTION

I hereby certify that on August 6, 1925 the Common Council of The City of San Diego adopted Ordinance No. 10152 for the purpose of submitting to the electors of the City of San Diego on October 8, 1925 a proposition that the City of San Diego incur a bonded indebtedness of \$500,000.00 for the acquisition and option to purchase the San Dieguito Water System for \$3,750,000 on the terms set out under Document No. 177547 on file with the City Clerk of The City of San Diego; and that the election was held on October 8, 1925 and that by Resolution No. 35583 the vote was shown to be 11,690 for and 1,010 against and that said proposition was declared carried.

(SEAL)

ALLEN H. WRIGHT
City Clerk of The City of
San Diego, California.

EXHIBIT 3

Res. 63453

4a Ord. 727

4b Ord. 728

4c Ord. 729

10-28-36
copy/p

San Diego, California
August 29, 1935.

EXHIBIT 5

CERTIFICATE
AVAILABILITY AND VALUE OF STEEL

I hereby certify that there are available at the Hodges Reservoir Damsite for use in the Hodges Reservoir Dam Strengthening 210,000 pounds of reinforcing steel, and that the City of San Diego is the owner of said reinforcing steel, and that said reinforcing steel has a value in excess of \$4,200.00.

FRED D. PYLE

Fred D. Pyle
Hydraulic Engineer

Subscribed and sworn to
before me this 29th day of August 1935

(SEAL)

Marie D. Dunne
Notary Public
In and for the County of San Diego
State of California
My Commission expires July 17, 1937

Exhibit 6 Res. 63451.

10-28-36
copy/p

San Diego, California
August 29, 1935.

EXHIBIT 7
CERTIFICATE
CEMENT REQUIREMENT

I hereby certify that on August 12, 1935 the San Diego Water Supply Company, successors in interest to the San Dieguito Water Company, from whom the City of San Diego is purchasing the San Dieguito Water System, offered, as per attached exhibit, to furnish to the City of San Diego the amount of cement required for the Hodges Reservoir Dam Strengthening and that the amount of cement involved is 6,500 barrels, and has a value in excess of \$13,000.00.

FRED D. PYLE
Fred D. Pyle
Hydraulic Engineer

Subscribed and sworn to
before me this 29th day of August 1935.

Marie D. Dunne
Notary Public
In and for the County of San Diego
State of California.
My Commission expires July 17, 1937.

(SEAL)

EXHIBIT

8

Charter of City of San Diego

EXHIBIT 9

DESCRIPTION

HODGES RESERVOIR DAM STRENGTHENING

The strengthening work consists of the insertion between buttresses of heavily reinforced concrete frames as shown on the accompanying drawings. These frames are tied thru two adjacent buttresses by means of heavy steel bars and serve to brace these buttresses against a lateral force exerted against the structure due to an earthquake, the direction of which is parallel to the axis of the dam.

To prevent the complete separation of each of the buttresses into 2 parts at the existing crack, diagonal strengthening has been provided parallel and adjacent to the spring line of the arches as shown. This diagonal strengthening of heavily reinforced concrete, thoroughly anchored to the buttresses, is calculated to resist stresses coming upon the structure due to an earthquake in a downstream direction perpendicular to the axis of the dam.

To safeguard the spillway and protect it against further erosion the discharge apron is to be paved with concrete as shown on the plans.

Drawings

WD-211 464 4 sheets 411

EXHIBIT 10

C E R T I F I C A T E A S T O O F F I C I A L S

I HEREBY CERTIFY That on this 29th day of August, 1935,
O. L. BYERS is the duly elected, qualified and acting City
Attorney of the City of San Diego, California, and that on
said date ROBERT W. FLACK is the duly appointed, qualified
and acting City Manager of said City, and that on said date
FRED D. PYLE is the duly appointed, qualified and acting
Hydraulic Engineer of said City, and that on said date
ALLEN H. WRIGHT is the duly appointed, qualified and acting
City Clerk of said City.

Dated August 29, 1935

ALLEN H. WRIGHT
City Clerk of the City of
San Diego, California

(SEAL)

EXHIBIT 11.

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
Division of Water Resources
401 Public Works Building
Sacramento

Order Directing Certain Work to be Done to Render
Dam Safe and Fixing Time for Completion Thereof

Application No. 8-3

Name of Dam - Lake Hodges

Stream - San Dieguito River

Legal Subdivision - Section 18, T. 13 S., R. 2 W., SBB & M.

County - San Diego

To: City of San Diego, San Diego, California.

WHEREAS, the application of City of San Diego was filed with the State Engineer on January 24, 1930 for approval of the above dam; that an examination of said dam and the works appurtenant thereto has been made by the State Engineer; that the State Engineer has found that certain work in and about said dam or works appurtenant thereto is necessary to render said dam safe and to protect lives and property by reason of the use thereof;

NOW, THEREFORE, you are hereby ordered and directed to perform the following work:

Strengthen the buttresses of said dam.

The above mentioned work shall be completed on or before December 31, 1931, and in order to insure such completion on or before said date said work shall be commenced on or before October 15, 1931.

Applications for approval of such work must be made in accordance with the law governing the supervision of dams.

Witness my hand the seal of the Department of Public Works of the State of California, this 15th day of August 1931

(Signed) Edward Hyatt
EDWARD HYATT, STATE ENGINEER

3-9-37
copy/p

August 19, 1935

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

Subject: Hodges Reservoir Dam strengthening
PWA Application

Gentlemen:

In order to obtain an allocation of a 45% grant from the Federal Government for strengthening Hodges reservoir dam, application to the Public Works Administration should be expedited. The estimated cost of the work and the resources of the City available or that may be made available are as follows:

Estimated Cost	Contract	\$150,300
	Steel to be furnished by City	4,200
	Cement to be furnished by City	13,000
	Legal, engineering, inspection, etc.	12,500
	Total	<u>180,000</u>
45% Grant to be provided by PWA		81,000
55% to be provided by City of San Diego		99,000

Resources of City of San Diego available for this work:

	Budget appropriation	50,000
	Special fund, Resolution No. 60947	20,000
	Reinforcing steel on hand at Hodges	4,200
	Cement (San Diego Water Supply Co. see copy of letter attached)	13,000
	Appropriate from unappropriated balance fund	11,800
	Total	<u>99,000</u>

At a conference in Los Angeles on August 16, 1935 with PWA officials the cost of the work and the City's resources were discussed, and they advised the filing of an application at the earliest practical date.

RECOMMENDATION: It is respectfully recommended that the City Manager be authorized to execute on behalf of the City and file an application for 45% grant with the PWA for \$81,000 for strengthening Hodges reservoir dam; and

That \$20,000 now in the special fund set up on October 30, 1933 for repayment of the Government under Resolution No. 60947 be made available for strengthening Hodges reservoir dam; and

That \$11,800 be appropriated from the unappropriated balance fund to strengthen Hodges reservoir dam; and

That the City Attorney be authorized to prepare and submit a form of agreement between the City and the San Diego Water Supply Company for the cement required for strengthening Hodges reservoir dam and for cash or an annuity in accordance with offer of the San Diego Water Supply Company dated August 12, 1935, to take the place of the lapsed agreement dated October 16, 1933.

Very respectfully,

Fred D. Pyle,
Hydraulic Engineer

FDP/f
APPROVED:

R.W. Flack,
City Manager

3-9-37
copy/p

POSTAL TELEGRAPH

Oct 14, 1935 4:07 pm

FRED D PYLE, HYDRAULIC ENGINEER
CITY OF SANDIEGO 524 F ST SANDIEGO CALIF

REVISED HODGES SPECIFICATIONS SATISFACTORY STOP PLANS AND SPECIFICATIONS APPROVED BY DEPARTMENT NOVEMBER SEVENTEENTH NINETEEN THIRTY FOUR SO THAT ALL NECESSARY APPROVAL CLEAR UNDER STATE LAW STOP IMPRACTICAL TO STAMP EACH SHEET OF SPECIFICATIONS AND UNNECESSARY AS APPROVAL GIVEN FULFILLS LEGAL REQUIREMENTS STOP THIS PROCEDURE SATISFACTORY TO PWA HERETOFORE AND IF ANYTHING FURTHER DESIRED BY THEM ADVISE AND I SHALL GET IN TOUCH WITH PWA DIRECTLY KINDLY WIRE IMMEDIATELY COLLECT WHETHER COPIES OF SPECIFICATIONS FOR PWA ARE TO BE SENT BY US DIRECTLY TO MR WILDER PWA ENGINEER OR RETURNED TO YOU FOR SUBMISSION TO PWA

EDWARD HYATT STATE ENGINEER

October 16, 1935

Mr. A.D.Wilder
Acting State Director PWA
805 Washington Building
Los Angeles, California

Subject: PWA Docket 1223(Cal.) State approval of specifications

Dear Sir:

Transmitted herewith is copy of telegram dated October 14, 1935, received from the California State Engineer, Edward Hyatt, indicating that the Hodges reservoir dam specifications submitted are satisfactory and were approved by the State Engineer on November 17, 1934. The signature of the State Engineer appears on the drawings for work within his jurisdiction and no signature on the specifications is given by the State Engineer.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/F

3-9-37
copy/p

January 31, 1936

Fred D. Pyle
Hydraulic Engineer
524 F Street
San Diego, California

Docket Calif. 1223R
Hodges Dam

Dear Sir:

This will confirm the essential portions of a conference had this date between yourself and Mr. Beermann, representing the City of San Diego in the matter of Hodges Dam, and Engineer Schruth and Attorney Hanley of this office.

It is the desire of the City of San Diego to include certain cement, title to which would be acquired by agreement through the San Diego Water Supply Company, title holder of the dam, and certain steel owned by the City of San Diego in the construction of the project and also in computing the grant base. Because of the importance of the question, our legal section has obtained a series of rulings from the central office legal division. At least two of these have direct bearing upon the acquisition and use of said cement and steel. Accordingly, I shall quote from an opinion of E.H.Foley Jr., Director, Legal Division Public Works Administration, rendered under date of November 26, 1935, the following statement is found, "However, all materials of an estimated cost of \$1,000 or more must be purchased after public advertisement." Under this statement, and following PWA regulations, the agreement to purchase the cement heretofore referred to would not be a compliance with the Government rules. Again in an opinion rendered by Samuel Taylor, Counsel for California, and approved by Mr. Foley, the following statement is found - "I have ruled that the cost of materials owned by applicants at the time the application was filed could not be included in the grant base". And again, in Mr. Taylor's opinion, we find - "apart from excluding such materials from the grant base, I have ruled that we have no objection to their use on the project".

From the foregoing it would appear that neither of the materials in question can be included in the project for the purpose of computing the grant base, although if the quality of the materials meet specifications, the same could be included in the construction of the work.

A. D. WILDER, ACTING STATE DIRECTOR(Calif.)

By Dwight W. Stephenson
Assistant

For the Administrator

RLH:em

3-9-37
copy/p

February 4, 1936

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

Subject: San Dieguito River Project, Hodges
Reservoir Dam strengthening, materials

Gentlemen:

The application filed with the PWA on August 30, 1935 for a grant of \$81,000, being 45% of the estimated total cost of \$180,000 for undertaking the work of strengthening Hodges reservoir dam, was approved by PWA on December 2, 1935 and a grant allotment of \$81,000 made, which was accepted by the City on December 31, 1935.

It was stated in the application that the City would finance its portion of the cost by providing \$81,800 cash, steel on hand to the extent of \$4,200 and cement to be obtained from the San Diego Water Supply Company to the extent of \$13,000, making a total of \$99,000.

Under date of January 31, 1936 the PWA advised, copy of letter attached hereto, that while materials now owned by the City could be used in the work their value could not be included in the grant base, and that the agreement to purchase the cement without advertising for bids would not be in compliance with government rules.

Provided the contractor is required to furnish all cement used and to place a portion of the steel belonging to the City, the estimated total cost of the work of \$180,000 will not be changed, but it will be necessary for the City to provide additional funds up to about \$17,200.

A considerable amount of money may be paid by the San Diego Water Supply Company to the City as the work progresses in accordance with their agreement.

RECOMMENDATION: It is respectfully recommended that the Hydraulic Engineer be authorized to include provisions in the specifications for the strengthening of Hodges Reservoir Dam requiring the contractor to furnish all cement to be used and to place such steel owned by the City as may be directed, and that additional funds in the amount of \$17,200 be made available for the work.

Respectfully

Fred D. Pyle
Hydraulic Engineer

APPROVED:

R.W. Flack
City Manager

FDP/p
encl.

3-9-37
copy/p

Mr. Fred D. Pyle, Hydraulic Engineer
City of San Diego Water Department
524 F Street
San Diego, California

February 14, 1936

Calif. 1223 R
City of San Diego
Hodges Dam

Dear Sir:

This will acknowledge receipt of the following documents relative to the above designated project:

- 3 Sets of Plans
- 3 Sets of Specifications
- 3 Sets of Contract Documents

These documents have been examined by this office and we hereby approve them as to form. We are returning to you herewith one set of plans, specifications and contract documents, showing thereon the approval of this office. You are authorized to proceed to advertise for bids in conformity with the procedure outlined in State Engineer's Bulletin "A", with particular reference at this time to Sections III and IV thereof.

We especially wish to call to your attention that the contract documents and specifications contain a provision whereby the City of San Diego will supply a certain amount of material to the contractor. The cost of material so furnished and not purchased in accordance with PWA Regulations, will be eliminated from the grant base when so audited by our auditing division.

Our records show that of the total funds available for the entire project as defined in your application \$167,700 has been allotted to cover the award of contract for work contemplated by the plans and specifications on which this letter authorizes you to advertise for bids, \$12,000 has been allotted to cover the cost of field supervision and inspection, field engineering, and cost of such material tests as are to be paid directly by the owner or applicant, and \$300 has been allotted to cover possible extras and contingencies on this specific item of work. It is understood that when bids are opened, award must, if possible, be made to that lowest combination of main bid and alternates, if any, as will bring the total amount of award nearest to the amount above allotted for the contract. That is, if alternative bids have been asked for on different types and character of construction or for additions to or deductions from the amount of work to be done, such alternates must be selected as will afford the most work and the best type of construction possible to obtain within the above allotted sum.

Very truly yours

A.D. WILDER, ACTING STATE DIRECTOR (Calif.)

By Dwight W. Stephenson, Assistant

For the Administrator

CWS:NB

3-19-36

From : Hydraulic Engineer
To : Chief Clerk-Accountant
Subject : PWA work, requests for requisitions

In order to prevent difficulties in connection with the Public Works Administration on projects (PWA Dockets 5575 and Calif. 1223-R) involving federal funds, it is deemed advisable to have all requisitions pertaining to or charges against these projects written by your office, but only in compliance with requests therefor issued by this office.

No charges of any kind, including payrolls, should therefore be made except on "request for requisition." All such requests for requisition will be stamped with their proper PWA docket numbers. The requests for requisition should be kept on file for reference and inspection and a monthly summary, in duplicate, with corresponding requisition numbers should be furnished this office.

Fred D. Pyle
Hydraulic Engineer

APPROVED:

City Manager

PB/p

March 21, 1936

M E M O R A N D U M

Subject: Hodges Reservoir Dam Strengthening,
PWA Docket Calif. 1223-R, accounting
procedure

A conference was held March 19, 1936 in the office of the Hydraulic Engineer in connection with accounting procedure and requirements of PWA for the City's project PWA Docket Calif. 1223-R. Present were PWA Division Auditor Noah W. Allaman and Resident Engineer Inspector J.J. Kaspar, City's Chief Clerk-Accountant Water Department F. M. Stanley, Deputy City Auditor J.W.C. Barber, City Treasurer R.C. Lindsay, Resident Engineer J.W. Williams, Assistant Engineer P. Beermann and Hydraulic Engineer Fred D. Pyle.

In connection with Hodges, the grant from the government and the \$99,000 set aside by the City should all go into a single bank account. As far as the PWA was concerned the Water Department cost accounts could be kept in the regular manner but, in order to provide the necessary data required by PWA it would have to be worked up and put into separate account headings by this office according to forms furnished to the City; that all requisitions, paid vouchers, etc. should be made available for checking by PWA auditors whenever required.

Mr. Kaspar stated that on small work orders or change orders a single request could be made at the end of the job thereby eliminating much detail work.

In making charges to the City's funds on this project all charges, irrespective of whether the grant is applicable or not, should be made to the cost account. Requisitions on the Government for grant should include only items covered under the grant acceptance contract but such items in the final computation for grant base would be subject to review by Washington.

Mr. Allaman stated that all charges on which the cost could be definitely ascertained would be allowed by Washington if proper but that charges such as arbitrary monthly rates for use of City-owned automobiles, no matter how reasonable, would be most difficult to get thru. Items such as State Compensation Insurance should be charged on the basis of adjusted rates determined by the State Compensation people.

A schedule for grant requisitions was made out.

Fred D. Pyle
Hydraulic Engineer

FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS

DETAILED ESTIMATE

Sheet No. 1 of 1 Sheets

State California

Docket No. Calif. 1223-R

Project No. _____ Type of project Hodges Reservoir Dam Strengthening Location 30 miles northerly from San Diego

Job No. _____ Contract No. _____ Total contract price, \$ 130,612.50 vicinity Escondido, California

Borrower's name and address City of San Diego, California Total estimated cost, \$ 180,000.00

Contractor's name and address M.H. Golden, 531 Bank of America Building, San Diego, California

ITEM No.	DESCRIPTION OF ITEM	UNITS OR LUMP SUM	ESTIMATED				TOTAL COST DOLLARS
			NUMBER OF UNITS	LABOR COST DOLLARS	MATERIAL COST DOLLARS	OTHER COSTS DOLLARS	
SUBTOTALS BROUGHT FORWARD,							
1	Excavation Class 1	Cu.Yd.	300	1,125.00	-	480.00	1,605.00
2	Excavation Class 2	"	50	250.00	-	17.50	267.50
3	Excavation Class 3	"	100	280.00	-	120.00	400.00
4	Excavation Class 4	"	200	500.00	-	260.00	760.00
5	Concrete Class 1	"	2,500	16,850.00	16,250.00	12,400.00	45,500.00
6	Concrete Class 2	"	950	6,600.00	6,800.00	6,740.00	20,140.00
7	Concrete Class 3	"	150	462.00	680.00	808.00	1,950.00
8	Concrete Class 4	"	600	1,350.00	2,380.00	650.00	4,380.00
9	Cement in place	Bbl	6,500	325.00	16,300.00	1,965.00	18,590.00
10	Clean & place rein.steel	Lb	80,000	1,000.00	-	200.00	1,200.00
11	Furnish & place rein.steel	"	550,000	5,130.00	13,500.00	3,370.00	22,000.00
12	Steel tie rods in place	"	55,000	525.00	2,900.00	425.00	3,850.00
13	Steel plates	"	40,600	435.00	1,250.00	345.00	2,030.00
14	Drill holes	Feet	1,700	920.00	-	610.00	1,530.00
15	Chipping concrete surface	Sq.Ft.	9,300	1,000.00	-	1,325.00	2,325.00
16	Chipping keyways	Cu.Ft.	1,650	1,500.00	-	1,305.00	2,805.00
17	Grouting holes	Pcs.	575	160.00	60.00	125.00	345.00
18	Drill holes in spillway	Feet	500	150.00	-	125.00	275.00
19	Drill holes under footings	"	1,000	335.00	-	325.00	660.00

DETAILED ESTIMATE

Sheet No. 1 of 1 Sheets
State California

Docket No. Calif. 1223-R

Project No. _____ Type of project Hodges Reservoir Dam Strengthening Location 30 miles northerly from San Diego vicinity Escondido, California

Job No. _____ Contract No. _____ Total contract price, \$ 130,612.50 Total estimated cost, \$ 180,000.00

Borrower's name and address City of San Diego, California

Contractor's name and address M.H. Golden, 531 Bank of America Building, San Diego, California

ITEM No.	DESCRIPTION OF ITEM	UNITS OR LUMP SUM	ESTIMATED				TOTAL COST DOLLARS	
			NUMBER OF UNITS	LABOR COST DOLLARS	MATERIAL COST DOLLARS	OTHER COSTS DOLLARS		
SUBTOTALS CARRIED FORWARD, TOTALS,					38,897.00	60,120.00	31,595.50	130,612.50

1298

This estimate prepared by M.H. Golden by S.F. Nielson, Title Const. Engr., Date March 24, 1936
 Checked by P. Beermann, Title Asst. Engr. City of San Diego, Date March 24, 1936
 Approved by Fred D. Pyle, Title Hyd. Engr. City of San Diego, Date March 24, 1936

CONFIDENTIAL
(Not for public inspection)

APPROVED: _____, Date _____
State Engineer, P.W.A.

Appropriation THE UNITED STATES, Dr., To The City of San Diego Address City Hall, San Diego, California

PAID BY (For use of Paying Officer)

Project Hodges Reservoir Dam Strengthening, Calif. 1223-R Project Symbol No. E.R. 42.133

Offer accepted December 31, 1935 Plans, specifications, and estimates approved February 14, 1936

Requisition for* 1st and 2nd advance payment on account of the grant, being 25% of the estimated cost of the project, in accordance with certificate of purpose (P. W. A. Form No. 168) attached hereto, as follows:

Table with 6 columns: Total estimated cost of project, Loan, Grant, 25% of total cost, Previous payments, Amount of this payment. Values: \$180,000.00, None, \$81,000.00, \$45,000.00, None, \$45,000.00

Approved: State Director.

I certify that the above is a true statement. (Payee) The City of San Diego (Per) R. W. Flack (Title) City Manager

(Additional statements by Department, Bureau, or Establishment, if deemed necessary)

(Accounting classification)

(Payee will NOT use this space)

Differences Account verified; correct for \$ (Signature or initials)

ASCS

MEMORANDUM

Paid by check No., dated, 19...., for \$..... {On Treasurer of the United States in favor of the payee named above.

*First, Second, Third, or Fourth. NOTE.—Final Requisition to be made on Form 21.

Penalty for False Certification.—Section 35 of the Criminal Code, as amended, provides a penalty of not more than \$10,000 or imprisonment of not more than 10 years, or both, for knowingly and willfully making or causing to be made "any false or fraudulent statements . . . or use or cause to be made or used any false . . . account, claim, certificate, affidavit, or deposition, knowing the same to contain any fraudulent or fictitious statement . . ." relating to any matter within the jurisdiction of any governmental department or agency.

CERTIFICATE OF PURPOSES AND STATEMENT OF PROJECT COSTS

Name of applicant The City of San Diego Requisition No. 1 & 2 (Loan Grant)
 Address City Hall, San Diego, California Docket No. Calif. 1223-R (APPLICANT DO NOT USE)
 Type of project Dam Strengthening Date May 7, 1936 O. P. No. 42.133
 (See reverse for instructions pertaining to entries in columns shown below)

The following is the status of the above project as of the dates indicated. The funds requisitioned on the accompanying form, P. W. C. A. 21 C (21-B, 21-C, or 22) will be expended for the purposes shown in column 4, subject to changes approved by the Federal Emergency Administration of Public Works.

CLASSIFICATION (1)	LATEST APPROVED ESTIMATE (2)	PREVIOUS P. W. A. GRANT-LOAN REQUISITIONS OR PAYMENTS (3)	THIS REQUISITION (4)	COSTS INCURRED AS OF (5)	AMOUNT DISBURSED AS OF (6)
1. PRELIMINARY EXPENSES	absorbed by applicant				
TOTALS					
2. LANDS, RIGHTS-OF-WAY, AND EASEMENTS	None				
3. CONSTRUCTION	130,612.50	49,612.50	45,000.00	36,000.00	
4. ENGINEERING, ETC.:	36,887.50	36,887.50			
Engineering Fees					
Architectural Fees	12,300.00	12,300.00			989.15
Applicant's Forces					
TOTALS					
5. LEGAL, ADMIN., ETC.:					
Legal Fees					
Legal Costs					
Admin. and Overhead	200.00	200.00			
TOTALS					
6. INTEREST					
7. MISCELLANEOUS					
GRAND TOTALS	180,000.00	99,000.00	45,000.00	36,000.00	989.15

FUNDS RECEIVED AND DISBURSED

	APPLICANT	P. W. A. LOAN	P. W. A. GRANT	TOTAL
Funds required and allotted				
Funds deposited and source	99,000.00			99,000.00
Funds disbursed, per column 6, above	989.15			989.15
Balance in Construction Account—Applicant's books	98,010.85			98,010.85
Total outstanding checks	None			None
Balance in Construction Account—Depository's books	98,010.85			98,010.85

CERTIFICATE CONCERNING FUNDS, ENT OF 1
NO-LITIGATION

I, Dayton L. Ault

....., hereby certify that I am the duly appointed
and acting Attorney for The City of San Diego
(Grantee)....., that the said

The City of San Diego
(Grantee)

..... has taken proceedings appropriate to obtain
funds which together with the amount to be represented by the grant may be used lawfully to pay in full
the cost of constructing and equipping the project (P. W. A. Docket No. Calif. 1223-R.....), including the
acquisition of any lands, easements, franchises, and rights-of-way necessary to the completion and opera-
tion of said project.

I FURTHER CERTIFY that all necessary authorizations, permits, licenses, certificates, and other
approvals of Federal, State, county, and municipal authorities for the construction of the project
have been obtained.

I FURTHER CERTIFY that no litigation of any nature is now pending or threatened (either in State or
Federal courts) to restrain or enjoin the construction or operation of the project, or the financing of the
construction of the project or in any manner questioning the authority of the City of San Diego
(Grantee)
..... to construct and operate the project or to finance such
construction.

IN WITNESS WHEREOF, I have hereunto set my hand this 7th day of May....., 1936

ATTEST:

(SEAL) ALLEN H. WRIGHT
City Clerk
By FRED W. SICK
Deputy

Dayton L. Ault
.....
Attorney.

NOTE.—The above form has been prepared by the P. W. A. It must be executed by a
duly authorized attorney having knowledge of the facts and be adapted to the circumstances of
the particular case. It is not essential that the grantee use this form if the form the grantee
uses complies substantially with the above.

PENALTY FOR FALSE CERTIFICATION

Section 35 of the Criminal Code, as amended, provides a penalty of not more than \$10,000
or imprisonment of not more than 10 years, or both, for knowingly and willfully making or
causing to be made "any false or fraudulent statements * * * or use or cause to be
made or used any false * * * account, claim, certificate, affidavit, or deposition, knowing
the same to contain any fraudulent or fictitious statement * * *" relating to any matter
within the jurisdiction of any Governmental department or agency.

3-8-37
copy/p

May 6, 1936

Mr. Fred D. Pyle, Hydraulic Engineer
City of San Diego
524 F Street
San Diego, California

Dear Mr. Pyle:

We advise that we will accept deposits by the City of San Diego, and will at all times keep such monies in a separate account designated "Hodges Reservoir Dam Strengthening Fund".

This bank is a member of the Federal Reserve System, and of the Federal Deposit Insurance Corporation.

Yours very truly

W. J. Fogarty
Assistant Cashier

DC

9-14-36

Hydraulic Engineer

City Auditor

PWA Docket Calif. 1223-R Hodges Reservoir Dam Strengthening
Funds

In connection with Hodges reservoir dam strengthening application for 45 per cent grant was made to the Public Works Administration on August 29, 1935, total estimated cost \$180,000, the City of San Diego to furnish \$99,000 and the grant from the United States \$81,000.

Funds for the City's portion were provided as follows:

Ordinance	727	\$20,000
"	728	50,000
"	729	11,800
"	827	<u>17,200</u>
Total		99,000

The rules and regulations of the PWA permit the City to apply for 25 percent of the total estimated cost, after the contract has been awarded, and application for \$45,000, being 25 percent of the estimated cost, was made on May 7, 1936 and the check was subsequently received by the City.

When 70 percent of the work is completed the City may make application for an additional 10 percent of the then estimated cost of the project, which will be about October 1, 1936. The estimated cost of the project at the present time will be about \$150,000.

As soon as the project is completed the City may make application for such amount as will in the aggregate amount to 45 percent of the total cost when completed.

Under the rules and regulations of the PWA it is also required that the grant money and the funds allocated by the City for the project be deposited in a single bank account and it is understood that this has been done.

The completion of the work under the contract is set for November 22, 1936.

Fred D. Pyle
Hydraulic Engineer

PB/p

September 22, 1936

Mr. P. J. Munch, Project Auditor
Public Works Administration
1108 Washington Building
Los Angeles, California

Subject: PWA Docket Calif. 1223-R Hodges Reservoir
Dam Strengthening, revised estimate

Dear Sir:

In connection with intermediate grant requisition No. 3 for PWA Docket Calif. 1223-R Hodges Reservoir Dam Strengthening, a revised estimate of cost has been made as follows:

Preliminary expense	\$ 2.71
Contract	130,612.50
Contingencies	5,000.00
Testing	500.00
Field office construction - labor	103.75
materials	76.39
Engineering	12,000.00
Legal expense	300.00
Miscellaneous	<u>200.00</u>
Total	\$ 148,795.35

The item of \$2.71 for preliminary expense was incurred in connection with traveling to Los Angeles and contacting the office of the State Director pertaining to the above project.

The item of \$130,612.50 is the contract total based on the unit prices bid and the quantities stated in the schedule.

The item of \$5,000.00 is provided for additional excavation, concrete and steel and change in other items due principally to the fact that it was necessary to excavate deeper for the footings of the various strengthening members and to some additional work necessary on account of removing concrete and doing miscellaneous work. The exact detail changes will be listed at the end of the job under change order as required by PWA but until that time the exact quantities cannot now be determined.

The item of \$500.00 for testing includes the work done by the City's testing laboratory in checking up on the materials used in the work.

Mr. P. J. Munch -2

9/22/36

The items for the construction of field office, amounting to \$103.75 for labor and \$76.39 for materials, has actually been expended for such purpose.

The \$12,000.00 item for engineering is arrived at as follows:

1 Chief Engineer 15%	8 months	\$500.00
1 Asst. Engineer 25%	" "	450.00
1 Resident Engineer	" "	1,448.00
3 Inspectors	" "	4,200.00
1 Chainman		828.00
1 Draftsman	6 "	1,050.00
1 Engineering Clerk	8 "	1,184.00
1 Secy. Steno.	8 "	1,040.00
Consulting service		400.00
Transportation		500.00
Engineering equipment		200.00
Insurance		200.00

Total \$12,000.00

The item of \$300.00 for legal expense has been estimated as closely as can now be ascertained.

The miscellaneous item of \$200.00 is used for odds and ends not included in the other figures above.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p

AND INTERMEDIATE GRANTS

FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS

U. S. Voucher No. _____
Contract No. 3
Requisition No. Calif. 1223-R
Docket No. _____
September 23, 1936
(Date)

PAID BY

(For use of Paying Officer)

Appropriation _____
THE UNITED STATES, Dr., _____ Hydraulic
To The City of San Diego, c/o Fred D. Pyle, Engineer
Address 524 F Street, San Diego

Project Hodges Reservoir Dam Strengthening Project Symbol No. 42.133

Offer accepted December 31, 1935 Plans, specifications, and estimates approved February 14, 1936

Requisition for* 3rd advance payment on account of the grant, being 10 % of the estimated cost of the project, in accordance with certificate of purpose (P. W. A. Form No. 168) attached hereto, as follows:

Total estimated cost of project	Loan	Grant	<u>35</u> % of total cost	Previous payments	Amount of this payment
\$ <u>148,795.35</u>	\$ <u>None</u>	\$ <u>66,957.91</u>	<u>52,078.37</u>	\$ <u>45,000.00</u>	\$ <u>7,078.37</u>

Approved: _____ I certify that the above is a true statement.
 _____ (Payee) The City of San Diego
 State Director. (Per) R.W.Flack (Title) City Manager

(Additional statements by Department, Bureau, or Establishment, if deemed necessary)	(Accounting classification)	(Payee will NOT use this space)	
		Differences _____	
		Account verified; correct for _____ \$ _____	
		(Signature or initials) _____	

MEMORANDUM

Paid by check No. _____, dated _____, 19____, for \$ _____ {On Treasurer of the United States in favor of the payee named above.

*First, Second, Third, or Fourth.
 NOTE.—Final Requisition to be made on Form 21.
 Penalty for False Certification.—Section 35 of the Criminal Code, as amended, provides a penalty of not more than \$10,000 or imprisonment of not more than 10 years, or both, for knowingly and willfully making or causing to be made "any false or fraudulent statements . . . or use or cause to be made or used any false . . . account, claim, certificate, affidavit, or deposition, knowing the same to contain any fraudulent or fictitious statement . . ." relating to any matter within the jurisdiction of any governmental department or agency.

70% financially completed
 October 5, 1936
 Name of applicant: The City of San Diego
 Address: City Hall, San Diego, California
 Type of project: Rain Strengthening Date: October 9, 1936
 Requisition No. 3
 Docket No. Call 1223-R
 Contract No. _____

The following is the status of the above project as of the dates indicated. The funds requisitioned on the accompanying form, P. W. C. A. 21-B will be expended for the purposes shown in column 4, subject to changes approved by the Federal Emergency Administration of Public Works.

CLASSIFICATION (1)	LATEST APPROVED ESTIMATE (2)	PREVIOUS P. W. A. GRANT-LOAN REQUISITIONS OR PAYMENTS (3)	THIS REQUISITION (4)	COSTS INCURRED AS OF (5)	AMOUNT DISBURSED AS OF (6)
1. PRELIMINARY EXPENSES	2.71			2.71	2.71
TOTALS	2.71			2.71	2.71
2. LANDS, RIGHTS-OF-WAY, AND EASEMENTS					
3. CONSTRUCTION	130,612.50	45,000.00	7,078.37	67,770.03	34,673.35
4. ENGINEERING, ETC.:					
Engineering Fees					
Architectural Fees					
Applicant's Forces	12,000.00			5,339.91	5,339.91
TOTALS	12,000.00			5,339.91	5,339.91
5. LEGAL, ADMIN., ETC.:					
Legal Fees					
Legal Costs	300.00				
Admin. and Overhead				94.09	94.09
TOTALS	300.00			94.09	94.09
6. INTEREST					
7. MISCELLANEOUS	5,880.14			37.29	37.29
GRAND TOTALS	148,795.35	45,000.00	7,078.37	73,244.03	40,147.35

FUNDS RECEIVED AND DISBURSED

APPLICANT	(Line of Office) P. W. A. GRANT	TOTAL
Funds required and allotted	45,000.00	45,000.00
Funds deposited and source	99,151.72	99,151.72
Funds disbursed, per column 6, above		40,147.35
Balance in Construction Account—Applicant's books		104,004.37
Total outstanding checks		587.91
Balance in Construction Account—Depository's books		104,591.91

CERTIFICATE OF APPLICANT
 The applicant certifies that the purpose or purposes stated herein are included within the purposes set forth in the approved application and estimated cost of the project; except as the same shall have been revised, amended, modified, or otherwise changed and approved. The applicant further certifies that the funds now requested, when advanced, will be used for the purpose or purposes stated in column 4 on the reverse of this form, and that all information contained in this P. W. A. Form 108 is true, correct, and complete.

Subscribed and sworn to before me this 15 day of October, 1936, at San Diego, California (Place) and San Diego (County) State of California (State)
 By R. W. ... (Name of applicant)
City Manager (Title of officer)

GRAND TOTALS (Notary Public)

1. MISCELLANEOUS	2,880.71	1936
2. My commission expires	37.58	1936
3. INTEREST		
GRAND TOTALS	2,918.29	

PENALTY FOR FALSE CERTIFICATION—Section 35 of the Criminal Code, as amended, provides a penalty of not more than \$10,000 or imprisonment of not more than 10 years, or both, for knowingly and willfully making or causing to be made "any false or fraudulent statements or use or cause to be made or used any false account, claim, certificate, affidavit, or deposition, knowing the same to contain any fraudulent or fictitious statement or any Government department or agency relating to any matter within the jurisdiction of any Government department or agency."

CERTIFICATE OF DEPOSITARY
 We certify that the Construction Account of the above-named applicant has been credited with deposits totaling \$ 104,591.91 and had a credit balance of \$ 104,591.91 at the close of business August 31, 1936.

San Diego, California (Place) 1936 (Date)
 By [Signature] (Name of depositor)
 Applicant's Forces 15,000.00
 [BANK SEAL]

APPROVALS FOR FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS
 APPROVED: [Signature] 1936 (Date)
Resident Engineer Inspector
State Engineer Inspector

CLASSIFICATION	(1)	(2)	(3)	(4)	(5)	(6)
PRELIMINARY EXPENSES						
APPROVED STATE DIRECTOR						
THE DESCRIPTION						
Costs Incurred						
Amount Disbursed						

The following is the status of the above project as of the dates indicated. The funds requisitioned on the account paying form P. W. A. Form 108 will be expended for the purposes shown in column 4 and subject to changes approved by the Federal Emergency Administration of Public Works, 1936.

INSTRUCTIONS
 1. The summarization of costs as described in column 1 shall be in accordance with the standard classification of accounts prescribed by P. W. A. (Administrative Order 145).
 2. Entries in column 2 shall be based upon the most recent estimate of project costs as approved by P. W. A. through the State Director.
 3. Entries in column 3 shall consist of the aggregate of all previous loan and grant payments or requisitions, according to their status, as follows:
 (a) If no payments received on prior requisitions, then show items requested on pending requisitions.
 (b) If payments received on all prior requisitions, then show items requested on pending requisitions.
 (c) If the situation is a combination of (a) and (b), then the figures shown shall be determined accordingly.
 4. Entries in column 4 shall support the amount currently requisitioned as covered by Form P. W. A. 21-B, 21-C, or 22.
 5. Entries in column 5 shall cover all costs (paid and unpaid) incurred on the project as of the date of the requisition, or as of the closing date of the applicant's last accounting period.
 6. Entries in column 6 shall reflect actual disbursements only for the period coinciding with that covered by column 5.
 7. Entries in column 7 shall reflect actual disbursements only for the period coinciding with that covered by column 5.
 8. It is requested that the applicant's last accounting period be indicated according to the above instructions.

3-17-37
copy/P

PROJECT CHANGE NO. 1-1-1

To City of San Diego, c/o Fred D. Pyle
San Diego County
California

Docket No. Calif. 1223-R
Type of
Project: Dam repairs

Receipt is acknowledged of your communication dated September 23, 1936 requesting approval of the following project change:

Classification 1	APPROVED ESTIMATE			
	From 2	This change 3	To 4	
1. Preliminary	.00	+	2.71	2.71
2. Land and right-of-way	.00			.00
3. Construction	167,700.00	-	37,087.50	130,612.50
4. Engineering	12,000.00			12,000.00
5. Legal & administrative	300.00			300.00
6. Interest	.00			.00
7. Miscellaneous	.00	+	5,880.14	5,880.14
Total	180,000.00	-	31,204.65	148,795.35

Description of change:

This change as requested by applicant is to establish the estimated project costs determined by actual contract commitments, \$130,612.50, and the transfer of \$5,880.14 from construction fund to miscellaneous fund to be used for contingencies, and the transfer of \$2.71 from the construction fund to preliminary expense. This new project cost will reduce the grant allotment by approximately \$14,000.00

I hereby certify that this is a full, true, correct and confirmed copy of the original change order executed by the State Director on the date indicated.

C.W.Schruth Engineer Dated 10-6-36

This project change is hereby approved.

The Public Works Administration, in approving any change, assumes no obligation to finance the cost thereof, except to the extent to which the same may be paid out of funds expressly contracted for by it, and specifically makes no representation concerning any additional funds necessitated by any approved change.

A.D.Wilder, State Director

Date October 6, 1936

3-8-37
copy/p

October 23, 1936

Mr. N. H. Allaman, Resident Project Auditor
Public Works Administration
1108 Washington Building
Los Angeles, California

Subject: PWA Docket Calif. 1223-R
Hodges Reservoir Dam Strengthening
Funds

Dear Mr. Allaman:

In connection with PWA Docket Calif. 1223-R Hodges Reservoir Dam Strengthening, the original estimated cost as stated in the application for Federal grant was \$180,000 for the entire project.

A budget revision approved under Change Order 1-1-1, October 7, 1936, indicated a total estimated cost of \$148,795.35.

Please advise whether the approval of the revised budget estimate carries with it the automatic release of funds deposited by the City of San Diego in the Hodges Reservoir Dam Strengthening fund in excess of what is now required to make up the 55 percent of the estimated cost of \$148,795.35; or whether all of the \$99,000.00 deposited in the fund must be retained in that fund until the completion of the work.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p

3-8-37
copy/P

October 28, 1936

Eng. CWS:NB
Docket: Calif. 1223-R
City of San Diego
Hodges Reservoir Dam
Strengthening

Mr. Fred D. Pyle
Hydraulic Engineer
City of San Diego Water Department
524 F Street
San Diego, California

Dear Sir:

Your letter under date of October 23, 1936, to N.H.Allaman, Resident Project Auditor, relative to Applicant's funds deposited in connection with the above project, has been turned over to this office for reply.

In your letter you ask to be advised whether the approval of the revised budget estimate carries with it the automatic release of funds deposited by the City of San Diego in the Hodges Reservoir Dam Strengthening Fund in excess of what is now required to make up the 55% of the estimated cost.

Please be advised that all funds deposited by the applicant in the construction fund must remain intact until such a time as the project is completed and accepted.

Very truly yours

A.D.Wilder
State Director (California)

By Aleck Curlett
Assistant

For the Administrator

3-12-37
copy/P

CONTRACT CHANGE NO. 1-1-1

To City of San Diego c/o Fred D. Pyle
San Diego County
California
Contractor: M. H. Golden

Docket No. Calif. 1223-R
Type of Project Dam repairs
Symbol No. 42.133
Contract No. 1

Receipt is acknowledged of your communication, dated November 10, 1936, requesting approval of the following contract change:

Classification (1)	Latest Approved Estimate (2)	Scheduled Cost		
		From (3)	This Change (4)	To (5)
1. Preliminary	2.71			
2. Land and right-of-way	0			
3. Construction	130,612.50			
4. Engineering	12,000.00			
5. Legal and administrative	300.00			
6. Interest	0			
7. Miscellaneous	5,880.14			
Total	148,795.35			

Calendar days 38 additional New completion date 12-30-36

Description of change: Extension of construction time in behalf of the above contractor to December 30, 1936. See details attached.

I hereby certify that this is a full, true, correct and conformed copy of the original change order executed by the State Director on the date indicated.

C. W. Schruth, Engineer.

Dated 11/27/36

This contract change is hereby approved. This change is technically and economically sound, and proper provision for work has been established. The Public Works Administration, in approving any change, assumes no obligation to finance the cost thereof, except to the extent to which the same may be paid out of funds expressly contracted for by it, and specifically makes no representation concerning any additional funds necessitated by any approved change.

A. D. Wilder, State Director

Date November 19, 1936

3-12-37
copy/p

March 27, 1936

Mr. Fred D. Pyle
Hydraulic Engineer
City of San Diego
City Hall
San Diego, California

Reference: Hodges Dam reservoir
strengthening

Dear Sir:

With particular reference to Article Twelve Paragraph 3-(1), page 35 of the specification covering subject contract, we hereby respectfully request that this contract be classified as remote and inaccessible to the extent that the 40 hours per week for manual labor should apply.

The site being 32 miles from San Diego would necessitate an undue amount of transportation if it becomes necessary to use two shifts. In our opinion this particular job would not be properly workable with two shifts due to the necessity of daylight to preserve safety for the employees.

We will maintain a camp at the site if the workmen show a willingness to patronize the camp.

Very truly yours

M. H. Golden

MEG/a

3-17-37
copy/p

March 28, 1936

Mr. A. D. Wilder
State Director PWA
805 Washington Building
Los Angeles, California

Subject: PWA Docket Calif. 1223-R Hodges reservoir
dam strengthening, 40-hour week

Dear Sir:

Letter from M. H. Golden, contractor on PWA Docket Calif.
1223-R, has been received reading as follows:

"March 27, 1936

"Mr. Fred D. Pyle
Hydraulic Engineer City of San Diego
City Hall, San Diego, Calif.

Reference: Hodges dam reservoir strengthening

Dear Sir:-

With particular reference to Article Twelve
Paragraph 3-(1), page 35 of the specification cover-
ing subject contract, we hereby respectfully request
that this contract be classified as remote and
inaccessible to the extent that the 40 hours per
week for manual labor should apply.

The site being 32 miles from San Diego would
necessitate an undue amount of transportation if it
becomes necessary to use two shifts. In our opinion
this particular job would not be properly workable
with two shifts due to the necessity of daylight to
preserve safety for the employees.

We will maintain a camp at the site if the
workmen show a willingness to patronize the camp.

Very truly yours

(Signed) M.H.Golden"

MHG/a

The work is located at such a distance from the City of
San Diego that it is extremely hard to get men to go out for a
short period each week, and no living quarters are available
at the work. The "floating plants conditions" govern the pro-
ject and it is therefore recommended that the contractor
M.H.Golden be permitted to work his men forty hours a week.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

FB/p

Mr. Fred D. Pyle
Hydraulic Engineer
City of San Diego Water Dept.
524 F Street
San Diego, California

March 31, 1936
Calif. 1223 R
City of San Diego
Hodges reservoir dam
strengthening

Dear Sir:

This will acknowledge receipt of your letter of March 28th in which you request that the contractor be permitted to work forty (40) hours per week in connection with the above project. Also, we note that you set forth a copy of a letter from M. H. Golden, the contractor, requesting a 40 hour week in connection with the above project. We also note your comments and recommendations regarding this 40 hour week.

In order to make a change of this type, the same should have been done prior to the time of receiving bids. All contractors bidding upon the work bid with the expectation of working 130 hours per month. Therefore, to make a change at this time would be unfair to the contractors who originally bid upon the project.

The contractor upon the project has the privilege of working eight (8) hours per day for six (6) days per week provided that he does not exceed 130 hours per month, and in addition thereto, may work two shifts upon the project should he so desire, providing that the individual worker's time shall not exceed 130 hours per month. There are very few isolated cases in the United States where the Administrator has permitted 40 hours per week. Therefore, this office does not feel justified in placing this matter before the Administrator, or approving 40 hours per week in connection with this project.

Very truly yours

A.D.WILDER, ACTING STATE DIRECTOR
(Calif.)

By Aleck Curlett
Assistant

For the Administrator

CWS:NB

3-17-37
copy/p

April 1, 1936

Mr. M. H. Golden
531 Bank of America Building
San Diego, California

H-5

Subject: PWA Docket Calif. 1223-R Hodges reservoir
dam strengthening, 40-hour week

Dear Mr. Golden:

Enclosed is copy of letter received from PWA dated March 31, 1936 denying your request to work forty hours per week in connection with PWA Docket Calif. 1223-R Hodges reservoir dam strengthening.

You will note however that you may work 8 hours per day for 6 days per week with two shifts provided the individual worker's time does not exceed 130 hours per month.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

/p
encl.

June 19, 1936

Mr. M. H. Golden
Bank of America Building
San Diego, Cal.

Dear Sir:

Following up the conversation you had with our representatives, Mr. Louis Mehl and Mr. Henry Smith, I have been instructed to communicate with you, with the idea of making a more satisfactory arrangement concerning the work now in progress at Hodges Dam.

The distance to and from the dam to be traveled each day is a hardship upon the workmen employed there, and our idea is that together with the 130 hour a month clause which each man is permitted to work, and must wait till the next month before resuming work, is not only unsatisfactory to the men, but has a tendency to slow up the progress of the job for the following reasons.

(1) The work as it now is, must proceed six day a week, and due to the overlapping of time worked, and not with the same crew, the very nature of the work causes more or less inefficiency due the fact that new workmen coming on from time to time, and not being familiar with the work, progress is slower than it would be if the same crew was employed.

(2) All crafts represented in connection with this project have their members nearly all at work, and when a job is offered to them at home, it rather difficult to refuse, taking into consideration the time required to put in a day at the dam.

(3) We feel that if some arrangement can be made whereby each man could work a 5 day, 40 hour week, between Monday A.M. and Friday 5.00 P.M. giving two days off, and thereby enabling you to retain the same men, the progress of the work would be more satisfactory to all concerned.

It is our opinion that a clause exists, which is intended to apply to outlying districts such as this, whereby a forty hour week is permitted as stated in the foregoing. If this can be brought about we are sure that the results obtained, will more than justify our contention, for after all satisfactory results is what is desired, and this can be best brought about by cooperation, which we are at all times willing to do.

Sincerely

San Diego Bldg. Trades Council

By Walter Barnes, Sec'y.

June 19, 1936

Mr. Fred D. Pyle
Hydraulic Engineer
524 F Street
San Diego, California

Subject: PWA Docket Calif. 1223-R Hodges reservoir
dam strengthening, San Diego, California

Dear Sir:

With reference to our contract for Hodges reservoir dam strengthening, Federal Public Works Project California 1223-R, I wish to call to your attention the exceedingly unsatisfactory conditions we are being compelled to cope with, as pertaining to the supply of labor. At the beginning of the contract we made application through you for a ruling to allow forty hours per week. This application was denied on the grounds that it would not be fair to other contractors who bid on this project.

We maintain that paragraph one of section three page 35 of the specifications makes ample provision to justify a ruling in favor of the 40 hour per week provision. We also believe that every contractor who bid was justified in assuming the project was in a location remote enough to come within the provisions. The paragraph referred to is as follows:

(1) The maximum hours of work for manual labor shall be 8 hours per day and 130 hours per month. On the projects located at points so remote and inaccessible that camps or floating plants are necessary, the maximum hours of work for manual labor shall be 8 hours per day and 40 hours per week.

This project is 32 miles from San Diego, and while the number of men employed and the distance from the city would justify a camp, the men themselves prefer to travel to and from the work rather than patronize a camp.

In almost every case where good men have left the job with their hours in, we have been unable to get them back. All of the qualified men can now get employment on private construction with unlimited hours, in the city where they can live with their families. They cannot be blamed for not wanting to travel 64 miles each day for only 130 hours work per month.

The question of working two shifts has been raised, as you know this is impossible as no man is willing to travel that far for five or six hours work per day.

We have conscientiously tried to perform this contract on the 130 hour per month basis, but are meeting obstacles at every turn that prevent making the necessary progress.

The nature of this project is such that the average run of labor available is not qualified to participate. The dam is 130 feet high and practically all of the work has to be done from scaffolds. Men to do this work must be young, clear headed, and active or the result is disasterous from a safety standpoint.

It requires from one to two weeks for the best men obtainable to become used to the height, at the end of that time they have their 130 hours in and must be replaced.

Please note that this project is being run as a union labor job. The union officials are doing everything in their power to help, but are unable to govern the actions and wishes of the men. These officials will also verify my statement that skilled labor is at the present time, at a premium in Southern California.

We again point out that this job is in a class by itself in that only men who can stand to work high in the air and who have all of their faculties can be permitted to work on it.

Knowing that you visit the job regularly and are acquainted with the facts herein set forth we urgently request that you present our case to the proper Government authorities at your earliest convenience, as the progress of the work is suffering at the present time.

Very truly yours

M. H. Golden

MHG/a

3-17-37
copy/p

June 20, 1936

Mr. A. D. Wilder, State Director PWA
805 Washington Building
Los Angeles, California

Subject: PWA Docket Calif. 1223-R Hodges
Reservoir Dam Strengthening
40-hour week

Dear Sir:

We are in receipt of letter, copy enclosed, from the contractor, M.H. Golden, for the Hodges reservoir dam strengthening work, PWA Docket Calif. 1223-R, setting forth the conditions under which the work is being progressed and the difficulties encountered on the 130-hour working month basis, and requesting permission to proceed under the 40-hour per week provision of the contract specifications.

The work is located about 30 miles from San Diego, and on account of its nature, requires men expert in rock and concrete drilling, erection of high scaffolding, the placing of steel and concrete high above ground under very difficult conditions.

The number of craftsmen in San Diego is limited and with the recent activities in private construction work on a 40-48 hour per week basis, it is becoming more difficult to secure and retain proper workmen on the 130 hour basis.

The contractor has employed union labor throughout and he has been advised by the representatives for the various unions involved, copy of their letter enclosed, that qualified union men are now difficult to obtain on the 130 hour basis.

It is understood that the contractor has not been able to obtain men on a two shift short hour basis because of the distance involved and the more attractive hours and nature of local work.

The work is both difficult and dangerous, and requires more than average skill and experience in the execution thereof, and a large turnover of labor will undoubtedly result in serious accidents which cannot be avoided with inexperienced men.

It is therefore deemed proper and advisable, and in view of the changed labor conditions since the contract was signed, to recommend, in order to progress the work more satisfactorily, expeditiously, and with greater safety, that the contractor be permitted to work his men on a forty hour per week basis.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/k
encls.(2)

June 23, 1936

SDIRAC:EH
Calif. 1223 R
Hodges Reservoir Dam

Mr. Fred D. Pyle
Hydraulic Engineer
San Diego Water Department
San Diego, Calif.

Dear Sir:

We are in receipt of your letter of June 20th, asking for change in the terms of contract so that men may work 8 hours a day and 40 hours per week. In order to make such a change we must submit full information to Washington and secure Washington's approval. We have written the Resident Engineer Inspector on the job for his comments.

As soon as we receive this information we will forward all the information available to the proper authorities.

Any other information that you care to supply in the meantime will be appreciated as it is absolutely necessary that Washington receive all information possible to show that the scarcity of labor actually does exist.

Very truly yours

A. D. Wilder
State Director (California)

By Aleck Curlett
Assistant State Director

For the Administrator

June 24, 1936

Mr. Fred D. Pyle
Hydraulic Engineer
San Diego, California

Dear Mr. Pyle:

We respectfully request permission to intercede in behalf of Mr. M. H. Golden, contractor, looking to approval of his application for upward revision of hours of labor on his contract for strengthening Lake Hodges reservoir dam, Federal Public Works project, California Docket No. 1223-R.

There are now under construction in the City of San Diego over 1200 separate building projects with an aggregate estimated value of \$2,080,685, on building permits issued since April 1, 1936. This constitutes the greatest building activity in San Diego since 1929. The hours of labor on these private projects are from 40 to 48 hours per week and the hourly rates of pay for good mechanics are the same as on PWA and other public projects.

There is, in fact, a very acute shortage in this vicinity of the following craft:

Skilled carpenters
Skilled reinforcing steel workers
Skilled building laborers

Contractors on private projects are experiencing considerable difficulty in securing sufficient skilled labor for continuous operation on their jobs. This accounts for workmen's unwillingness to accept employment on Mr. Golden's project, located as it is 32 miles from San Diego, without the opportunity of earning at least as much as they can in the City, without the necessity of living away from home or traveling great distances every day.

Respectfully yours

M. A. Mathias, Manager

NAM:g

June 25th, 1936

Mr. Fred D. Pyle
City Hydraulic Engineer
Pacific Building, 524 F Street
San Diego, California

Dear Sir:-

At the request of M. A. Mathias of the Associated General Contractors and Mr. Beerman of your office, we are submitting the conditions as we find them regarding the procurement of highly qualified carpenters for referral to PWA contractors.

We are experiencing some difficulty in securing highly qualified carpenters for appointment to PWA contract projects, for the reason that although the hourly rate is the same, they are permitted to work from forty to forty eight hours per week in private industry, and are restricted to one hundred thirty (130) hours per month by the PWA contractors.

It would seem that a forty (40) hour week in the instance referred to would be highly desirable from the standpoint of this office, on account of the fact that it would make the work opportunity more attractive; thereby facilitating our efforts to secure the better grade of carpenters for referral to the PWA contractors.

Very truly yours

Ray Mathewson, Manager
San Diego Office

By Roy Ferguson
Assistant Manager

RF:MJ

June 25, 1936

Mr. M. H. Golden
Bank of America Bldg.,
San Diego, Calif.

Dear Sir:

After an investigation of the job you have underway at Hodges Dam we wish to call your attention to the following facts.

The work consisting of repairs and strengthening of an existing dam and is different from the ordinary type of construction and requires the services of men of above the average in knowledge of their craft.

The height of the work also makes necessary a careful selection of the men sent out as the extraordinary amount of climbing involved in the performance of their duties prohibits the use of men who are not young and active even though they be masters of their craft.

Due to the increase in building in San Diego, the men who have completed their time allowed on Hodges dam, are immediately put to work on other jobs and are no longer available when the time comes for them to return to the dam.

The isolated position of the dam should also be taken into consideration, when men are able to procure employment within the City it is very hard to get them to go to the dam where they are limited to 130 hours per month.

This Council feels that due to the shortage of men having all qualifications necessary for this job that steps should be taken to put the job on a five day forty hour week basis to be worked straight thru to completion of job and remove the 130 hour month clause now in effect.

San Diego Building Trades Council

By Walter Barnes, Sec.

(SEAL)

3-16-37
copy/p

June 26, 1936

Mr. A. D. Wilder, State Director PWA
805 Washington Building
Los Angeles, California

Subject: PWA Docket Calif. 1223-R Hodges
reservoir dam strengthening
40-hour working week

Dear Sir:

Receipt is acknowledged of your letter of June 23, 1936 pertaining to contractor M. H. Golden's request for a 40-hour week on the Hodges reservoir dam strengthening work, PWA Docket Calif. 1223-R.

In compliance with Order PW57347, being Administrative Order No. 61, Supplement No. 13, enclosed is copy of letter from the unions furnishing labor for the contractor and copy of letter from the California State Employment Service stating the facts in connection with the availability of carpenters; and copy of letter from the local office of the Associated General Contractors stating the facts on the amount of total private construction now under way in the City of San Diego and indicating that there is a very acute shortage of certain crafts.

The progress of the work at Hodges dam is being retarded on account of the short working hours and the difficulties of getting sufficient qualified men for such a distance away from the City. As of May 31, 1936, while 31 per cent of the contract time had elapsed, the physical performance of the contract was only 7.8 per cent complete. On June 25, 1936 with 43 per cent of time elapsed the work is only 14 per cent complete.

As the work continues the frames and strengthening members will rise still higher above ground surface and only the most careful and qualified workers should be employed in order to prevent undue hazard and numerous accidents.

It is noted that in your letter you referred to change in terms of the contract. It is respectfully submitted that according to our understanding the 40-hour week, for which Contractor M. H. Golden is applying, is covered under the requirements of paragraph 3(a)(1) page 35 of the contract specifications and it does not appear to be necessary to request a change in the terms of the contract in order to permit a 40-hour working week. It is understood that according to PW57347 the decision as to permitting the 40-hour week may be given directly by the State Director PWA and your very earliest consideration and approval will be appreciated.

Very truly yours
Fred D. Pyle
Hydraulic Engineer

FDP/p
encls.(3)

3-16-37
copy/p

1936 JUL 17 PM 4 06

SA405 48= LOSANGELES CALIF 17 35 1P

FRED D PYLE

CITY HALL SANDIEGO CALIF

RE HODGES DAM CALIFORNIA TWELVE TWENTY THREE THIS WILL BE
YOUR AUTHORITY FOR CONTRACTOR TO WORK HIS MEN EIGHT HOURS
DAY FORTY HOURS EACH AND EVERY WEEK STARTING THIS WEEKS
PAYROLL PERIOD STOP LETTER OF CONFIRMATION WILL FOLLOW FIRST
OF WEEK GIVING CERTAIN STIPULATIONS THAT MAY BE NECESSARY

A D WILDER

3-16-37
copy/p

1936 JUL 17 PM 4 06

SA405 48= LOSANGELES CALIF 17 35 1P

FRED D PYLE

CITY HALL SANDIEGO CALIF

RE HODGES DAM CALIFORNIA TWELVE TWENTY THREE THIS WILL BE
YOUR AUTHORITY FOR CONTRACTOR TO WORK HIS MEN EIGHT HOURS
DAY FORTY HOURS EACH AND EVERY WEEK STARTING THIS WEEKS
PAYROLL PERIOD STOP LETTER OF CONFIRMATION WILL FOLLOW FIRST
OF WEEK GIVING CERTAIN STIPULATIONS THAT MAY BE NECESSARY

A D WILDER

July 17, 1936

Mr. M. H. Golden, Contractor
531 Bank of America Building
San Diego, California

H-27

Subject: Hodges reservoir dam
strengthening, PWA Docket
Calif. 1223-R 40-hour week

Dear Mr. Golden

Your request of June 19, 1936 for permission to use a 40-hour week in connection with Hodges reservoir dam strengthening work, PWA Docket Calif. 1223-R, was forwarded to the State Director PWA on June 20, 1936 with recommendation that your request be granted.

The following telegram has just been received from A. D. Wilder, State Director PWA.:

"RE HODGES DAM CALIFORNIA TWELVE TWENTY THREE THIS WILL BE YOUR AUTHORITY FOR CONTRACTOR TO WORK HIS MEN EIGHT HOURS DAY FORTY HOURS EACH AND EVERY WEEK STARTING THIS WEEKS PAYROLL PERIOD STOP LETTER OF CONFIRMATION WILL FOLLOW FIRST OF WEEK GIVING CERTAIN STIPULATIONS THAT MAY BE NECESSARY"

Please govern your employment of men in accordance with the above telegram.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

FDP/f

APPROVAL OF INCREASE OF MAXIMUM
WORKING HOURS

PWA File No.
Calif. 1223-R

Applicant: City of San Diego
Project: Hodges Reservoir Dam
Location: 32 miles from the
City of San Diego

The request for increase of maximum working hours on the above mentioned project having been duly considered by me, I find, determine and declare that special and unusual circumstances exist in this case which, in my judgment, make it impracticable and infeasible to require adherence to the maximum hours of work heretofore prescribed. Such special and unusual circumstances are as follows:

The job is located approximately 32 miles from San Diego, which is the center of employment for this immediate territory. Mechanics are reluctant to go so far away from home and only obtain 130 hours per month, resulting in their being laid off three or four days every fourth week and not returning to the job the first of the next calendar month, therefore disrupting the crew and the contractor's work.

An increase of maximum working hours is hereby approved for this project as follows:

1. The maximum working hours shall be
 - (a) 8 hours per day
 - (b) 40 hours per week
 - (c) Not to exceed 160 hours per month
2. The said increased maximum shall apply to the following designated trades or occupations only:

All skilled and intermediate labor

3. The said increased maximum shall apply from August 10th 1936 to October 10th, 1936.
4. The said increased maximum shall apply only to the work, contract or sub-contract identified as follows:

Contractor and all sub-contractors

This approval has reference only to PWA requirements and does not have reference to provisions of local laws, if any, restricting hours of work. The interpretation and application of any such local laws are matters concerning which no responsibility is assumed by the PWA.

This approval is conditioned upon the owner informing the affected principal contractor (unless the work is being done by force account) that the Owner does not waive any rights it may

3-16-37
copy/p

have to liquidated damages in the event such contractor shall fail to complete the work within the time specified in the contract.

This approval may be withdrawn by the State Director PWA at any time upon determination by him that the conditions warranting such increase of maximum working hours have ceased to exist.

Dated August 10th, 1936

A. D. Wilder
State Director PWA (California)

August 12, 1936

Hodges Reservoir Dam
Calif. 1223-R
Increase in maximum
working hours

Mr. Fred D. Pyle
Hydraulic Engineer
San Diego Water Department
524 F St.,
San Diego, Calif.

Dear Sir:

Please find enclosed authorization for increase in maximum working hours, as approved by Mr. A. D. Wilder State Director PWA.

This increase extends from August 10th, 1936, to October 10th, 1936. If, at the time of the expiration of this authorization, the labor shortage is still acute you should secure a letter from the Manager of the local Employment Service, embodying his recommendations for extension of this time, and mail same to this office with your request.

Very truly yours

A. D. Wilder
State Director (Calif)

By Aleck Curlett
Assistant State Director

For the Administrator

3-15-37
copy/p

August 13, 1936

Mr. M. H. Golden
531 Bank of America Building
San Diego, California

Dear Mr. Golden:

Reference is made to our letter addressed to Mr. Fred D. Pyle, Hydraulic Engineer, City of San Diego, under date of June 24, 1936, pertaining to labor shortage in connection with contract for strengthening Lake Hodges reservoir dam, Federal Public Works project.

The labor shortage therein indicated is to be interpreted that there exists a shortage of common labor as well as a shortage in the skilled and semi-skilled classification.

Yours very truly

M. A. Mathias, Manager

Associated General Contractors
of America
San Diego Chapter

MAM:g

August 14, 1936

Mr. M. H. Golden, Contractor
531 Bank of America Building
San Diego, California

H-37

Subject: PWA Docket Calif. 1223-R Hodges Dam
Strengthening, 40-hour week

Dear Sir:

Enclosed is copy of letter dated August 12, 1936 from the State Director PWA pertaining to authorization to increase the maximum working hours from 130 to 160 hours per month; also copy of approval of increase of maximum working hours.

In conformity with the requirements of the PWA you are informed that the City of San Diego does not waive any rights it may have to liquidated damages in the event the Contractor shall fail to complete the work within the time specified in the contract.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p
encls. 2

August 14, 1936

Mr. M. H. Golden, Contractor
531 Bank of America Building
San Diego, California

H-38

Subject: PWA Docket Calif. 1223-R Hodges reservoir
dam strengthening, maximum working hours

Dear Sir:

There has been furnished you copy of the authorization from PWA to increase the maximum working hours on PWA Docket Calif. 1223-R Hodges reservoir dam strengthening from 130 to 160 hours per month. The increase pertains only to skilled and intermediate labor.

In order to have the increase of working hours pertain to common labor as well it is indicated that a letter is necessary from the labor unions if the facts of the case warrant that the difficulty of securing properly qualified common labor is equally great as for skilled and intermediate types of labor, and their letters should state that common labor was inadvertently not mentioned in their letter of June 25, 1936 directed to Mr. Golden.

I shall appreciate also receiving a statement from you as to the percentage of workers on the Hodges work who are classified under common labor, the difficulties that would result if common labor were restricted to 130 hours per month while other types of labor can work 160 hours per month, and a statement of your experience pertaining to accidents encountered on the job due to the fact that properly qualified labor has been difficult to obtain.

A letter similar to that of June 24, 1936 from the local chapter of the Associated General Contractors and addressed to the Hydraulic Engineer, should also be obtained as well as one from the United States Employment Service, all stating, if the facts warrant, that common labor is difficult to obtain on a 130-hour working basis at such a distance from San Diego.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p

3-15-37
copy/p

August 14, 1936

Mr. M. H. Golden
Bank of America Building
San Diego, California

My dear Mr. Golden:

Referring to our telephone conversation yesterday afternoon, wherein you called to our attention that the unskilled or common laborers were not included in the new set-up, which applies to the forty hour-five day week on the Hodges Dam project, I have been instructed to write you and try to clear up the situation as it pertains to the laborer; in our previous letters to you and the resident engineer, Mr. Graff, it seems that this was not done.

The Building Trades Council represents all men employed in the building industry, both skilled and unskilled (the latter is usually classified as common labor) and what affects one craft naturally includes all affiliated crafts, of which the building and common laborers organization is a part. Due to the nature of the work on this project, there is a scarcity of men qualified to do this work which the laborers follow on this job, and one who has not had some experience, and is not physically fit, is not only expensive, but he endangers the lives of others, as well as his own, and thereby has no place in the picture. The common laborer is working under identical conditions as the skilled mechanic is, and should therefore come under the same classification, as to the time worked. By so doing, you will be assured of competent men and will have the same crew; on the other hand if he is not classified under the forty hour-five day week, he will naturally seek employment during his off days when he has worked his allotted time, and a new crew will have to be broken in.

In view of the foregoing, i.e. that the common laborer has been overlooked in this matter, we are of the opinion that these men should be included in the forty hour-five day week, dating back to the time it went into effect; in other words, retroactive.

Sincerely yours

San Diego Building Trades Council

By Walter Barnes, Sec'y.

(SEAL)

M. H. GOLDEN
General Contractor
San Diego, California

August 17, 1936

Mr. Fred D. Pyle
Hydraulic Engineer
City of San Diego,
San Diego, California

Subject: Hodges Dam Strengthening
Progress and Labor

Dear Sir:

Your letters H-38 and H-39 of August 14, 1936 received. As the subject of these two letters together with the enclosure from Mr. Graff are closely related, I am replying to both herewith.

We had hoped that the change in hours of work to 40 hours per week would greatly relieve the very bad conditions which prevailed under the 30 hour per week provision. We find, however, that the Government has ruled that 40 hours per week means not to exceed 160 hours per month. Mr. Graff has designed our work month as beginning on the 20th of each succeeding month. As the result of this ruling, the job is at a standstill today, tomorrow, and Wednesday (August 17th, 18th, 19th). This loss of three days will also occur each month until completion of the job.

Mr. Graff suggests a more concentrated effort on form building. To this we agree fully, but we have a standing order for carpenters at the Labor Union, which they tell us they cannot fill. We have definitely established the fact that good carpenters and building laborers can now get good jobs here in the city where they can work six or seven days a week and that they, therefore, will not travel that far to work five days per week for four weeks per month. To make matters worse, we have been informed by the Labor Inspector of the city that quite a number of the men we have on the job do not live within the city limits of San Diego and that will have to be discharged. The quality and efficiency of the men we have been able to hold on the job has proven to be considerably below the average. This condition not only retards progress, but it also creates problems in accident prevention never before experienced by our firm. We have a very enviable accident ratio record for our line of work, but our insurance carriers are reminding us that the frequency of petty injuries on this job is very apt to take us out of the preferred classification. The records and statistics of the insurance carriers show that these accidents are, in almost every instance, caused by thoughtlessness on the part of individuals due to their inexperience rather than by the lack of safety regulations on our part. An itemized survey of all accidents and their cause is on file at our office which is open to your inspection at any time.

We feel that the specialized character of this work together with its isolation is ample justification to ask for a release from restrictions as to hours of work. Double shifting is out of the question. Night work on such a job with the poor quality of workmen available would be too hazardous to undertake. While it is true that we were made aware of the hour of work requirements when we bid the job, it is also true and evident that no one could anticipate the dire lack of available workman which we are now faced with. We make no apologies for the progress we are making at this time, with due consideration to the number and quality of workmen obtainable and the restrictions as to hours of work. We are endeavoring in every way to get at least six more carpenters which is all that could possibly work in the limited amount of working space on the job.

Lack of a sufficient supply of labor has always been considered a just cause for an extension of time on construction work. Should the time allotted elapse before physical completion, we shall feel justified in requesting an extension of time due to labor shortage and to the three days loss each month on account of the 160 hour per month ruling. We will welcome any suggestion or plan you can suggest to relieve this situation. We are naturally very much interested in bringing the job to completion just as soon as possible on account of the increased overhead required for a longer period of time.

The letters requested by your office relative to the inclusion of common laborers in the recent 40 hour per week decision are enclosed herewith.

Very truly yours

M. H. GOLDEN (Signature)
M. H. Golden.

Copy to Mr. Graff

August 18, 1936

Mr. C. E. Graff
Resident Engineer PWA
Rancho Santa Fe, Calif.

Dear Sir:-

Our attention has been directed to the advisability of adding certain information to a letter addressed to you under date of June 26th, 1936, with reference to the availability of highly qualified carpenters for referral to PWA projects.

In addition to the scarcity of the classifications in that letter, we also have great difficulty in securing all classes of labor, due to the inaccessibility and remoteness of the project being located thirty odd miles from San Diego, and many miles from any center of population.

It would seem highly desirable from the stand-point of this office that a forty hour week be instituted for all classifications on the Lake Hodges dam project. This action we are sure would facilitate our efforts to secure the high type of workman this project demands.

Very truly yours

RAY MATHEWSON, MANAGER
SAN DIEGO OFFICE

By Roy Ferguson
Assistant Manager

RF:MJ

August 19, 1936

Mr. A. D. Wilder
State Director PWA (Calif.)
805 Washington Building
Los Angeles, California

Subject: PWA Docket Calif. 1223-R Hodges
Reservoir Dam strengthening,
40-hour week

Dear Sir:

Referring to your letter dated August 12, 1936 transmitting authorization of maximum working hours on the Hodges reservoir dam strengthening work, PWA Docket Calif. 1223-R, from 130 hours per month to 40 hours per week, copy of your letter was transmitted to Contractor M.H. Golden on August 14 and it was noted that the increase in the working hours applied to skilled and intermediate labor only.

Enclosed is copy of letter from the San Diego Building Trades Council dated August 12 indicating that common labor should have been included in their letter dated June 25, copy of which was attached to my letter of June 26 on the subject of the 40-hour week.

Enclosed also is copy of letter from the local chapter of the Associated General Contractors; and

Copy of letter from the United States Employment Service both stating the conditions as to common labor in the local area; and

Copy of letter from Mr. M.H. Golden, General Contractor on the Hodges reservoir dam strengthening, dated August 17, on the same subject.

It appears that in the data furnished you with my letter of June 26 the request for an extension of working hours from 130 hours per month to a 40-hour working week should have included common labor. The inclusion of common labor in the 40-hour week appears justified and it is the recommendation of this office that it be approved and made retroactive to the date on which the 40-hour week became applicable to skilled and intermediate labor.

Very truly yours
Fred D. Pyle
Hydraulic Engineer

PB/p
encls. (4)

August 25, 1936

Docket Calif. 1223-R
Hodges reservoir
Re: Increase excess hours for
common labor

Mr. Fred D. Pyle
Hydraulic Engineer Water Dept.,
City of San Diego
San Diego, California

Dear Sir:

In reply to your letter of August 19th this letter will serve, temporarily, as your authorization to include common labor as well as intermediate and skilled labor in the authorization for increased hours issued to you under date of August 10th, 1936.

This authorization may be construed as being retro-
active to August 10th, 1936.

Very truly yours

A. D. Wilder
State Director (California)

By Aleck Curlett
Assistant State Director

For the Administrator

August 26, 1936

Mr. A. D. Wilder
State Director PWA
805 Washington Bldg.,
Los Angeles, California

Subject: PWA Docket Calif, 1223-R Hodges
Reservoir Dam Strengthening
40-hour week, common labor

Dear Mr. Wilder:

Receipt is acknowledged of your telegram dated August 22, 1936 and subsequent letter dated August 25, 1936 authorizing the 40 hour week for common labor in connection with the Hodges reservoir dam strengthening work, and making the authorization retroactive to August 10, 1936.

Your original telegram authorizing the 40 hour week was dated July 17, 1936, and I shall appreciate, for purpose of clearing the record, retroactive authorization if deemed necessary for common labor to work 40 hours per week between July 17, 1936 and August 10, 1936.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/m

REQUEST FOR INCREASE OF MAXIMUM WORKING HOURS

To: A. D. Wilder, State Director (Calif.) PWA File No. Calif. 1223R
 Public Works Administration Applicant: City of San Diego
 Project: Hodges Reservoir Dam
 Location: 32 miles from the City of San Diego

You are hereby requested to approve an increase of working hours in excess of the maximum hours of work prescribed and as set forth in the construction regulations of the applicable PWA forms, upon the following statement of facts which are hereby certified to be true, to-wit:

1. The work, contract, sub-contract or proposed contract to be affected by the requested increase of working hours is properly identified as follows:
 - (a) Name of contractor M. H. Golden
 Application to include subcontract by Emsco Concrete Cutting Corporation
 - (b) Date of the contract or subcontract March 24, 1936
 - (c) If increase is requested for a proposed contract, state whether bids have been called for, and if so, when they will be received: _____
 - (d) Other proper identification of the work, contract, sub-contract or proposed contract to be affected by the increase requested.

2. The maximum hours to which the increase is requested shall be as follows:
 - (a) Eight hours per day
 - (b) Forty hours per week
 - (c) No month limitation hours per month

3. The said increase of maximum working hours shall apply to the following designated trades or occupations, namely:

All trades and occupations.

4. The special and unusual circumstances, which render it infeasible or impracticable to adhere to the maximum working hours heretofore prescribed and which warrant approval by you of the increase requested, are as follows:

The job is located approximately 32 miles from San Diego which is the center of employment for this immediate territory. Practically all workers are not only reluctant to go so far away from home and only obtain 130 hours per month, but will not go in such short working hours because they can get employment in town. The labor unions have been repeatedly requested to furnish skilled workers and union labor without being able to supply the number of men requested.

Dated: October 29, 1936

M. H. Golden, contractor

COMMENTS AND RECOMMENDATIONS OF OWNER

The difficulty of getting qualified labor of all kinds has not changed since July 17, 1936 on which date the 40 hour week was first authorized by the PWA. On October 16 and 17 the Hodges reservoir, due to a rainfall of 3.92 inches in 48 hours, rose 1.57 feet. The danger from floods now is very real and it is recommended that to minimize the risk and possible damage to property in case of flood that the PWA grant a 40 hour week without monthly limitation so as to enable the contractor to get the maximum number of qualified men to complete the work before possible floods over the spillway. The approval is requested to be effective October 11, 1936 and extend to the completion of the work.

Dated October 30, 1936

THE CITY OF SAN DIEGO

By Fred D. Pyle
Hydraulic Engineer

MEMORANDUM: To National Re-employment Service
From State Director PWA(California)

Herewith please find one copy of a request from the above owner for an increase of maximum working hours on the above entitled project. Please note your comments and recommendations concerning said request in the spece provided below. Will you please sign and return two copies of this form "B" to this office, retaining the third copy for your files.

A. D. Wilder
State Director PWA (Calif.)

COMMENTS AND RECOMMENDATIONS OF NATIONAL RE EMPLOYMENT SERVICE

Oct. 28, 1936

This is to inform you that we are still unable to furnish a sufficient number of qualified workers for the Hodges Dam

project if this project is limited to the thirty hour week or 130 hour month. Therefore we request that this job be continued on a forty hour week basis.

Respectfully

San Diego Building Trades Council

(SEAL)

By Walter Barnes, Sec.

Due to the remoteness of this project from the center of employment activities and labor supply for San Diego County, and also because of the fact that competent and qualified skilled and unskilled workmen can work from 40 to 48 hours per week in private industry and on other construction projects, this office has continued to experience difficulty in securing an adequate supply of workmen of desirable qualifications for the Lake Hodges reservoir dam strengthening project, M. H. Golden contractor. It seems that in justice to all concerned, the maximum working hours on this project should be allowed as stated in the request for increase of maximum working hours, made by the general contractor and recommended by the city's hydraulic engineer.

Dated: October 29, 1936

Ray Mathewson, Manager
National Re-employment Service

M. H. GOLDEN

General Contractor
531 Bank of America Building.
San Diego, California

November 6, 1936

Mr. Fred D. Pyle
Hydraulic Engineer
City of San Diego
524 "F" Street
San Diego, California

Subject: Lake Hodges Reservoir Dam Strengthening
Extension of time

Dear Sir:

With reference to contract date of completion on subject contract, we respectfully request an extension of time of thirty-eight days. Our reasons for expecting this request to be granted are as follows:

From the day on which work was started on the vertical and diagonal strengthening until approximately September 17, 1935, we were at no time able to obtain sufficient carpenters and reinforcing steel placers to make the necessary progress. I think you are acquainted with most of the facts concerning this subject. Additional verification can be had from the labor union representatives if necessary.

Item "one" in the classification of work in the contract calls for 300 cubic yards of excavation. To date 550 yards have been excavated and approximately 50 yards remain to be excavated, making an excess of 100% on the item.

Item "four" calls for 200 yards of excavation. To date, 367.7 yards have been excavated. While the additional yardage of excavation is relatively small, it was hand excavation of rock into depths not contemplated in the contract. We consider this item alone ample justification for fifteen days extension.

Item "ten" calls for cleaning and placing 80,000 pounds of city owned reinforcing steel. To date 200,000 pounds of this steel has been cleaned and placed with no appreciable decrease in the amount of new steel.

Item "fifteen" calls for chipping 9300 square feet of concrete surface. To date, 13,140 square feet have been chipped.

In addition to the above, several additions to the work have been added, such as removal of seven of the original struts between buttresses and the additional anchorage of horizontal ties.

November 6, 1936

The work under this contract is of very trying nature, and its remoteness from the city has been a distinct disadvantage to securing qualified men. This fact has been particularly due to the fact that work has been plentiful in San Diego.

Your cooperation and that of your inspectors, on this most difficult job, has been most helpful to our organization for which we are deeply appreciative.

As the contract date of completion is drawing close, may we have your early and careful consideration on this request.

If this extension of time is granted, it is agreed that no claim of any nature will be made against the City of San Diego for any damages, costs, or otherwise which might be occasioned to the Contractor by reason of the additional time required to complete the contract.

Very truly yours,

M. H. Golden (signature)
M. H. GOLDEN

November 7, 1936

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

Subject: PWA Docket Calif. 1223-R Hodges reservoir
dam strengthening, extension of time for
completion of contract

Gentlemen:

Mr. M. H. Golden, contractor for the Hodges reservoir dam strengthening work, PWA Docket Calif. 1223-R, has made a request for an extension of time for a period of thirty-eight days up to and including December 30, 1936, due to:

The contractor was delayed due to his inability to secure qualified skilled workmen such as carpenters and reinforcing steel workers under the 130 hour per month limitation in the contract until the Public Works Administration approved a change to a 40-hour week on July 17, 1936, or 112 days after the approval of the contract.

To comply with PWA regulations it is necessary that the owner and the contractor make a joint application to the Public Works Administration for approval of an extension of time.

The extension of time has the approval of the Hydraulic Engineer and of the City Manager as required by the contract specifications, subject to approval by the Public Works Administration.

RECOMMENDATION: It is recommended that the City Manager be authorized and directed to make a joint application with the contractor for and on behalf of the City of San Diego for an extension of time for the completion of the Hodges reservoir dam strengthening work, PWA Docket Calif. 1223-R, for thirty-eight additional calendar days up to and including December 30, 1936.

Respectfully submitted

Fred D. Pyle
Hydraulic Engineer

APPROVED:

R. W. Flack
City Manager

FDF/f

RESOLUTION NO. 65137

RESOLUTION WAIVING, UPON THE CONDITIONS SET FORTH THEREIN, THE PAYMENT OF A PORTION OF THE LIQUIDATED DAMAGES BY THE CONTRACTOR UNDER PWA DOCKET CALIF. 1223R FOR FAILURE TO COMPLETE THE PERFORMANCE UNDER SUCH CONTRACT WITHIN THE TIME PROVIDED THEREIN.

WHEREAS, the contractor between the City of San Diego, as Owner, and M. H. Golden, as Contractor, for the construction of Hodges reservoir dam strengthening under PWA Docket Number Calif. 1223-R, provides for the completion thereof 240 calendar days after the effective date of such contract and for liquidated damages payable by such contractor in the sum of \$25.00 per day for each day in excess of said period before the final completion of the work provided for in said contract; and

WHEREAS, said contractor has requested the extension of the time of completion for an additional thirty-eight (38) calendar days, or until December 30, 1936, and the waiving of the payment of the liquidated damages for said period of extension for the reasons set forth in the communication from the Hydraulic Engineer as contained in Document No. 300175, on file in the office of the City Clerk of said City; NOW, THEREFORE,

BE IT RESOLVED By the Council of The City of San Diego, as follows:

That the request of M. H. Golden, contractor, for an extension of time for thirty-eight (38) additional calendar days, to-wit, to and including December 30, 1936, and the waiver of the payment by the contractor of liquidated damages for the period of such extension, be, and it is hereby accepted and granted, subject to approval of the Federal Emergency Administration of Public Works.

Presented by _____

Approved as to form by _____ City Attorney

I HEREBY CERTIFY that the above and foregoing resolution was passed by the Council of the said City of San Diego, at November 10, 1936

ALLEN H. WRIGHT, City Clerk

By CLARK M. FOOTE, JR., Deputy

(SEAL)

November 10, 1936

Mr. A. D. Wilder, State Director
Public Works Administration (California)
805 Washington Building
Los Angeles, California

Subject: PWA Docket Calif. 1223-R Hodges reservoir
dam strengthening, extension of time for
completion of contract

Dear Sir:

The City of San Diego, as Owner, and M. H. Golden as Contractor, hereby request the Federal Emergency Administration of Public Works for an extension of time for the completion of the construction of PWA Docket Calif. 1223-R Hodges reservoir dam strengthening and, in support of such application, allege as follows:

(a) That the name of the contractor and the type of work are as follows: M. H. Golden. Hodges dam strengthening.

(b) The date of execution of the contract between the Owner and the Contractor was March 25, 1936.

(c) The date of approval of the contract by the State Director PWA was March 27, 1936.

(d) The date the work on the contract started was March 27, 1936.

(e) The time of completion stated in the contract is two hundred and forty calendar days from March 27, 1936, the effective date of the contract, or November 22, 1936.

(f) The request for the extension of time is in anticipation of delay.

(g) The extension of time will have no effect whatsoever upon the seven items in the standard classification of project costs.

(h) The extension requested will not change the obligation of the surety under the contractor's performance bond as the bond specifically provides that changes may be effected without the consent of the surety and in addition the surety's consent and approval is endorsed upon this application.

(i) The penalty for non-completion within the time required in the contract is a deduction from the final payment to the contractor of the sum of twenty-five dollars (\$25.00) per day as liquidated damages for each day's delay after the expiration of the period for completion. The owner proposes to waive this provision to the extent of the additional time requested without condition.

(j) The reasons for the extension requested are as follows:

1. The contractor has been delayed by the inability of the designated employment service to furnish him with the required number of carpenters, reinforcing steel workers and other skilled workers.

2. The contractor has been delayed by the 130-hour monthly labor limitation and the approval for a 40-hour working week was not obtained until July 17, 1936 since which time the designated employment service is still unable to furnish the required number of skilled workers.

3. The contractor has been delayed on account of increase in excavation quantities which were required to be done by hand in compliance with specification requirements.

4. The contractor was delayed on account of increase in hand excavation for vertical frames between existing concrete buttresses which quantities were increased from about 300 cubic yards to about 600 cubic yards.

5. The contractor was delayed on account of increase from 80000 pounds to 200000 pounds of reinforcing steel furnished by the city, the cleaning of which required considerable additional time.

6. The contractor was delayed by an increase in the quantity of concrete chipping from about 9000 square feet to about 13000 square feet which required considerable additional time.

7. The contractor was delayed on account of the removal of some existing concrete struts which work had to be performed before certain concreting operations in connection with frame "A" as shown on the contract drawings could proceed to the top of the dam.

(k) The work is exceptionally complicated and difficult to perform. Its remoteness from the City of San Diego has been a distinct disadvantage in securing qualified men. This has been due to the fact that work in San Diego city proper has been plentiful.

(l) The extension of time requested is for an additional thirty-eight calendar days resulting in an extension of the completion date to and including the thirtieth day of December 1936.

Respectfully submitted,

THE CITY OF SAN DIEGO, CALIFORNIA

By R. W. Flack
City Manager

N. H. GOLDEN

By M. H. Golden

Approved and consented to:

MASSACHUSETTS BONDING AND INSURANCE COMPANY
Surety

By J. Donald B. Goldsmith
Attorney-in-fact

Date Nov. 10th 1936

FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS
1210 Hewes Building, San Francisco, Calif.

APPROVAL OF INCREASE OF MAXIMUM WORKING HOURS

Mr. Fred D. Pyle
Hydraulic Engineer
San Diego Water Department
524 F St.,
San Diego, California

PWA File No. Calif. 1223-R
Applicant: City of San Diego
Project: Hodges reservoir dam
Location: 32 miles from the
City of San Diego

The request for increase of maximum working hours on the above mentioned project having been duly considered by me, I find, determine and declare that special and unusual circumstances exist in this case which, in my judgment, make it impracticable and infeasible to require adherence to the maximum hours of work heretofore prescribed. Such special and unusual circumstances are as follows:

The Manager of the National Re-employment Service in this District, also the Secretary of the San Diego Building Trades Council, both certify that neither agency can supply a sufficient number of qualified skilled and unskilled workmen for the excess hours over and above the contract limitation of 130 hours per month.

An increase of maximum working hours is hereby approved for this project as follows:

1. The maximum working hours shall be
 - (a) eight (8) hours per day
 - (b) forty(40) hours per week
 - (c) not to exceed 160 hours per month
2. The said increased maximum shall apply to the following designated trades or occupations only:

All skilled and intermediate labor and common labor

As per your request of August 19th, 1936, this will also be a retroactive approval for all common labor from August 10th to Oct. 10, 1936.

3. The said increased maximum shall apply from October 10, 1936 to December 10, 1936.
4. The said increased maximum shall apply only to the work, contract or sub-contract identified as follows:

To the General Contractor, M. H. Golden and all Sub-contractors under him.

This approval has reference only to PWA requirements and does not have reference to provisions of local laws, if any, restricting hours of work. The interpretation and application of

any such local laws are matters concerning which no responsibility is assumed by the PWA.

This approval is conditioned upon the owner informing the affected principal contractor (unless the work is being done by force account) that the owner does not waive any rights it may have to liquidated damages in the event such contractor shall fail to complete the work within the time specified in the contract.

This approval may be withdrawn by the State Director, PWA at any time upon determination by him that the conditions warranting such increase of maximum working hours have ceased to exist.

Dated: November 12, 1936.

A. D. Wilder
State Director PWA (California)

For the Administrator

FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS
1210 Hewes Building, San Francisco, Calif.

APPROVAL OF INCREASE OF MAXIMUM WORKING HOURS

To: Mr. Fred D. Pyle
Hydraulic Engineer
San Diego Water Department
524 F St.,
San Diego, California

PWA File No.
Applicant:
Project:

Location:

Calif. 1223-R
City of San Diego
Hodges reservoir
dam
32 miles from the
City of San Diego

The request for increase of maximum working hours on the above mentioned project having been duly considered by me, I find, determine and declare that special and unusual circumstances exist in this case which, in my judgment, make it impracticable and infeasible to require adherence to the maximum hours of work heretofore prescribed. Such special and unusual circumstances are as follows:

The Manager of the National Re-Employment Service in this District, also the Secretary of the San Diego Building Trades Council, both certify that neither agency can supply a sufficient number of qualified skilled and unskilled workmen for the excess hours over and above the contract limitation of 130 hours per month.

An increase of maximum working hours is hereby approved for this project as follows:

1. The maximum working hours shall be
 - (a) eight (8) hours per day
 - (b) forty (40) hours per week for each and every week
 - (c) _____ hours per month.
2. The said increased maximum shall apply to the following designated trades or occupations only:

All skilled and intermediate labor and common labor

As per your request of August 19th, 1936, this will also be a retroactive approval for all common labor from August 10th to October 10th, 1936.

3. The said increased maximum shall apply from October 10, 1936 to December 10, 1936.

NOTE: This authorization is to be substituted for that issued to you under date of November 12th, 1936.

4. The said increased maximum shall apply only to the work, contract or sub-contract identified as follows:

To the General Contractor, M.H. Golden and all Sub-contractors under him.

3-12-37
copy/p

This approval has reference only to PWA requirements and does not have reference to provisions of local laws, if any, restricting hours of work. The interpretation and application of any such local laws are matters concerning which no responsibility is assumed by the PWA.

This approval is conditioned upon the owner informing the affected principal contractor (unless the work is being done by force account) that the owner does not waive any rights it may have to liquidated damages in the event such contractor shall fail to complete the work within the time specified in the contract.

This approval may be withdrawn by the State Director PWA at any time upon determination by him that the conditions warranting such increase of maximum working hours have ceased to exist.

Dated: November 18th, 1936

A. D. Wilder
State Director PWA (California)

For the Administrator

CONTRACT CHANGE NO. 2-1-2

To City of San Diego, c/o Fred D. Pyle
524 F Street San Diego,
San Diego County, California

Docket No. Calif. 1223 R
Type of
Project Dam repairs
Symbol No. 42.133
Contract No. 1

Contractor M. H. Golden

Receipt is acknowledged of your communication, dated 12-24-36,
requesting approval of the following contract change:

Classification (1)	Latest Approved Estimate (2)	From (3)	Scheduled Cost	
			This Change (4)	To (5)
1. Preliminary	2.71	2.71		2.71
2. Land and right-of-way	0	0		0
3. Construction	130,612.50	130,612.50	+1,636.32	132,248.82
4. Engineering	12,000.00	12,000.00		12,000.00
5. Legal and administrative	300.00	300.00		300.00
6. Interest	0	0		0
7. Miscellaneous	5,880.14	8,880.14	-1,636.32	4,243.82
Total	148,795.35	148,795.35		148,795.35

Calendar days: None additional New completion date 12-30-36

Description of change: Additional cost to project \$1,636.32
The cost of which is contained in eight separate items. /see
details attached.

I hereby certify that this is a full, true, correct and conformed
copy of the original change order executed by the State Director
on the date indicated.

C. W. Schruth, Engineer

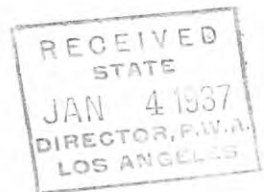
Dated 12/31/36

This contract change is approved. This change is technically and
economically sound, and proper provision for work has been es-
tablished. The Public Works Administration, in approving any
change, assumes no obligation to finance the cost thereof, except
to the extent to which the same may be paid out of funds expressly
contracted for by it, and specifically makes no representation
concerning any additional funds necessitated by any approved
change.

A. D. Wilder, State Director

Date: December 29, 1936

December 24, 1936



Mr. A. D. Wilder
State Director PWA (Calif.)
805 Washington Building
Los Angeles, California

Subject: PWA Docket Calif. 1223-R Hodges Reservoir
Dam Strengthening Change Order No. 2

Dear Sir:

In accordance with the relative stipulations of the Grant Agreement and Administrative Order #11 Supplement 1, submitted herewith for your consideration and approval are the following detail changes and revisions to the plans and specifications of Hodges Reservoir Dam Strengthening, P.W.A. Docket Calif. 1223-R, M. H. Golden, Contractor, not included in the unit price bid in the schedule and which the City of San Diego desires to have formally entered in the contract documents.

1. Removal of 7 existing struts about elevation 298 shown on sheet 2a contract drawings WD-464, due to interference with construction of frame "A". Additional cost of removing 7 struts @ \$80 \$560.00
2. Provide four 12" x 12" drains under spillway apron where in soft material to prevent uplift pressure. Agreed price 82.50
3. Provide drain tiles through solid portion of vertical frames A, B, C and D to provide drainage. 76 feet @ \$0.30 per foot 22.80
4. Replace stairway contiguous to buttress #16 to permit taking of temperature measurement in buttress near bottom. Agreed price 202.00
5. Grout leak at east end of dam between buttresses 24 and 25 to stop percolation. Agreed price 104.51
6. Remove fill against uphill side of buttress #23 required by the California State Engineer. Agreed price 99.86
7. Place 25.75 yards of concrete on upstream side of buttress #24 to prevent failure in case of cracking of buttress. Required by California State Engineer. 545.90
25.75 cubic yards @ \$21.20 per cubic yard 18.75
8. Re-make signs required by PWA. Agreed price

Mr. A. D. Wilder

-2-

12/24/36

The foregoing change items summarize to an additional cost to the general contract price of \$1,636.32 which amount and work and material involved are believed to be financially and physically equitable to all concerned. The funds for the payment of the foregoing are provided in the contingency item of \$5,880.14 as set up in the latest approved docket budget estimate, being Change Order No. 1-1-1.

Signed copy of the proposal and agreement to perform the foregoing work by Contractor M. H. Golden is attached hereto. The performance and materialmens bond and the contract documents waive the notice and consent of the surety to make the changes as proposed and the general contractor advises that no additional time will be required for contractual performance.

The authority for making these changes is embodied in Article SEVENTH and paragraphs 13 and 14 of the contract specifications.

It is indicated that there will be no extra expenditures by the City of San Diego for legal, architectural or engineering services or for extra supervision or lands and rights-of-way.

Your consideration and approval of the foregoing in accordance with the project grant agreement with the Federal Emergency Administration of Public Works is requested.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

FB/p
encl.

H. H. GOLDEN
General Contractor
San Diego, California

December 23, 1936

The City of San Diego
Mr. Fred W. Lyle
Hydraulic Engineer
524 F Street
San Diego, California

RECEIVED
STATE
JAN 4 1937
DIRECTOR, P.W.A.
LOS ANGELES

Dear Sir:

In accordance with the provisions of my contract for the construction of Hodges Reservoir dam strengthening under P.W.A. Contract Calif. 1223-K, I quote you on the following additional work:

1. Remove 7 existing struts about elevation 292 shown on sheet 2a contract drawing 12-464 @ \$0.00 each		560.00
2. Provide 4-12" x 12" drains under spillway apron		82.50
3. Provide 76 feet drain tiles thru solid portion of vertical frames A, B, C and D @ 30¢ per foot		22.80
4. Replace stairway contiguous to buttress #16		202.00
5. Grout leak at east end of dam between buttresses 24 and 25		
Excavating labor	62.69	
Compressor Rental	9.00	
Grouting Equipment	5.00	
Grouting - Pipes	3.00	
Industrial Insurance and Public Liability 17.229%	10.80	
Supervision	4.52	
Overhead & Profit	<u>9.50</u>	104.51
6. Remove fill against uphill side of buttress #23:		
Labor	73.75	
Industrial Insurance and Public Liability 17.229%	12.70	
Supervision	4.33	
Overhead & Profit	<u>9.08</u>	99.86
7. Place 26.75 cubic yards of concrete on upstream side of buttress #24 @ \$21.20 per cubic yard		566.90
8. Remake P.W.A. Signs		<u>18.75</u>
	Total	21636.32

No additional time will be required on account of the above additional work.

Very truly yours,
H. H. GOLDEN (Signature)
H. H. GOLDEN

December 31, 1936

Federal Emergency Administration
of Public Works
Washington, D.C.

Attention: Chas J. Maxcy, Chief Accountant

Subject: PWA Docket Calif. 1223-R Hodges
Reservoir Dam Strengthening, grant
allowance on personnel and
miscellaneous items

Dear Sir:

With reference to permanent and temporary personnel employed in connection with PWA projects, the following is submitted for your information and consideration:

The City of San Diego maintains the Division of Development and Conservation as a branch of its Water Department. The funds for maintenance of the Division of Conservation are provided for from budget funds made available by the Council from revenues of the Water Department. The Division of Development is maintained only if and when new construction work is undertaken such as building dams, pipelines and for major structure repairs or similar work. When these works are completed practically the entire staff is terminated. These employees are therefore not of permanent status such as are employees in the Division of Conservation or other regular City employees.

In connection with PWA Docket Calif. 1223-R Hodges Reservoir Dam Strengthening, the administrative staff of the San Diego office of the Division of Development would have been materially reduced if the project had not been undertaken. Only a small part of the time of the City's Hydraulic Engineer Fred D. Pyle, Assistant Engineer P. Beermann, Draftsman N. Coote, Secretary-Stenographer E. I. Fraser and Senior Stenographer F. T. Patten has been charged against the project. The remaining employees were specifically employed for the project. Inspectors W. P. Bauer and F. Brachmann, and Engineering-Clerk C. B. Hough will be terminated December 31, 1936 coincident with the completion of the project. Resident Engineer L. H. Hill will be terminated unless new construction work is undertaken.

Only a small proportion of the salaries of the administrative staff is provided for from budget operating funds, the remainder being taken from bond funds or special funds allocated for specific construction work. For the year 1936-1937 only 50 percent of the Hydraulic Engineer's salary; 25 percent of the Assistant Engineer's salary; 50 percent of the Secretary-Stenographer's salary and no portion of the Senior Stenographer's salary was provided for in the annual budget.

Under charter regulations all employees, whether temporary or permanent, are under Civil Service and no importance as to permanency of position attaches to Civil Service appointments if funds for work are not available.

Prior to actual construction work on the Hodges project, the City spent for studies and stress investigations upwards of \$10,000 which resulted in the design used in the actual Hodges dam strengthening work. None of this expense has been charged as a cost to the project and no grant has been requested thereon. Furthermore, no portion of the indirect expenditures such as portion of salaries of the Water Department Accountant, the City Attorney's office, City Auditor's office, City Treasurer's office, etc., has been charged to the project.

The cost of maintaining all the Division of Development forces which have been directly engaged either part or whole time on PWA Docket Calif. 1223-R is presumed to be a proper charge to the project and in view of the facts set out it is requested that the 45 percent grant allocation be allowed on the entire cost of the engineering and direct supervision.

Enclosed is list of employees on the project and their tenure with this Department.

Please note that the charges for testing made by the City's testing laboratory include only payment for the actual time of the City's testing engineer and assistant for the time spent on Hodges reservoir dam strengthening tests and do not include any other expenses such as light, rent, heat, etc.

The telephone calls charged and service charge pertain only to the Hodges reservoir dam strengthening work and do not include any personal calls nor calls for other City business. The City of San Diego maintains another telephone for its regular City business at the dam.

The charge for automobile rental from the Public Works Department of \$1.25 per day is very nominal for the use of a car and is very materially under the prevailing commercial rates.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p

PWA Docket Calif. 1223-R

Hodges Reservoir Dam Strengthening - Personnel

NAME	CLASSIFICATION	SERVICE	
		Appointed	To be terminated
Beermann, P.	Assistant Engineer	10-8-29	
Bauer, W. P.	Inspector	4-15-36	12-31-36(a)
Brachmann, F.	Inspector	2-1-36	12-31-36(b)
Coote, Norman F.	Sr. Draftsman	2-14-28	
Fraser, E. I.	Secretary-Steno.	8-1-27	(c)
Hill, L. H.	Resident Engineer	12-3-31	12-31-36(b)
Hough, Carl B.	Engineering-Clerk	4-1-36	
Pyle, Fred D.	Hydraulic Engineer	10-10-28	
Patten, F. T.	Senior Steno.	11-23-26	

(a) Did not work for Water Department prior to this date.

(b) Previous work with Water Department on El Capitan Dam Services terminated.

F. Brachmann February 28, 1935
C. Hough January 7, 1935

(c) Previous regular work with Water Department on Otay Reservoir-San Diego Second Main Pipe Line. Services terminated March 3, 1931.

RELEASE OF CLAIMS

WHEREAS, heretofore, on, to-wit, the 24th day of March, 1936, the undersigned M. H. Golden entered into and executed a certain contract with The City of San Diego, California, a municipal corporation, whereby the undersigned as contractor for the consideration therein set forth, agreed to build, erect and construct for said City a certain public work, commonly known and referred to as "Hodges Reservoir Dam Strengthening" (Federal Public Works Project No. Calif. 1223-R); a true copy of said contract being on file in the office of the City Clerk of said City, bearing official Document No. 297063; and

WHEREAS, said work has been completed to the satisfaction of the Hydraulic Engineer in charge thereof on behalf of said City, and said work has been accepted on behalf of said City by its Council, such acceptance being evidenced by Resolution of said Council No. 65329, dated December 29, 1936; and

WHEREAS, under the terms of said contract it is provided as follows:

"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, for completed work, classified and computed on the basis of the items and unit prices named in the contract. The partial payments herein agreed to be made to the contractor shall not include material and equipment stored on project sites. 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 twenty-five per cent will be made, and from the remainder a further deduction will be made of all amounts due to the City of San Diego from the contractor for supplies or materials furnished or services rendered and any other amounts that may be due to The City of San Diego 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. No payments will be made to the contractor until satisfactory receipts for payment as provided in Clause 12 of PWA 'Construction Regulations' of all labor and materials supplied during the preceding month shall be shown to the PWA Engineer-Inspector, as required. The twenty-five per cent deducted as above set forth shall not become due and payable until the completion of the work to the satisfaction of the Engineer and its acceptance by The City of San Diego and until release shall have been executed and filed as hereinafter provided, and until five days shall have elapsed after the expiration of the period within which liens may

be filed under the provisions of Title 4 part 3 of the Code of Civil Procedure of the State of California. In five per cent shall be and become the sole and absolute property of The City of San Diego to the extent necessary to repay to The City of San Diego 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 the City of San Diego, under or by virtue of the contract, shall have been executed by the contractor, and when five days shall have elapsed after the expiration of the period within which liens may be filed, as hereinabove provided, final payment will be made, at such time and in such manner as provided by law, of any balance due, including the percentage withheld as above stated, or such portion thereof as may be due the contractor." and

WHEREAS, said City of San Diego and its Hydraulic Engineer have prepared and filed the final estimate, as provided for in the foregoing provision of said contract, which said final estimate (inclusive of amounts heretofore deducted from prior estimates), is in the sum of thirty-three thousand, seven hundred eighty-four and 51/100 dollars (\$33,784.51);

NOW, THEREFORE, in consideration of the payment to said contractor of said sum of thirty-three thousand, seven hundred eighty-four and 51/100 dollars (\$33,784.51), and in consideration of the payment heretofore of various progress estimates previously approved and filed by the Hydraulic Engineer of said City, under the terms of said contract, and in further consideration of the acceptance of said work and the payment therefor, the undersigned M. H. Golden, contractor under said contract (Document No. 297063), does hereby release said The City of San Diego and any and all officers, agents or employees of said City, from all claims or demands accrued and now existing, or hereafter arising under or by virtue of the terms, or any one or more thereof, either express or implied, of that certain contract dated March 24, 1936, between The City of San Diego, a municipal corporation, and said M. H. Golden, for the construction, erection, completion and installation of the Hodges Reservoir Dam Strengthening, a copy of which said contract is on file in the office of the City Clerk of said City, and bears official Document No. 297063.

Dated this 3rd day of February, 1937.

M. H. Golden

3-29-37
copy/p

STATE OF CALIFORNIA)
) SS
County of San Diego)

On this 3 day of February, A.D. Nineteen Hundred and Thirty-seven, before me, Fred W. Sick, a Notary Public in and for said County and State, residing therein, duly commissioned and sworn, personally appeared M. H. GOLDEN, known to me to be the person described in and whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal in said county the day and year in this certificate first above written.

Fred W. Sick
Notary Public in and for the County
of San Diego, State of California

I hereby approve the form of the within Release of Claims this 3rd day of February, 1937.

D. L. Ault
City Attorney
By H. B. Daniel
Assistant City Attorney

PERIODICAL ESTIMATE FOR PARTIAL PAYMENT NO. 9, DOCKET NO. Calif. 1223-R
FINAL

For the period December 1, 1936 to December 28, 1936, inclusive.

Location Hodges Dam, San Diego State California
County San Diego

Borrower's name and address The City of San Diego
San Diego, California

Contractor's name and address M. H. Golden
Bank of America Building, San Diego

Type of project Dam
strengthening
Symbol No. 42,133
Contract No. 1
Estimated cost, \$ 130,612.50
Contract price, \$ Unit

Item No.	Units or lump sum	ESTIMATED NUMBER OF UNITS (Quantity)			Uncompleted	Estimated physical percent completed	
		Detailed estimate	This estimate	To date		Period	To date
1	cu. yd.	300	5.34	615.34	over-run 315.34	1.8	205.1
2	cu. yd.	50	0	0	0	0	0
3	cu. yd.	100	0	91.40	8.60	0	91.4
4	cu. yd.	200	0	367.70	over-run 167.7	0	183.8
5	cu. yd.	2,500	118.94	2,428.94	71.06	4.8	97.2
6	cu. yd.	950	141.41	1,126.41	over-run 176.41	14.9	118.6
7	cu. yd.	150	0	74.00	76.00	0	49.3
8	cu. yd.	600	0	408.45	191.55	0	68.1
9	bl.	6,500	397.00	6,107.00	393.00	6.2	94.0
10	lb.	80,000	17,424.00	217,424.00	over-run 137,424.00	21.8	271.8
11	lb.	550,000	3,005.00	503,005.00	46,995.00	0.6	91.5
12	lb.	55,000	8,071.00	60,571.00	over-run 5,571.00	14.6	110.1
13	lb.	40,600	2,077.00	40,677	over-run 77.00	5.1	100.2
14	lin. ft.	1,700	453.69	2,293.69	over-run 593.69	26.7	134.9
15	sq. ft.	9,300	293.63	13,913.63	over-run 4,613.63	3.1	149.6
16	cu. ft.	1,650	148.83	1,571.83	78.17	9.0	95.2
17	drillhole	575	136.00	716.00	over-run 141.00	23.6	124.5
18	lin. ft.	500	0	203.80	296.20	0	40.8
19	lin. ft.	1,000	0	816.00	184.00	0	81.6

Total physical percent complete,

4.1 100

Item No.	Unit price	AMOUNT				Estimated monetary percent completed	
		Detailed estimate	This estimate	To date	Unused balance	Period Percent	To date Percent
1	5.35	1,605.00	28.57	3,292.07	- 1,687.07	1.8	205.1
2	5.35	267.50	0	0	267.50	0	0
3	4.00	400.00	0	365.60	34.40	0	91.4
4	3.80	760.00	0	1,397.26	- 637.26	0	183.8
5	18.20	45,500.00	2,164.71	44,206.71	1,293.29	4.8	97.2
6	21.20	20,140.00	2,997.89	23,879.89	- 3,739.89	14.9	118.6
7	13.00	1,950.00	0	962.00	988.00	0	49.3
8	7.30	4,380.00	0	2,981.68	1,398.32	0	68.1
9	2.86	18,590.00	1,135.42	17,466.02	1,123.98	6.2	94.0
10	0.015	1,200.00	261.36	3,261.36	- 2,061.36	21.8	271.8
11	0.04	22,000.00	120.20	20,120.20	1,879.80	0.6	91.5
12	0.07	3,850.00	564.97	4,239.97	- 389.97	14.6	110.1
13	0.05	2,030.00	103.85	2,033.85	- 3.85	5.1	100.2
14	0.90	1,530.00	408.32	2,064.32	- 534.32	26.7	134.9
15	0.25	2,325.00	73.42	3,478.42	- 1,153.42	3.1	149.6
16	1.70	2,805.00	253.01	2,672.11	132.89	9.0	95.2
17	0.60	345.00	81.60	429.60	- 84.60	23.6	124.5
18	0.55	275.00	0	112.09	162.91	0	40.8
19	0.66	660.00	0	538.56	121.44	0	81.6
Totals,		130,612.50	8,193.31	133,501.70	- 2,889.20	6.3	102.2
Total—Change orders,			1,636.32	1,636.32	none	100	100
Materials stored, if allowed,			none				
Grand total,			9,829.63	135,138.02	- 2,889.20	7.5	103.5

Section 3 of the Emergency Relief Appropriation Act of 1932 reads as follows:

Section 9 of the Emergency Relief Appropriation Act of 1935, reads as follows:

"Any person who knowingly and with intent to defraud the United States makes any false statement in connection with any application for any project, employment, or relief aid under the provisions of this joint resolution, or diverts, or attempts to divert, or assists in diverting for the benefit of any person or persons not entitled thereto, any moneys appropriated by this joint resolution, or any services or real or personal property acquired thereunder, or who knowingly, by means of any fraud, force, threat, intimidation, or boycott, deprives any person of any of the benefits to which he may be entitled under the provisions of this joint resolution, or attempts so to do, or assists in so doing, shall be deemed guilty of a misdemeanor and shall be fined not more than \$2,000 or imprisoned not more than 1 year, or both."

Section 35 of the Criminal Code, as amended, provides a penalty of not more than \$10,000 or imprisonment of not more than 10 years, or both, for knowingly and willfully making or causing to be made "any false or fraudulent statements * * * or use or cause to be made or used any false * * * account, claim, certificate, affidavit, or deposition, knowing the same to contain any fraudulent or fictitious statement * * *" relating to any matter within the jurisdiction of any governmental department or agency.

CERTIFICATION OF THE CONTRACTOR OR HIS DULY AUTHORIZED REPRESENTATIVE

To the best of my knowledge and belief, I certify that all items, units, quantities, and prices of work and material shown on the face of Sheets Nos. 1 of this Periodical Estimate are correct; that all work has been performed and materials supplied in full accordance with the terms and conditions of the corresponding construction contract documents between The City of San Diego and

(Borrower's name)

M. H. Golden
(Contractor's name)

, dated _____, approved by the State Director, and all change orders approved by the State Director; that the following is a true and correct statement of the contract account up to and including the last day of the period covered by this estimate and that no part of the "total amount payable this estimate" has been received:

561A

(a) Total due based on the <u>unit price contract</u> / <u>lump sum contract</u>	\$ 133,501.70
(b) Total additions beyond scope of contract	1,636.32
(c) Total earned, original contract and additions (sum of a and b)	135,138.02
(d) Total percentage retained including this estimate <u>25</u>	33,784.51
(e) Total due on account of original contract plus additions and minus retained percentage	101,353.51
(f) Total previously received (from last estimate)	93,981.30
(g) Balance due this payment on contract and additions	\$ 7,372.21
(h) Advance on materials stored this period	0
(i) Total amount payable this estimate	\$ 7,372.21

I further certify that all just and lawful bills against M. H. Golden (Contractor's name) for labor, material and expendable equipment employed in the performance of said contract have been paid in full in accordance with *Paragraph 11, 12, P. W. A. Construction Regulations.

Contractor M. H. Golden Place Bank of America Bldg. San Diego, Calif.
 By M. H. Golden
 Title _____ Date December 28, 1936

CERTIFICATE OF THE BORROWER'S SUPERVISING ENGINEER OR ARCHITECT IN CHARGE

I certify that I have verified this Periodical Estimate, and that to the best of my knowledge and belief it is a true and correct statement of work performed and material supplied by the contractor, and that the contractor's certified statement of his account and the amount due him is correct and just, and that all work and material included in this Periodical Estimate have been performed and supplied in full accordance with the terms and conditions of the corresponding construction contract documents and change orders approved by the State Director.

Name Fred P. Pyle Place San Diego, California
 Title Hydraulic Engineer Date December 28, 1936

CERTIFICATE OF THE PUBLIC WORKS ADMINISTRATION ENGINEER INSPECTOR IN CHARGE

I certify that I have verified this Periodical Estimate, and that to the best of my knowledge and belief it is a true and correct statement of work performed and material supplied by the contractor, ~~that I have in my possession satisfactory evidence of payment by the contractor of all just and lawful bills against him for labor, material, and expendable equipment employed in the performance of his contract in full accordance with *Paragraph 11, 12, P. W. A. Construction Regulations,~~ that all work and material included in this Periodical Estimate have been inspected by me or my duly authorized assistants and have been found to comply with the terms and conditions of the construction contract documents and change orders approved by the State Director. *

Name T. V. Cooper Place San Diego, California
 Title Resident Engineer Inspector Date December 28, 1936

* Strike out number not applicable.

REMARKS—MATERIALS STORED

3-29-37
copy/p

CITY OF SAN DIEGO
Water Department

HODGES RESERVOIR DAM STRENGTHENING PWA DOCKET CALIF. 1223 R
The City of San Diego, California

To M. H. Golden
531 Bank of America Building, San Diego, California

Contract Document No. 297063 dated March 24, 1936 for
construction of Hodges Reservoir Dam Strengthening
PWA Docket Calif. 1223-R

Estimate for December 1936. Estimate No. 9-F I N A L

For work, material or services as stated in detail following:

Hodges Reservoir Dam Strengthening Fund
Resolution No. 63453 \$ 7,372.21

I hereby certify that the above claim and the items, amounts and statements as therein set out are a correct, legal and true claim against the city of San Diego for the full amount for which the same is presented and the items therein contained were furnished to said city; that the said amount accrued as set forth therein, is due, and no part of same has been paid.

M. H. Golden Claimant

By _____ Title _____

Field computations by L. H. Hill and C. B. Hough

Field checked by L. H. Hill checked by P. Beermann

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.

Fred D. Pyle
Hydraulic Engineer

Estimate No. 9 FINAL

Item No.	Work or Material	Quantity and Price	Amount
1.	Excavation Class 1 615.34 cubic yards @ \$5.35 per cubic yard		\$ 3,292.07
2.	Excavation Class 2 - none		0
3.	Excavation Class 3, cutoff excavation in spillway 91.4 cubic yards @ \$4.00 per cubic yard		365.60
4.	Excavation Class 4 in spillway 367.7 cubic yards @ \$3.80 per cubic yard		1,397.26
5.	Concrete Class 1 in columns and struts 2,428.94 cubic yards @ \$18.20 per cubic yard		44,206.71
6.	Concrete Class 2 in diagonal strengthening and top anchorage 1,126.41 cubic yards @ \$21.20 per cubic yard		23,879.89
7.	Concrete Class 3 in footings 74 cubic yards @ \$13.00 per cubic yard		962.00
8.	Concrete Class 4 in spillway 408.45 cubic yards @ \$7.30 per cubic yard		2,981.68
9.	Cement in place in the work 6,107 barrels @ \$2.86 per barrel		17,466.02
10.	Cleaning and placing reinforcing steel in the work furnished by the city 217,424 pounds @ \$0.015 per pound		3,261.36
11.	Reinforcing steel furnished by contractor in place in the work 503,005 pounds @ \$0.04 per pound		20,120.20
12.	Steel tie bars in place in the work including nuts and turnbuckles 60,571 pounds @ \$0.07 per pound		4,239.97
13.	Steel plates in place in the work 40,677 pounds @ \$0.05 per pound		2,033.85
14.	Drilling holes thru concrete with concussion drill, various sizes 2,293.69 linear feet @ \$0.90 per linear foot		2,064.32
15.	Chipping concrete surface 13,913.63 square feet @ \$0.25 per square foot		3,478.41

3-29-37
copy/P

Estimate No. 9 FINAL

Item No.	Work or Material	Quantity and Price	Amount
16.	Chipping keyways 1571.83 cubic feet @ \$1.70 per cubic foot		2,672.11
17.	Grouting 716 drill holes @ \$0.60 each		429.60
18.	Drilling 1-1/2 inch anchor holes in spillway 203.8 linear feet @ \$0.55 per linear foot		112.09
19.	Drilling 2-1/2 inch or larger anchor holes under footings of vertical columns 816 linear feet @ \$0.66 per linear foot		538.56
Change Order No. 2			
1.	Removal of 7 existing struts about elevation 298 shown on sheet 2a contract drawing WD-464 due to interference with construction of frame "A". Additional cost of removing 7 struts @ \$80		560.00
2.	Provide four 12" x 12" drains under spillway apron where in soft material to prevent uplift pressure. Agreed price		82.50
3.	Provide drain tiles through solid portion of vertical frames A, B, C and D to provide drainage. 76 feet @ \$0.30 per foot		22.80
4.	Replace stairway contiguous to buttress #16 to permit taking of temperature measurement in buttress near bottom. Agreed price		202.00
5.	Grout leak at east end of dam between buttresses 24 and 25 to stop percolation. Agreed price		104.51
6.	Remove fill against uphill side of buttress #23 required by California State Engineer Agreed price		99.86
7.	Place 25.75 yards of concrete on upstream side of buttress #24 to prevent failure in case of cracking of buttress. Required by California State Engineer 25.75 cubic yards @ \$21.20 per cubic yard		545.90 18.75
8.	Remake signs required by PWA. Agreed price		

Estimate No. 9 FINAL

Gross earnings to date	\$ 135,138.02
Less retained 25 per cent.....	33,784.51
Net earnings to date.....	101,353.51
Less previous payments.....	93,981.30
Balance due by this claim.....	7,372.21

Correct as to quantities delivered, prices, deductions and computations.

L. H. Hill

Checked by P. Beermann

3-29-37
COPY/P

CITY OF SAN DIEGO
Water Department

HODGES RESERVOIR DAM STRENGTHENING PWA DOCKET CALIF. 1223 R
The City of San Diego, California

To: M. H. Golden,
531 Bank of America Building, San Diego, California

Contract Document No. 297063 dated March 24, 1936 for
construction of Hodges Reservoir Dam Strengthening,
PWA Docket Calif. 1223-R

Payment of Holdback

Hodges Reservoir Dam Strengthening Fund
Resolution No. 63453 \$ 33,784.51

I hereby certify that the above claim and the items, amounts
and statements as therein set out are a correct, legal and
true claim against the city of San Diego for the full amount
for which the same is presented and the items therein contained
were furnished to said city; that the said amount accrued as
set forth therein, is due, and no part of same has been paid.

M. H. Golden Claimant

By _____ Title _____

Approved D. L. Ault
City Attorney

By H. B. Daniel
Assistant

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.

Fred D. Pyle, Hydraulic Engineer

Appropriation
 THE UNITED STATES, Dr.,
 To The City of San Diego, c/o Fred O. Pyle, Hydraulic
 Engineer
 Address 524 F Street, San Diego, California

PAID BY
 (For use of Paying Officer)

Project Hodges Reservoir Dam Strengthening Project Symbol No. 42.133

Offer accepted Dec. 31, 1935 Plans, specifications, and estimates approved Feb. 14, 1936

Requisition for final payment of grant based on 45 percent of the actual cost of the project, but in no case to be in excess of the grant allotted.

Actual cost of project	Loan	Grant	45% of total cost	Previous payments	Amount of this payment
\$ 144,456.45	\$ 0	\$ Max. allowable 65,005.40	65,005.40	\$ 52,078.37	\$ 12,927.03

I CERTIFY that the above is a true statement of the cost of the project above mentioned, in accordance with the plans and specifications heretofore approved therefor under the above offer and acceptance covering the grant, and in amounts stated above; that the work upon said project has been performed in accordance with said plans and specifications; that no claim has been presented to or payment made by the United States for the items for which payment is claimed; and that these and all other conditions precedent to the payment of the grant imposed by the terms of the above-mentioned offer and acceptance have been met and performed.

Payee The City of San Diego
 Per R.W. Flack Title City Manager

I CERTIFY that the workmanship and materials covered by this requisition have been inspected by me and conform to the engineering and architectural requirements of the plans and specifications.

Engineer Inspector.

Approved: _____
 State Director.

Approved: _____
 State Engineer Inspector.

(Additional statements by Department, Bureau, or Establishment, if deemed necessary)	(Accounting classification)	(Payee will NOT use this space)	
		Differences	
		Account verified; correct for	\$
		(Signature or initials)	

MEMORANDUM

Paid by check No. _____, dated _____, 19____, for \$ _____ {On Treasurer of the United States in favor of the payee named above.

Penalty for False Certification.—Section 35 of the Criminal Code, as amended provides a penalty of not more than \$10,000 or imprisonment of not more than 10 years, or both, for knowingly and willfully making or causing to be made "any false or fraudulent statements . . . or use or cause to be made or used any false . . . account, claim, certificate, affidavit, or deposition, knowing the same to contain any fraudulent or fictitious statement . . . relating to any matter within the jurisdiction of any governmental department or agency."

MEMORANDUM

266A

Approved: _____ State Director

Approved: _____ State Engineer Inspector

Approved: _____ Engineer Inspector

(Signature or initials) _____ Account verified; correct for _____

Differences _____ (Payee will NOT use this space)

(Additional statements by Department, Bureau, or Establishment, if deemed necessary)

(Accounting classification)

I certify that the workmanship and materials covered by this requisition have been inspected by me and conform to the engineering and architectural requirements of the plans and specifications.

Per R. W. Black Title City Manager

Payee The City of San Diego

I certify that the above is a true statement of the cost of the project above mentioned, in accordance with the plans and specifications heretofore approved therefor under the above offer and acceptance covering the grant, and in amounts stated above; that the work upon said project has been performed in accordance with said plans and specifications; that no claim has been presented to or payment made by the United States for the items for which payment is claimed; and that these and all other conditions precedent to the payment of the grant imposed by the terms of the above-mentioned offer and acceptance have been met and performed.

Actual cost of project	Loan	Grant	Total cost	Previous payments	Amount of this payment
\$111,456.75	0	\$65,005.40	\$65,005.40	\$52,078.37	\$12,927.03
		Max. allowable			

Requisition for final payment of grant based on 45 percent of the actual cost of the project, but in no case to be in excess of the grant allotted.

Offer accepted Dec. 31, 1935

Plans, specifications, and estimates approved Feb. 11, 1936

Project Symbol No. 45-133

Project Hobbs Reservoir Dam Strengthening

To the City of San Diego, California

Address 251 F Street, San Diego, California

Engineer Frederic E. Rife, Hydraulic

CERTIFICATE OF PURPOSES AND STATEMENT OF PROJECT COSTS

Requisition No. 4

Docket No. Call 1223-R

(APPLICANT DO NOT USE)

Name of applicant The City of San Diego

Address City Hall, San Diego, California

Date Jan. 5, 1937

O. P. No. 1937

The following is the status of the above project as of the dates indicated. The funds requisitioned on the accompanying form, P. W. C. A. 21-5 (21-B, 21-C, or 22) will be expended for the purposes shown in column 4, subject to changes approved by the Federal Emergency Administration of Public Works.

CERTIFICATE OF APPLICANT

The applicant certifies that the purpose or purposes stated herein are included within the purposes set forth in the approved application and estimated cost of the project, except as the same shall have been revised, amended, modified, or otherwise changed and approved. The applicant further certifies that the funds now requested, when advanced, will be used for the purpose or purposes stated in column 4 on the reverse of this form, and that all information contained in this P. W. A. Form 168 is true, correct, and complete.

Subscribed and sworn to before me this 5th day of Jan. 1937

Address City Hall, San Diego, California

Type of project Dam Strengthening Date Jan. 5 1937 O. P. No. _____
(See reverse for instructions pertaining to entries in columns shown below)

The following is the status of the above project as of the dates indicated. The funds requisitioned on the accompanying form, P. W. C. A. 21-C will be expended for the purposes shown in column 4, subject to changes approved by the Federal Emergency Administration of Public Works. 103

CLASSIFICATION (1)	LATEST APPROVED ESTIMATE (2)	PREVIOUS P. W. A. GRANT-LOAN REQUISITIONS OR PAYMENTS (3)	THIS REQUISITION (4)	COSTS INCURRED AS OF <u>12-31-36</u> (5)	AMOUNT DISBURSED AS OF <u>12-31-36</u> (6)
1. PRELIMINARY EXPENSES	2.71			2.71	2.71
TOTALS	2.71			2.71	2.71
2. LANDS, RIGHTS-OF-WAY, AND EASEMENTS					
3. CONSTRUCTION	132,248.82	52,078.37	12,927.03	135,607.07	101,812.66
4. ENGINEERING, ETC.:					
Engineering Fees	12,000.00				
Architectural Fees					
Applicant's Forces				8,171.96	7,806.59
Miscellaneous				452.07	386.44
TOTALS	12,000.00			8,624.03	8,193.03
5. LEGAL, ADMIN., ETC.:					
Legal Fees					
Legal Costs	300.00				
Admin. and Overhead				171.86	139.46
TOTALS	300.00			171.86	139.46
6. INTEREST					
7. MISCELLANEOUS	4,243.82			50.78	46.30
GRAND TOTALS	148,795.35	52,078.37	12,927.03	144,456.45	110,194.16

FUNDS RECEIVED AND DISBURSED

	APPLICANT	P. W. A. LOAN	P. W. A. GRANT	TOTAL
Funds required and allotted	99,255.47		52,078.37	151,333.84
Funds deposited and source	99,255.47		52,078.37	151,333.84
Funds disbursed, per column 6, above				110,194.16
Balance in Construction Account—Applicant's books				41,139.68
Total outstanding checks				7,791.16
Balance in Construction Account—Depository's books				48,930.84

CERTIFICATE OF APPLICANT

The applicant certifies that the purpose or purposes stated herein are included within the purposes set forth in the approved application and estimated cost of the project; except as the same shall have been revised, amended, modified, or otherwise changed and approved. The applicant further certifies that the funds now requested, when advanced, will be used for the purpose or purposes stated in column 4 on the reverse of this form, and that all information contained in this P. W. A. Form 163 is true, correct, and complete.

Subscribed and sworn to before me this 5th

day of January, 1937, at

152 1/2 Street, San Diego, Calif.

The City of San Diego

By Fred D. Pyle

Hydraulic Engineer

[SEAL] Marie D. Dunne (Notary Public)

LANDS RECEIVED AND DISBURSED

[SEAL]

My commission expires 1937

PENALTY FOR FALSE CERTIFICATION - Section 35 of the Criminal Code, as amended, provides a penalty of not more than \$10,000 or imprisonment of not more than 10 years, or both, for knowingly and willfully making or causing to be made any false or fraudulent statements or use or cause to be made or used any false account, claim, certificate, affidavit, or deposition, knowing the same to contain any fraudulent or fictitious statement of any governmental department or agency.

CERTIFICATE OF DEPOSITARY

We certify that the Construction Account of the above-named applicant has been credited with deposits totaling \$152,511.13* and had a credit balance of \$48,930.84 at the close of business Dec. 31, 1936

San Diego, Calif.

6th & Broadway office Bank of America

January 5, 1937

By Chester Firsh Pro Asst. Cashier

*Excess of \$1177.29 credited to bank account corrected by withdrawals.

[BANK SEAL]

APPROVALS FOR FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS

APPROVED: Resident Engineer Inspector.

State Engineer Inspector.

(Date) 1937

Table with 5 columns: (1) FEDERAL APPROVED, (2) STATE APPROVED, (3) LOCAL APPROVED, (4) COSTS INCURRED, (5) FUNDS RECEIVED

The following is the status of the whole project as of the dates indicated. The funds requisitioned on the account will be expended for the purposes shown in column 4, subject to changes.

INSTRUCTIONS

- 1. The summarization of costs as described in column 1 shall be in accordance with the standard classification of accounts prescribed by P. W. A. (Administrative Order 145).
2. Entries in column 2 shall be based upon the most recent estimate of project costs as approved by P. W. A. through the State Director.
3. Entries in column 3 shall consist of the aggregate of all previous loan and/or grant payments or requisitions, according to their status, as follows:
(a) If no payments received on all prior requisitions, then show items requested on pending requisitions.
(b) If payments received on all prior requisitions, then show items supporting such payments.
(c) If the situation is a combination of (a) and (b), then the figure shown shall be determined accordingly.
4. Entries in column 4 shall support the amount currently requisitioned as covered by Form P. W. C. A. 21-B, 21-C, or 22.
5. Entries in column 5 shall cover all costs (paid and unpaid) incurred on the project as of the date of the regulation, or as of the closing date of the applicant's last accounting period.

STATEMENT CONCERNING CONSTRUCTION

I, Fred D. Pyle (Name of officer), the undersigned Hydraulic Engineer (Title) of The City of San Diego (Grantee), hereby certify: (a) That the construction of the project (P. W. A. Docket No. 1223-R) has been completed and all costs in connection therewith have been determined; and (b) that said City of San Diego (Grantee)

has ~~taken proceedings appropriate legally to obtain~~ {legally obtained} funds which together with the amount of the final grant payment will be sufficient to pay all costs in connection with the construction of the project.

IN WITNESS WHEREOF, I have hereunto set my hand this 5th day of January, 193 7

Fred D. Pyle Hydraulic Engineer (Signature) (Title)
The City of San Diego (Grantee)

NOTE.—The above form has been prepared by the P. W. A. It must be executed by a duly authorized officer having knowledge of the facts and be adapted to the circumstances of the particular case. It is not essential that the grantee use this form if the form the grantee uses complies substantially with the above.

PENALTY FOR FALSE CERTIFICATION

Section 35 of the Criminal Code, as amended, provides a penalty of not more than \$10,000 or imprisonment of not more than 10 years, or both, for knowingly and willfully making or causing to be made "any false or fraudulent statements * * * or use or cause to be made or used any false * * * account, claim, certificate, affidavit, or deposition, knowing the same to contain any fraudulent or fictitious statement * * *" relating to any matter within the jurisdiction of any Governmental department or agency.

Section 9 of the Emergency Relief Appropriation Act of 1935 provides a penalty of not more than \$2,000, or imprisonment of not more than 1 year, or both, for any person who knowingly and with intent to defraud the United States, makes any false statement in connection with any application for any project, employment, or relief aid under the provisions of the Act, or who diverts, or attempts to divert, or assists in diverting * * * any moneys appropriated by the Act, or any services or real or personal property acquired thereunder, or who knowingly, by means of any fraud, force, threat, intimidation, or boycott, deprives any person of any of the benefits to which he may be entitled under the provisions of the Act, or attempts so to do, or assists in so doing.

made or used and that * * * account claim certificate, affidavit or deposition, knowing
causing to be made and * * * and in case of knowledge or belief that the grantee has the
to impairment of not more than 10 years or both for knowledge or belief that the grantee has the
Section 33 of the Criminal Code as amended, provides a penalty of not more than \$10,000

BEHAVIOR FOR LARGE CERTIFICATION

has complied substantially with the above.
the particular case. It is not essential that the grantee has the form if the form the grantee
This and the Office of the Public Health and the knowledge of the facts and be adapted to the circumstances of
NOTE: The above form has been prepared by the U. S. A. It may be executed by a

366c

(Grantee)

1910

(Grant)

1910

connection of the project (U. S. A. Docket No. 1910-1911) has been completed and all costs in
connection of the project (U. S. A. Docket No. 1910-1911) has been completed and all costs in
connection of the project (U. S. A. Docket No. 1910-1911) has been completed and all costs in

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(Grantee)

1910

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connection of the project (U. S. A. Docket No. 1910-1911) has been completed and all costs in

3-10-37
copy/p

CONTRACT CHANGE NO. 5-1-4

To City of San Diego, c/o Fred D. Pyle
524 F St., San Diego, San Diego
County
California

Docket No. Calif. 1223-R
Type of Project Dam repairs
Symbol No. 42.133

Contract No. 1

Contractor M. H. Golden

Receipt is acknowledged of your communication, dated Jan. 6, 1937, requesting approval of the following contract change:

Classification (1)	Latest Approved Estimate (2)	Scheduled Cost		
		From (3)	This Change (4)	To (5)
				2.71
1. Preliminary	2.71	2.71		0
2. Land & right-of-way	0	0		
3. Construction	132,248.82	132,248.82	+2,889.20	135,138.02
4. Engineering	12,000.00	12,000.00		12,000.00
5. Legal and administrative	300.00	300.00		300.00
6. Interest	0	0		0
7. Miscellaneous	4,243.82	4,243.82	-2,889.20	1,354.62
Total	148,795.35	148,795.35		148,795.35

Calendar days None additional

New completion date

Description of change: Establishing the true construction cost for project through unit quantities actually incorporated and necessary and to be paid for at the unit bid price. See complete details attached. Additional cost to project - \$2,889.20

I hereby certify that this is a full, true, correct and conformed copy of the original change order executed by the State Director on the date indicated.
C. W. Schruth, Engineer

Dated 1/11/37

This contract change is approved. This change is technically and economically sound, and proper provision for work has been established. The Public Works Administration, in approving any change, assumes no obligation to finance the cost thereof, except to the extent to which the same may be paid out of funds expressly contracted for by it, and specifically makes no representation concerning any additional funds necessitated by any approved change.
Date January 8, 1937

A.D. Wilder, State Director
366

December 28, 1936

Mr. A. D. Wilder, State Director
Public Works Administration
805 Washington Building
Los Angeles, California

Subject: PWA Docket Calif. 1223-R Hodges Reservoir
Dam Strengthening, Overruns and Underruns
Change Order #3

Dear Sir:

In accordance with the relative stipulations of the grant agreement and administrative order No. 11, supplement 1, submitted herewith for your approval are the increases and decreases in the unit schedule item quantities of the Hodges reservoir dam strengthening work, PWA Docket Calif. 1223-R M.H. Golden contractor, as follows:

Schedule Item	Increase	Decrease
1. Increase of 315.34 cubic yards in Class 1 excavation due to foundation conditions. Increase 315.34 cubic yards @ \$5.35	1,687.07	
2. Decrease of 50 cubic yards in Class 2 excavation because no footings were required for diagonal strengthening. Decrease 50 cubic yards @ \$5.35		267.50
3. Decrease of 8.6 cubic yards in Class 3 excavation due to field conditions. Decrease 8.6 cubic yards @ \$4.00		34.40
4. Increase of 167.7 cubic yards in Class 4 excavation due to foundation conditions. Increase 167.7 cubic yards @ \$3.80	637.26	
5. Decrease of 71.06 cubic yards in Class 1 concrete due to ample quantity provided in bid schedule. Decrease 71.06 cubic yards @ \$18.20		1,293.29
6. Increase of 176.41 cubic yards in Class 2 concrete due to State Engineer's requirement to extend diagonal strengthening members to lower elevations and due to insufficient quantity provided in bid schedule Increase 176.41 cubic yards @ \$21.20	3,739.89	
7. Decrease of 76 cubic yards in Class 3 concrete due to foundation material under frames, not requiring spread footing. Decrease 76 cubic yards @ \$13.00		988.00

3-10-37
COPY/P

Schedule Item

Increase Decrease

- 8. Decrease of 191.55 cubic yards Class 4 concrete in spillway due to increase in excavation thereby requiring less concrete.
Decrease 191.55 cubic yards @ \$ 7.30
- 9. Decrease of 393 barrels cement due to decrease in total concrete quantities.
Decrease 393 barrels @ \$ 2.86
- 10. Increase of 137424 pounds reinforcing steel furnished by City due to field conditions and requirement for more steel in spillway
Increase 137424 pounds @ \$0.015 2,061.36
- 11. Decrease of 46995 pounds reinforcing steel furnished by the contractor due to increased use of City-owned steel.
Decrease 46995 pounds @ \$0.04 1,879.80
- 12. Increase of 5571 pounds steel tie bars in work due to diagonal steel above top turnbuckle classified under this item.
Increase 5571 pounds @ \$0.07 389.97
- 13. Increase of 77 pounds steel plates due to field conditions.
Increase 77 pounds @ \$0.05 3.85
- 14. Increase of 593.69 feet of drill holes in concrete due to anchors required to be placed for horizontal concrete ties adjacent to buttresses.
Increase 593.69 feet @ \$0.90 534.32
- 15. Increase of 4613.63 square feet of chipping concrete surface due to insufficient quantity in bid schedule
Increase 4613.63 square feet @ \$0.25 1,153.41
- 16. Decrease of 78.17 cubic feet of chipping keyways due to field conditions and excess quantity in bid schedule.
Decrease 78.17 cubic feet @ \$1.70 132.89
- 17. Increase of 141 groutings of drill holes due to additional anchorage required on horizontal dies adjacent to buttresses.
Increase 141 groutings @ \$0.60 84.60
- 18. Decrease of 296.2 feet of anchor holes in spillway due to ample quantity provided in bid schedule.
Decrease 296.2 feet @ \$0.55 162.91

3-10-37
copy/p

Schedule Item

	Increase	Decrease
19. Decrease of 184 2-1/2" drill holes due to ample quantity provided in bid schedule Decrease 184 feet	@ \$0.66	<u>121.44</u>
	<u>10,291.73</u>	7,402.53

The contract cost of \$130,612.50 is increased by \$2,889.20 on account of the overruns and underruns indicated in this letter, making the total based on the unit bid prices and quantities \$133,501.70. With the additional cost outlined in Change Order 2-1-2 of \$1,636.32 the total due to the contractor will be \$135,138.02. The funds required therefor were provided under contingencies in the revised budget estimate, change order 1-1-1, and amounting to \$5,880.14.

The foregoing increases and decreases summarize to a total increase of \$2,889.20 to the general contract price which amount and work and material involved are believed to be financially and physically equitable to all concerned.

Signed copy of the proposal and agreement of the increases and decreases of the work by the general contractor, M. H. Golden, is attached hereto. The performance and materialmen's bond and the contract documents waive the notice and consent of the surety to make the changes as proposed and the general contractor advises that no additional time will be required for contractual performance.

The authority for making these changes is embodied in paragraph 29 of the contract specifications.

It is indicated that there will be no extra expenditures by the City of San Diego for legal, architectural or engineering services or for extra supervision or lands and rights-of-way.

The changes hereinbefore mentioned have been entered on the various related plans of the project, copies of which will be submitted as soon as prepared. They are only of minor character.

Your consideration and approval of the foregoing in accordance with the project grant agreement with the Federal Emergency Administration of Public Works is requested.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p

3-10-37
copy/p

December 28, 1936

Mr. Fred D. Pyle, Hydraulic Engineer
City of San Diego
524 F Street
San Diego, California

Dear Sir:

Reference is made to our contract for the construction of Hodges Reservoir Dam Strengthening, PWA Docket Calif. 1223-R.

We agree to the increases and decreases contained in your letter of December 28, 1936 to the Public Works Administration entitled "Change Order No. 3". There will be an increase of \$2889.20 in the cost of the project and no additional time will be required for the contractual performance on account thereof.

Very truly yours

M. H. Golden, Contractor

Approved and consented to

MASSACHUSETTS BONDING AND
INSURANCE COMPANY

By C. J. Stafford
Attorney-in-Fact

Date 12-28-36

Contractor's Cost
February 4, 1937

Item	Payroll	Materials	Subcontracts and cartage	Equipment, Insurance Bond, Miscellaneous	Total
Excavation of footings	5,578.00			448.00	6,026.00
Excavation of spillway	1,322.00			302.00	1,624.00
Concrete & Forms	34,313.00	25,713.00		10,802.00	70,828.00
Cement	507.00	13,859.00	611.00	809.00	15,786.00
Placing City steel	2,152.00				2,152.00
Furnishing and placing steel	6,118.00	12,967.00		927.00	20,012.00
Tie rods & plates	1,824.00	3,907.00			5,731.00
Grouting drill holes	436.00			93.00	529.00
Drilling, cutting and chipping	<u>3,457.00</u>	<u> </u>	<u>6,641.00</u>	<u>867.00</u>	<u>10,965.00</u>
	\$55,707.00	\$56,446.00	\$7,252.00	\$14,248.00	\$133,653.00

PERSONNEL

February 20, 1936

State Director National Reemployment Service
Room 306 - 64 Pine Street
San Francisco, California

Subject: Hodges Reservoir Dam Strengthening
PWA Docket Calif. 1223-R

Dear Sir:

In compliance with directions of Bulletin No. A as issued by the State Director Public Works Administration, revised to December 30, 1935, enclosed is copy of advertisement for Hodges Reservoir Dam Strengthening Federal Public Works Project Calif. 1223 R, appearing in the EVENING TRIBUNE published in San Diego California. The location of the work is about ten miles east-erly of Solana Beach, California. Probable date of commence-ment of the work is April 1, 1936; probable date of completion November 30, 1936. Estimated number of different classes of skilled and unskilled labor which may be required in the execution of the work is as follows:

Auto mechanic	1	Mechanic	1
Blacksmith	1	Mechanic trouble shooter	1
Cableway operator	2	Pump man	1
Carpenter foreman	1	Reinforcing steel foreman	1
Carpenter	4	Reinforcing steel worker	
Compressor operator	2	(Placer and Tier)	4
Concrete foreman	1	Rigger (Other than heavy)	2
Concrete form builder	4	Shovel operator	
Concrete spreader	4	1 yard or over	1
Concrete tamper	4	Superintendent	1
Concrete mixerman	2	Tractor operator	2
Crane operator	1	Timekeeper	2
Derrick operator	1	Truck driver under	
Dragline operator	1	15500 pounds	4
Driller	4	Truck driver over	
Drill sharpener	1	15500 pounds	4
Electrician	1	Welder	1
Excavation foreman	1		
General foreman	1		
Hoist operator	1		
Materialman	1		
Laborer, common	10		

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p

March 27, 1936

Mr. Fred D. Pyle, Hydraulic Engineer
City of San Diego, City Hall
San Diego, Calif.

Reference: Hodges Dam Strengthening

Dear Sir:

With reference to Article 12 Paragraph 4(c), Page 38 of specifications for subject contract, we request that we be allowed to pay employees by bank checks drawn on the Security Trust and Savings Bank of San Diego.

This method of meeting payrolls is practiced in our office for the purpose of maintaining more accurate payroll records. We also think that there would be considerable danger of robbery if it becomes known that cash was being transported to such an isolated location.

Very truly yours

MHG/a

M. H. Golden

March 28, 1936

Mr. A. D. Wilder
State Director PWA
805 Washington Building
Los Angeles, California

Subject: PWA Docket Calif. 1223-R Hodges
Reservoir Dam Strengthening
Contract, payment by check

Dear Sir:

Contractor M. H. Golden on the Hodges Reservoir Dam Strengthening, PWA Docket Calif. 1223-R, address 531 Bank of America Building, San Diego, California, is desirous of paying his project workers with bank checks. He refers to the Security Trust and Savings Bank of San Diego, California, for any relative information. The payment of workers in this locality by bank check is common practice and it is recommended that permission be granted M. H. Golden to pay his employees by check.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

/p

805 Washington Building
Los Angeles, California

March 30, 1936.

Mr. Fred D. Pyle
Hydraulic Engineer
City of San Diego Water Department
524 F Street
San Diego, California

Calif. 1223 R
City of San Diego
Hodges Reservoir Dam
Strengthening

Dear Sir:

Referring to your letter of March 28, 1936, we note your request that the Contractor, M. H. Golden, be permitted to pay employees on the above identified project by check instead of cash.

Permission is hereby granted to M. H. Golden to pay employees on the above identified project by check at the site of the project under the following conditions:

1. That said contractor furnish to the P.W.A. Resident Engineer Inspector assigned to said project, a copy of this letter at the time the first payroll is paid by check.
2. That such method of payment involves no risk by employees and that arrangements be made immediately to cash the checks of such employees as so desire without inconvenience or expense to them.

This permission is effective from the date of commencement of operations by said by said M. H. Golden on the above project and is revokable at any time.

You are requested to file a copy of this communication in your office and hand the original letter to M. H. Golden initialed by you.

Yours very truly,

A. D. WILDER, ACTING STATE DIRECTOR (Calif.)

By
ALECK CURLETT
Assistant

For the Administrator.

CWS:NB
cc: 2-Mr. Carr
1-Mr. Munson
1-Mr. Allaman
1-Encl.

March 31, 1936

Mr. M. H. Golden
531 Bank of America Building
San Diego, California

H-4

Subject: PWA Docket Calif. 1223-R
Hodges Reservoir Dam
Strengthening

Dear Sir:

Enclosed is original letter from the Acting State Director PWA dated March 30, 1936 and received by this office March 31, 1936, and duly initialed by the Hydraulic Engineer as requested, granting M. H. Golden, contractor on PWA Docket Calif. 1223-R Hodges Reservoir Dam Strengthening, permission to pay employees by check under the conditions stated in the letter.

Copy of the original letter from PWA is on file in the office of the Hydraulic Engineer, City of San Diego.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

/p
encl.

BULLETIN "I"
April 11, 1936

To All P.W.A. Borrowers and/or Grantees under the
Emergency Relief Appropriation Act of 1935:

I - SUBJECT - AMENDMENT OF CONSTRUCTION REGULATIONS 3(a)(4).

Paragraph 3(a)(4) of "Construction Regulations" in PWA Forms
Nos. 166, 171, 179, 180 and 199 is hereby amended so as to read
as follows:

"(4) The contractor shall not knowingly employ under
this contract any person engaged in any other gainful
occupation whose hours of labor on such occupation
together with his hours of labor on the project exceed
the limitations of hours prescribed for employees of
his classification under this contract."

(ADMINISTRATIVE ORDER NO. 129, Dated March 4, 1936.)

II. AMENDMENT TO PARAGRAPH 1(c) of CONSTRUCTION REGULATIONS.

Paragraph 1(c) of Construction Regulations was added pursuant
to Administrative Order No. 26 of the Works Progress Administration
(PWA Form 203; State Director's Bulletin B-1, issued October 16,
1935), and was required to be incorporated verbatim in all con-
tracts for work to be performed at the site of any project fin-
anced by the Federal Emergency Administration of Public Works
(PWA) under Emergency Relief Appropriation Act 1935.

Pursuant to PWA Administrative Order No. 61, Supplement 8
(Administrative Order No. 39 of the Works Progress Administration),
the foregoing Section 1(c) of the Construction Regulations is
amended as follows:

"When organized labor, skilled or unskilled, is desired
by any contractor employed to handle all or any part of
the project, the contractor shall requisition such
workers as may be required from the representative of
each recognized union concerned. The representative
of the Union will select Union members for work on the
project giving preference, first, to those members of
the Union who are on the local public relief rolls;
second, upon exhaustion of Union members on such rolls,
to any other members of the Union. Actual assignment
of the workers to projects thereafter will be the
responsibility of the Works Progress Administration.

The foregoing paragraph supersedes Administrative Order
No. 26 of the Works Progress Administration (See Par. 5
of PWA Form No. 203; See Par. 4 of Amendment 1(c),
Construction Regulations, State Director's Bulletin B-1),
insofar as said Administrative Order No. 26 relates to
the employment of union labor."

The foregoing amendment must be inserted as an amendment to section 1(c) of the Construction Regulations wherever applicable.

This amendment is applicable:

- (a) To each proposed construction contract where advertisement for bids has commenced on or after March 23, 1936;
- (b) To each proposed construction contract where advertisement for bids has been commenced prior to March 23, 1936, and the time for the receipt of bids has not passed, provided an appropriate addendum, including therein the requisite amendment, is issued by the Owner;
- (c) To each construction contract now or hereafter executed in cases not covered by subparagraphs (a) and (b) hereof, which is wholly or partly unperformed as to labor, where a supplemental agreement containing the requisite provisions of the agreement is entered into by the parties concerned, provided local law permits;
- (d) The above mentioned amendment, however, applies only to projects financed under the Emergency Relief Appropriation Act of 1935, and is further limited in application to those cases only in which Works Progress Administration Administrative Order No. 26 (see P.W.A. Form No. 203; State Director's Bulletin B-1) is applicable.

In each instance above mentioned where the amendment shall or may be applicable, the proposed or executed Construction Contract Documents Addendum or Supplemental Agreement, should include the amendment above set forth.

Where it is necessary to obtain the consent of a contractor's surety or sureties to any supplemental contract, executed to give effect to this order, such consent shall be obtained.

Where such supplemental agreement is entered into, such agreement should not provide for any change in the original contract price.

(ADMINISTRATIVE ORDER No. 61, SUPPLEMENT 8, DATED MARCH 12, 1936)

A. D. WILDER
ACTING STATE DIRECTOR (CALIFORNIA).

May 7, 1936

Mr. A. D. Wilder
Acting State Director PWA
805 Washington Building
Los Angeles, California

Subject: PWA Docket Calif. 1223-R
Hodges Reservoir Dam Strengthening
Subcontractor, payment of employees
by check

Dear Sir:

Permission is hereby requested on behalf of Emsco Concrete Cutting Corp., subcontractor for PWA Docket Calif. 1223-R Hodges Reservoir Dam Strengthening, 1517 Santa Fe Avenue, Los Angeles, California, to pay their project workers with bank checks.

Contractor M. H. Golden was not aware that the permission granted him by the PWA to pay his project workers by check did not cover the employees of the subcontractor, and if permission is granted to the subcontractor it is requested that it be made retro-active to April 10, 1936, the date the subcontract agreement was entered into between M. H. Golden and Emsco Concrete Cutting Corp.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p

May 8, 1936

Mr. Fred D. Pyle
Hydraulic Engineer
City of San Diego Water Department
524 F Street
San Diego, California

Calif. 1223-R
Hodges Dam Strengthening
City of San Diego

Dear Sir:

Referring to your letter of May 7, 1936, we note your request that the Emsco Concrete Cutting Corporation, subcontractors, be permitted to pay employees on the above identified project by check instead of cash.

Permission is hereby granted to Emsco Concrete Cutting Corp., to pay employees on the above identified project by check at the site of the project under the following conditions:

1. That said contractor furnish to the PWA Resident Engineer Inspector assigned to said project, a copy of this letter at the time the first payroll is paid by check.
2. That such method of payment involves no risk by employees and that arrangements be made immediately to cash the checks of such employees as so desire without inconvenience or expense to them.

This permission is effective from the date of commencement of operations by said Emsco Concrete Cutting Corporation on the above project and is revokable at any time.

You are requested to file a copy of this communication in your office and hand the original letter to Emsco Concrete Cutting Corporation initialed by you.

Very truly yours

A. D. Wilder
State Director (California)

By Allan J. Wagner
Senior Engineer

CWS:NB

May 9, 1936

Mr. M. H. Golden, Contractor
531 Bank of America Building
San Diego, California

H-19

Subject: PWA Docket Calif. 1223-R Hodges
Reservoir Dam Strengthening
Subcontractor, payment of employees

Dear Sir:

Enclosed is copy of letter from State Director PWA (California) dated May 8, 1936 granting Subcontractor Emsco Concrete Cutting Corp. permission to pay employees by check under the conditions stated in the letter, on the above project.

The original letter, duly initialed by the Hydraulic Engineer, has been handed to the Emsco Concrete Cutting Corp. and copy is on file in this office, all in compliance with request of PWA.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

/p
encl.

May 13, 1936

Mr. Fred D. Pyle, Hydraulic Engineer
City of San Diego
524 F Street
San Diego, Calif.

Subject: PWA Docket Calif. 1223-R Hodges
Reservoir Dam Strengthening

Dear Sir:-

In accordance with specifications for above project we wish to report the following time in addition to the regular 8 hours (Paragraph 16):

		April 24	April 25
A. Cletus	Cement Finisher	2 hrs	3 hrs
M. Mercado	" "	2 "	3 "
G. Winson	Mixer Operator	1/2 hr	1/2 hr

The overtime was on both occasions caused by an extraordinary emergency, inasmuch as we were at the time pouring concrete for the spillway slab, and it was necessary to complete the pour to a point where a joint could be constructed without weakening the structure; and the concrete surface had to be finished before the concrete hardened.

Very truly yours
M. H. Golden

Sworn to before me this 14 day of May 1936

Emma Geradehand
Notary Public in and for the
County of San Diego
State of California

(SEAL)

5-27-37
COPY/P

May 18, 1936

Mr. M. H. Golden, Contractor
531 Bank of America Building
San Diego, California

H-22

Subject: PWA Docket Calif. 1223-R Hodges Dam
Strengthening, Bulletin "I"

Dear Sir:

Your attention is invited to sub-division 4 paragraph 1 of Construction Regulations pages 33 and 34 of Hodges reservoir dam strengthening. Pursuant to the reserved right of the Administrator PWA to designate another agency or method in regard to placement of workers, Bulletin "I" has been issued, copy attached, dated April 27, 1936, reading in part as follows:

"When organized labor, skilled or unskilled, is desired by any contractor employed to handle all or any part of the project, the contractor shall requisition such workers as may be required from the representative of each recognized union concerned. The representative of the union will select union members for work on the project giving preference, first, to those members of the union who are on the local public relief rolls; second, upon exhaustion of union members on such rolls, to any other members of the union. Actual assignment of the workers to projects thereafter will be the responsibility of the works progress administration.

"The foregoing paragraph supersedes administrative order No. 26 of the Works Progress Administration (See Par. 5 of P.W.A. Form No. 203; See Par. 4 of Amendment 1(c), Construction Regulations, State Director's Bulletin B-1), insofar as said administrative order No. 26 relates to the employment of union labor."

Please govern yourself in accordance with the foregoing; acknowledge receipt of this communication and indicate your acceptance.

Very truly yours
Fred D. Pyle,
Hydraulic Engineer

PB/p
encl.

May 19, 1936

Fred D. Pyle, Hydraulic Engineer
City of San Diego.

Dear Sir: Please be advised that we have this day received your communication regarding above mentioned Bulletin "I", and we are hereby acknowledging acceptance of the provisions therein.

Very truly yours
M. H. GOLDEN
S. F. Nielsen

SFN/a

3-26-37
copy/p

May 21, 1936

Mr. A. D. Wilder
State Director (California) PWA
805 Washington Building
Los Angeles, California

Subject: PWA Docket Calif. 1223-R Hodges Dam
Strengthening, Bulletin "I"

Dear Sir:

In order to comply with Administrative Order 61 Supplement 8, as contained in Bulletin "I" and in accordance with advise from the City Attorney of San Diego, Contractor M. H. Golden on PWA Docket Calif. 1223-R Hodges reservoir dam strengthening, was notified on May 18, 1936 to govern himself in accordance therewith and indicate his acceptance thereof.

Enclosed is copy of letter dated May 20, 1936 from Mr. Golden acknowledging and accepting the provisions contained in the Bulletin.

Should any further information be required or necessary in connection with the above, it will be furnished upon request.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p
encl.

REQUISITION FOR WORKERS

Requisition No. 16

Date July 17, 1936

From M. H. Golden

At Hodges Dam

To United States Employment Service 666 Second Avenue

Please supply workers as indicated for Project No. Calif.1223-R located in California near Rancho Santa Fe San Diego County

Description of Project: Dam strengthening

CITY OF SAN DIEGO EMPLOYEES

<u>Occupation</u> <u>Occupational Title</u>	<u>Wage</u> <u>Class</u>	<u>No.</u>	<u>Sex</u>	<u>Special</u> <u>Requirement</u> <u>or Condition</u>	<u>Rate</u> <u>per</u> <u>Mo.</u>	<u>Date</u> <u>to</u> <u>Report</u>	<u>Hour</u> <u>to</u> <u>Report</u>	<u>Place</u> <u>to</u> <u>Report</u>
Fred D. Pyle	PT	1	M	Hyd.Engr.	416.6	3/1	8	City of
Paul Beermann	"	1	M	Asst.Civ.Eng	225.	3/1	8	San
Norman Coote	"	1	M	Sr.Draftsman	169.	3/1	8	Diego
Evelyn I. Fraser	"	1	F	Sec.-Steno.	141.	3/1	8	"
Frances T. Patten	"	1	F	Sr. Steno.	127.	3/1	8	"
Harry V. Newcomb	"	1	M	Sr.Draftsman	181.	3/1	8	"
Lawrence H. Hill	"	1	M	Chf. Party	183.	3/1	8	Hodges Dam
Carl B. Hough	"	1	M	Engr. Clerk	148.	3/1	8	"
Fred Brachmann	"	1	M	Inspector	175.	3/1	8	"
Wm. P. Bauer	"	1	M	Inspector	175.	3/1	8	"

M. H. Golden

APPROVED:

Fred D. Pyle
Hydraulic Engineer
City of San Diego

September 15, 1936

Mr. Fred Pyle
Hydraulic Engineer
524 F Street
San Diego, Calif.

Subject: PWA Docket Calif. 1223-R
Hodges reservoir dam
strengthening

Dear Sir:-

We have, this morning, been informed by the secretary of the carpenters union that they are unable to furnish carpenters for the above project. This situation also exists for reinforcing steel workers, and we respectfully request permission to employ a couple of apprentices in each line in order to get the work completed, as well as educating skilled mechanics for the future.

We have been informed by the Resident PWA Engineer Inspector that we would have to obtain a special permission to employ apprentices on this project.

Yours very truly

M. H. Golden

By S. F. Nielsen

SFN:K

3-11-37
copy/p

September 15, 1936

Mr. M. H. Golden, Contractor
531 Bank of America Building
San Diego, California

H-44

Subject: PWA Docket Calif. 1223-R Hodges
Reservoir Dam Strengthening, labor

Dear Sir:

Receipt is acknowledged of your letter dated September 15, 1936 requesting permission to employ apprentices for reinforcing steel workers as well as educating skilled mechanics for the future.

The contract specifications for Hodges reservoir dam strengthening permit the employment "of any craft or employment not specifically mentioned in the foregoing schedule of rates shall be paid not less than \$5.00 per diem of 8 hours" and the employment of apprentices at a rate established by the labor union is understood to comply with the contract specifications.

This matter has been taken up with the State Director of Public Works Administration in Los Angeles and Mr. Curlett of the State Director's office confirms the impression that the placement of apprentices for particular lines may be approved, provided the rate of pay is the prevailing wage.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p

San Diego County
DISTRICT COUNCIL OF CARPENTERS
Labor Temple
621 Sixth Avenue
San Diego, California

Sept. 17 1936

Mr. M. H. Golden
Bank of America Bldg.
San Diego, Calif.

Dear Sir:

In answer to your request for information for union regulations governing apprentice carpenters, I quote the following section from our local by-laws.

Sec. 23 "Employers will be allowed one apprentice for the first two journeymen (not including foremen) and one apprentice for each four journeymen thereafter. It shall be the duty of every member to assist such apprentice in improving his work and gaining a better knowledge of the trade."

The wages to be paid are based on knowledge of the trade, length of time previously worked with tools, and actual worth to the contractor and are mutually agreed to by the apprentice, the contractor and representative of the union. On PWA work the minimum wage specified in the contract would be considered the minimum to be paid an apprentice carpenter.

Very truly yours

Henry Smith
Business Agent

September 17, 1936

Mr. A. D. Wilder
State Director PWA (Calif.)
805 Washington Building
Los Angeles, California

Subject: PWA Docket Calif.1223-R
Hodges Reservoir Dam
Strengthening, Apprentices

Dear Sir:

Enclosed is copy of letter from the labor union pertaining to the use and establishing the rate for apprentices for PWA Docket Calif. 1223-R Hodges Reservoir Dam Strengthening work.

Your retro-active approval for employment of apprentices at wage rates established by the labor union to and including September 14, 1936, if deemed necessary, is requested.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p
encl.

INTERNATIONAL ASSOCIATION OF BRIDGE,
STRUCTURAL, ORNAMENTAL AND REINFORCED
IRONWORKERS

Local No.229

San Diego, California

September 18th, 1936

TO WHOM THIS MAY CONCERN:

Re: Apprentices.

Article XXI Sec. 6 Apprentices on construction work may be employed at the ratio of not more than one apprentice to every seven journeymen employed by any employer.

The local union constitution and by-laws provide a minimum wage of \$0.75 per hour for all apprentices and are entitled to the same consideration as a journeyman.

E. C. Fox, Secretary

Local Union #229

(SEAL)

3-26-37
COPY/p

September 19, 1936

Mr. A. D. Wilder, State Director
Public Works Administration (Calif.)
805 Washington Building
Los Angeles, California

Subject: PWA Docket Calif. 1223-R Hodges
Reservoir Dam Strengthening,
Union labor

Dear Sir:

Request has been made by the Federated Labor Trades to clarify the situation in connection with the contractor's obtaining labor for PWA Docket Calif. 1223-R Hodges Reservoir Dam Strengthening.

It is the contractor's contention that under the specifications for the above project and the requirements of Bulletin "I" he may request his labor from the labor unions direct without reference to the U. S. Employment Service and that, therefore, no number need be obtained by the man assigned to the work by the labor union.

At the present time all workers obtained thru the labor union are being assigned numbers by the U.S. Employment Service and the assignments have to be signed and returned to the Employment Service office.

I shall appreciate being advised if the contractor and labor union are correct in their assumption that their labor does not in any way by record or otherwise have to be passed by the U.S. Employment Service.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p

3-26-37
copy/p

September 21, 1936

SDIR:AC:EH Calif. 1223 R
Hodges Reservoir Dam
Referral of labor

Mr. Fred D. Pyle
Hydraulic Engineer
San Diego Water Department
524 F St. San Diego, Calif.

Dear Sir:

Answering your letter of September 19th, 1936, we believe that the union agencies are in error in not having their men cleared through the United States Employment Service. This matter, however, is a regulation of the Works Progress Administration and the National Reemployment Service and should be adjusted by them.

The attached memorandum will explain how the work is being done in Los Angeles County under a working agreement between the Building Trades Council and the Reemployment Service.

This method permits men to be sent from the union directly to the job and their names are then sent by the union to the employment service which service in turn issues the necessary clearance card the following day, and this card is then sent to the men on the job.

As stated above, however, PWA is not directly concerned with the regulations of the other departments of the Administration. Nevertheless, our regulations require that the Resident Engineer Inspector secure a referral card No. 325 when the men are sent to the job.

Very truly yours
A. D. Wilder, State Director (Calif)
By Aleck Curlett
Assistant State Director
For the Administrator

3-10-37
copy/p

October 9, 1936

Docket Calif. 1223-R
Hodges Dam Strengthening
The City of San Diego

Mr. Fred D. Pyle
Hydraulic Engineer
Water Department
The City of San Diego
San Diego, California

Dear Sir:

Additions to Posted Wage Scale

Reference your letter September 15, 1936, to Contractor M. H. Golden, indicating approval of labor classification for apprentices.

The State Engineer Inspector wrote this office, October 8, 1936, as follows:

"With reference to the wage scale Apprentice reinforcing steel-workers", to make this wage rate effective it will be necessary for the owner to set up the proposed rate by official action, and submit the proposal to the State Director for his approval.

"Please bring this above procedure to the attention of the owner."

Please take such official action as necessary and submit to State Director for approval. The rate fixed should be \$6.00 per 8 hours, to conform with that set by labor union involved. Your action, and the approval by State Director, should be made retroactive to September 15, 1936, the date of reference letter, and employment of first worker under new classification.

Very truly yours

C. F. Graff

3-10-37
copy/p

October 14, 1936

Mr. A. D. Wilder, State Director
Public Works Administration
801 Washington Building
Los Angeles, California

Subject: PWA Docket Calif. 1223-R Hodges
Reservoir dam strengthening
Labor, apprentices

Dear Sir:

Receipt is acknowledged of your letter from Mr. C. F. Graff, PWA Resident Engineer Inspector dated October 9, 1936 relating to the establishment by official action of the City of San Diego of minimum rates for reinforcing steel workers apprentices.

The contract documents provide for minimum pay of \$5.00 per 8-hour day for any craft or employment not specifically mentioned in the schedule of rates and which were included in the bid call and executed contract documents.

It appears to be illegal for the Council to establish positions or rates of pay therefor which were not included in the above documents.

The employment of apprentices at a rate of \$5.00 or more per 8-hour day complies in all respects with the City's requirements under the terms of the contract and the City has no jurisdiction in the matter beyond ascertaining that at least the minimum rates of pay set out in the specifications are paid by the contractor.

The rate of wages paid for apprentices by the contractor does comply with the minimum set out and other than approval thereof as contained in the letter from the Hydraulic Engineer to Contractor M.H. Golden dated September 15, 1936, copy attached, it appears that no further action can be taken by the City.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p
encl.

October 15, 1936

Mr. Fred D. Pyle
Hydraulic Engineer
San Diego Water Department
524 F St.
San Diego, Calif.

SDIR:AC:EH
Calif. 1223 R
Hodges Reservoir Dam
Wages for Labor
Apprentices

Dear Sir:

Answering your letter of October 14th, 1936, we note that you believe that it is illegal for the Council to establish additional rates of pay which were not included in the original advertisement for bids and we believe that your stand on this matter is correct.

Nevertheless, in order that the auditors will not cite any non-compliances if the contractor is going to show a man working on the job under a title of "apprentice" and this title is not shown on the original contract documents, it will be necessary that a rate be established and this additional classification added to the original wage schedule.

We understand that this job is a union job, therefore, the unions should be able to inform you as to the proper rate of pay for various types of apprentices and if you will let us have this information, we will have it incorporated on the change order form, because at the present time there is no document showing that the contractor has actually agreed to pay any particular rate for apprentices.

Very truly yours

A. D. Wilder, State Director (Calif.)

By Aleck Curlett
Assistant State Director

For the Administrator

October 16, 1936

Mr. A. D. Wilder, State Director
Public Works Administration
805 Washington Building
Los Angeles, California

Subject: SDIR:AC:EH Calif. 1223-R Hodges
Reservoir Dam, wages for labor
apprentices

Dear Sir:

Receipt is acknowledged of your letter of October 15, 1936 pointing out that the labor unions should be able to inform the City as to the rates for various types of apprentices in connection with the Hodges reservoir dam work.

For your information enclosed is copy of letter from International Association of Bridge, Structural, Ornamental and Reinforced Iron-workers Local No. 229 dated September 18, 1936 stating that the local union constitution and by-laws provide a minimum wage of 75¢ per hour for all apprentices.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p

FEDERAL EMERGENCY ADMINISTRATION OF
PUBLIC WORKS
1210 Hewes Building, San Francisco

APPROVAL OF INCREASE OF MAXIMUM WORKING HOURS

TO: Mr. Fred D. Pyle
Hydraulic Engineer
San Diego Water Department,
524 F St.,
San Diego, California

PWA File No. Calif.1223-R
Applicant: City of San Diego
Project: Hodges Reservoir
Dam
Location: 32 miles from the
City of San Diego

The request for increase of maximum working hours on the above mentioned project having been duly considered by me, I find, determine and declare that special and unusual circumstances exist in this case which, in my judgment, make it impracticable and infeasible to require adherence to the maximum hours of work heretofore prescribed. Such special and unusual circumstances are as follows:

The Manager of the National Re-Employment Service in this District, also the Secretary of the San Diego Building Trades Council, both certify that neither agency can supply a sufficient number of qualified skilled and unskilled workmen for the excess hours over and above the contract limitation of 130 hours per month.

An increase of maximum working hours is hereby approved for this project as follows:

1. The maximum working hours shall be
 - (a) eight (8) hours per day
 - (b) forty (40) hours per week for each and every week
 - (c) hours per month
2. The said increased maximum shall apply to the following designated trades or occupations only:

All skilled and intermediate labor and common labor.

As per your request of August 19th, 1936, this will also be a retroactive approval for all common labor from August 10th to October 10th, 1936.

3. The said increased maximum shall apply from October 10, 1936 to December 10, 1936.

4. The said increased maximum shall apply only to the work, contract or sub-contract identified as follows:

To the General Contractor, M.H. Golden and all Sub-Contractors under him.

This approval has reference only to PWA requirements and does not have reference to provisions of local laws, if any, restricting hours of work. The interpretation and application of any such local laws are matters concerning which no responsibility is assumed by the PWA.

This approval is conditioned upon the owner informing the affected principal contractor (unless the work is being done by force account) that the Owner does not waive any rights it may have to liquidated damages in the event such contractor shall fail to complete the work within the time specified in the contract.

This approval may be withdrawn by the State Director PWA, at any time upon determination by him that the conditions warranting such increase of maximum working hours have ceased to exist.

Dated November 18th, 1936.

(Signed) A.D.Wilder

A.D.WILDER
STATE DIRECTOR, PWA (CALIFORNIA).
FOR THE ADMINISTRATOR.

NOTE: This authorization is to be substituted for that issued to you under date of November 12th, 1936.

cc: 1 Original to Owner
2 State Engineer Inspector
1 District Project Auditor
1 Special Agent in Charge
1 Washington (Col. Hackett)
1 Mr. Wilder at S.F. Office
1 Docket File

3-10-37
copy/p

CONTRACT CHANGE NO. 1-1-1

To City of San Diego, c/o Fred D. Pyle
San Diego County, California

Docket No. Calif. 1223-R
Type of Project Dam repairs
Symbol No. 42.133
Contract No. 1

Contractor M. H. Golden

Receipt is acknowledged of your communication, dated 11-16-36 requesting approval of the following contract change:

Classification (1)	Latest Approved Estimate (2)	Scheduled Cost		
		From (3)	This Change (4)	To (5)
1. Preliminary	2.71			
2. Land and right-of-way	0			
3. Construction	130,612.50			
4. Engineering	12,000.00			
5. Legal & administrative	300.00			
6. Interest	0			
7. Miscellaneous	5,880.14			
Total	148,795.35			

Calendar days

New completion date

Description of change: The addition of the following labor crafts to the previously approved labor classification by the applicant.
Apprentices.75¢ per hour
One apprentice ratio to every seven journeyman employed. Local Union provides a minimum wage of \$0.75 per hour for all apprentices and the above ratio.

I hereby certify that this is a full, true, correct and conformed copy of the original change order executed by the State Director on the date indicated.

C. W. Schruth, Engineer

Dated 11/23/36

This contract change is approved. This change is technically and economically sound, and proper provision for work has been established. The Public Works Administration, in approving any change, assumes no obligation to finance the cost thereof, except to the extent to which the same may be paid out of funds expressly contracted for by it, and specifically makes no representation concerning any additional funds necessitated by any approved change.

A. D. Wilder, State Director

Date 11-21-36

February 13, 1937

INSPECTION: EJR-1g
Docket Calif.1223-R
Hodges Reservoir
San Diego, California

TO: P.V.Cooper, Resident Engineer Inspector
FROM: O.E.Carr, State Engineer Inspector
SUBJECT: Noncompliance
Reference: Auditor's Summary PWCA 100% completion for period
March 15, 1936 to December 31, 1936

The above referenced Audit Report cited apparent excess-hour noncompliances as set forth in PWCA 256, Schedule 10.

It appears that the noncompliances were due to the manner in which the three men (Huff, Hendrix and Cletus) were classified on the contractor's payroll, being shown as pumpmen, concrete mixerman and concrete finisher for the entire week of forty-eight hours.

Information received by this office from our Traveling Engineer Inspector Morgan indicates the above men did manual labor not to exceed fifteen hours per week with tools and served in a supervisory capacity for the balance of the week. If this information is correct then the discrepancy was in the classification shown on the payroll.

If the above conditions existed and the Owner desires to take action, it is suggested that he obtain from the Contractor a certification that an error had been made in entering the classifications on the payroll for the three workmen concerned, and a detailed explanation of their duties while employed.

Furnish this office the original and two copies of the certification, also any letters of correspondence.

If the Owner take such action he should do so immediately.

O.E.Carr
State Engineer Inspector

By J.W.Bournier
Asst. State Engineer Inspector

cc: 2 Gholston
1 S.F.
1 File

MATERIALS OF
CONSTRUCTION
and
TESTS

April 30, 1936

Mr. J. J. Kaspar
PWA Engineer-Inspector
El Cortez Hotel
San Diego, California

Subject: Hodges Dam Strengthening

Dear Sir:-

In accordance with instructions from the San Diego Water Department we wish to inform you that materials for above project are being furnished by the following firms:

Cement:

Riverside Cement Co.
621 South Hope Street
Los Angeles

Aggregates:

Fenton Material Co.
13th St. & National Ave.
San Diego

Reinforcing steel:

Fenton Material Co.
Mfgd. by Columbia Steel Corp
Torrance, Calif. Plant

Tie Rods:

Bethlehem Steel Co.
P.O.Box 58, Watts Station
Los Angeles

Plate washers:

Kilby Car & Foundry Co.
Anniston, Ala.

Emulsified asphalt: (for
concrete curing)

American Bitumide Co.
Inglewood, California

Very truly yours

M. H. Golden

S. F. Nielsen

SFN/a

3-5-37
copy/p

June 5, 1936

Mr. Edward Hyatt, State Engineer
401 Public Works Building
Los Angeles, California

Subject: PWA Docket Calif. 1223-R
Hodges Dam Strengthening
Tensile tests

Dear Mr. Hyatt:

In compliance with request of Assistant Deputy State Engineer W. H. Holmes, certain tests were made to determine whether laps in the diagonal strengthening at Hodges Dam could be made all at one place, or whether they should be staggered.

For this purpose several blocks of concrete were made up in the City's testing laboratory, and 1/2" square rods of steel were inserted with a lap of 20" and 28", all proportionate to simulate actual field conditions with laps of all steel occurring at one place, 1/2 of the steel at one place and 1/3 of the steel at one place.

The results are indicated on the attached report from the testing laboratory.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p
encl.
cc-W.H.Holmes

3-5-37
copy/p

TENSION TESTS ON STEEL EMBEDDED IN
CONCRETE AND LAPPED WITHIN
CONCRETE

No.	Dimensions inches	Reading at first crack pounds	Reading at failure pounds	Unit Stress in steel lb./sq.in.
20" length of concrete, 20" lap of steel				
A 1	3 x 3	5,900	12,288	49,152
A 2	3 x 3	10,600	11,311	45,244
B 1	4 1/2x4 1/2	10,200	15,678	62,712
B 2	4 1/2x4 1/2	14,800	15,671	62,684
C 1	5 1/2x5 1/2	13,400	15,184	60,736
C 2	5 1/2x5 1/2	12,600	15,843	63,372
28" length of concrete, 28" lap of steel				
D 1	3 x 3	12,400	13,619	54,476
D 2	3 x 3	10,000	13,428	53,712
E 1	4 1/2x4 1/2	7,300	16,260	65,040
E 2	4 1/2x4 1/2	12,000	15,549	62,196
F 1	5 1/2x5 1/2	11,400	18,648	74,592
F 2	5 1/2x5 1/2	12,300	24,000	96,000

NOTE: 3"x3" specimen equivalent to lap all in one place

4 1/2"x4 1/2" " " 1/2 bars lapped in one place
5 1/2"x5 1/2" " " 1/3 " " " " "

REMARKS: A continuous pour of concrete is indicated to be necessary at lap. The continuity of concrete extending beyond lap and the continuity of steel embedment in concrete probably permits even greater stresses to be transmitted in specimen equivalent to making lap all in one place. Working stresses of steel was safely transmitted by all specimens.

STEE L

4-1-37
copy/p

April 21, 1936

Mr. M. H. Golden, Contractor
531 Bank of America Building
San Diego, California

H-11

Subject: PWA Docket Calif. 1223-R Hodges
reservoir dam strengthening, steel

Dear Sir:

This office has been advised that there are no $3/4$ " square or $7/8$ " square steel reinforcing bars available.

In view of the above, provision has been made to use in the spillway City-owned steel available at Hodges dam in sizes of 1" square and $1-1/8$ " square in place of the sizes shown in the drawings.

All City-owned $3/4$ " and $7/8$ " square steel available at Hodges dam and required by the contractor will be saved for the Hodges dam strengthening work and should be placed under the respective schedule items.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p

4-1-37
copy/p

April 21, 1936

Mr. M. H. Golden, Contractor
531 Bank of America Building
San Diego, California

H-10

Subject: PWA Docket Calif. 1223-R
Hodges reservoir dam strengthening
Steel in diagonal strengthening

Dear Sir:

There were delivered to your office on Friday, April 17, 1936, a set of prints showing the excavation under each of the buttresses from No. 9 to 24 inclusive, of the Hodges reservoir dam.

It is indicated that, following requirements of the California State Engineer, in ordering steel for the diagonal strengthening, it should be based on carrying the diagonal strengthening to within three feet measured vertically of the foundation excavation under the respective buttresses.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p

April 22, 1936

Mr. M. H. Golden, Contractor
531 Bank of America Building
San Diego, California

H-15

Subject: PWA Docket Calif. 1223-R Hodges reservoir
dam strengthening, steel tie bars

Dear Sir:

This office has been informed on April 21, 1936 that the length of upset indicated to be required in the specifications for Hodges reservoir dam strengthening in the tie bars of the frames are not available on the Pacific Coast. It was indicated that the upsets could be furnished as follows:

1-1/8" diameter bars	1-1/2 x 4
1-3/8"	1-3/4 x 4
1-5/8"	2-1/8 x 4-1/2
1-3/4"	2-1/4 x 5
2"	2-1/2 x 5-1/2
2-1/4"	2-7/8 x 6
2-1/2"	3-1/4 x 6
2-1/8" not available - use	2-1/4"

The lengths of upset check the dimensions given on page 344 of Carnegie steel hand book 24th edition May 1, 1934, with the exception of the 2-1/2" which is listed as 6-1/2" length of upset.

With the use of a turnbuckle the upsets above indicated will be permitted provided sufficient space is available between the inside edges of the opening of the turnbuckle to take care of the variation in out to out dimensions of buttresses, and provided there is no additional cost to the City due to the use thereof.

The lengths of bars previously submitted to your office should be reduced to take care of the shorter upset. The upset end must have a minimum penetration into the plate of 1/2" after being taken up.

Payment will be made under the respective schedule items and only for the weight of bars actually furnished.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p

June 3, 1936

From : Testing Engineer
To : Hydraulic Engineer
Subject : Tests of lap joint reinforcing bars

In accordance with request from your office, a series of tests has been made, to furnish information on tensile strength of lap joint of reinforcing bars, embedded in concrete; with special reference to construction on Hodges dam strengthening feature.

The specimens were molded on May 22, using materials and form boxes furnished by your office; with the exception of aggregates, which were obtained from samples in the laboratory. The schedule called for six sets of specimens, of two each, of dimensions as given below; and to which serial designations have been assigned, for convenience in recording results, as there shown. The table also shows the results in lbs. required to produce failure under test, followed by notes regarding the type of failure etc.

Of the materials used, the reinforcing bars were of 1/2 inch square deformed type, structural grade, which ordinarily has a tensile strength in the vicinity of 60,000 pounds per square inch. The cement was of the high-early-strength type, "Big Tree" brand of the Calaveras Cement Co. The embedding material was a sand mortar of 1:3 proportions, the sand (with some pea gravel added) being a mix of samples on hand in the laboratory of a coarse grade, suitable for ordinary concrete work. Results of tests on the cement and of grading analysis on the sand, are shown on enclosed report forms.

In molding the specimens, the mortar was mixed to a relatively dry consistency, which might be termed a quaking consistency under vigorous tamping, but with no free water coming to the surface. The lapped bars, which ran the full length of the form in each case, were embedded in the mortar by filling the form somewhat above the lower level of the bars and by tamping them into place rather than to attempt to tamp beneath them. The tops were protected with wet sacks during the curing period.

Six of the specimens: A-1 and 2, B-1, C-1, D-1 and 2, were tested on June 1, at age of ten days. These tests were witnessed by W.H.Holmes, representative of the State Engineer's office, and Paul Beermann of your office. Notes on type of failure of these specimens were kept by Mr. Holmes, and will presumably be furnished your office by him. The writer has no copy of these notes. The remaining six specimens: B-2, C-2, E-1 and 2, F-1 and 2, were tested on the following day, in the regular course of laboratory operations, and notes as to type of fracture on these are shown below.

4-1-37
copy/p

Serial No.	Dimensions	Reading at 1st crack lb.	Reading at failure lb.
A 1	3" x 3" x 20"		11311
2			12288
B 1	4-1/2" x 4-1/2" x 20"	10200	15671
2			15678
C 1	5-1/2" x 5-1/2" x 20"	12600	15184
2			15843
D 1	3" x 3" x 28"		13428
2			13619
E 1	4-1/2" x 4-1/2" x 28"	12000	15549
2			7300
F 1	5-1/2" x 5-1/2" x 28"	12800	24000
2			11400
B- 2	Shear at lower end. General fracture, vertically and horizontally, and falling apart of pieces.		
C- 1	Steel broke outside of specimen.		
C- 2	Shear fractures, top end (about one-fourth of length)		
E- 1	Shear fractures, top end		
E- 2	Shattered and sheared, top end		
F- 1	Fractured at lower end, and steel broke inside specimen		
F- 2	Cracked horizontally across center, where 1st crack appeared.		

The lap joint of two bars similar to the above, held together with two clamps, as furnished by your office, required 8276 lb. to pull apart.

J. Y. Jewett

JYJ/g

Laboratory record of cement test: Soundness steam test - OK
 Fineness % pass Sieve 200 99.6
 Setting time initial 2:30
 final 5:15

Tensile strength 7 days 322
 28 " 420

Sand analysis: Percent passing sieve
 1/2" No. 3 No. 10 No. 20 No. 30 No. 40 No. 80
 100 83 63 43 25 15 3

4-1-37
copy/p

July 21, 1936

Mr. M. H. Golden, Contractor
531 Bank of America Building
San Diego, California

H-28

Subject: PWA Docket Calif. 1223-R
Hodges dam strengthening
Frames between buttresses 7-8

Dear Sir:

Enclosed are two prints of drawing WD-563 approved by the California State Engineer July 18, 1936 showing the vertical frames required between buttresses 7-8 of the Hodges dam strengthening work.

This drawing supersedes the frame set "B" shown on specification drawings. The frame set shown between buttresses 5-6 on the specification drawings is not required to be installed.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p

October 29, 1936

From : Hydraulic Engineer
To : Resident Engineer L. H. Hill
Subject : Hodges Reservoir Dam strengthening, steel
in top horizontal tie

Cracks showing in Hodges dam buttresses 19, 20 and 21 about elevation 285 indicate the necessity for a change in the steel where the top tie contacts the diagonal member. The four 1-1/4" steel bars which on the plans and in the vicinity of the top of the tie should be bent and extended along the top tie. Two of the bars should go about half way along the tie and the other two to the end of the tie. The dowels for the tie should be 3/4" extending 12 inches into the buttress and 10 inches into the tie and should be placed 2 feet on centers.

The first 6 feet of the buttress under the top diagonal beginning at the intersection of the diagonal with the tie should be chipped and roughened.

The cracks where they are in evidence should be painted under the diagonal for a distance of 2-1/2 feet each side of the crack.

The change in the steel and the dowels should be the same for all top ties regardless of whether cracks are in evidence or not.

Fred D. Pyle

**COLUMBIA STEEL COMPANY - Torrence Works
Physical Testing Laboratory**

Test No.	Material	Heat No.	Original size		Yield point		Ultimate strength		Elongation		Fracture	Bend C	Chemical Analysis			
			size	area	Load lb	lb/sq in.	load lb	lb/sq in.	in.	%			Mn	P.	Si.	
	1-1/4sq. Inter	11994	1.243 1.240	1.539	82460 53650	53650	120900	78500	1.65	20.6	1/2C	OK	34	56	028	048
	" " "	11993	1.247 1.248	1.555	78340	50050	121970	78250	1.25	15.6	irreg	"	34	55	027	038
	" " "	12041	1.247 1.250	1.557	79340	50800	120410	77100	1.55	19.3	"	"	34	60	019	040
	" " "	23766	1.247 1.250	1.560	77830	49750	123760	78900	1.45	18.1	1/2C	"	35	52	026	047
	7/8 φ	33026	.878	.605	29640	48800	46040	76000	1.80	22.5	"	"	32	55	022	040
413	"	12027	.880	.610	31140	51050	46800	76750	1.90	23.7	3/4C	"	32	50	020	036
	"	12020	.878	.605	30200	50000	47360	78100	1.60	20.0	1/2C	"	34	53	020	038
	5/8 φ	11998	.634	.316	17380	55100	25750	81600	1.45	18.1	1/2C	"	31	51	016	037
	3/8 φ	32824	.371	.108	6090	50500	7810	72450	1.75	21.9	C	"	28	47	016	032

CITY OF SAN DIEGO TESTING LABORATORY

Lab.No.	Size	Grade	Tensile Strength lb/sq.in.		Percent elongation in 8 inches
			Yield point	Ultimate	
24201	1-1/4 sq.	intermediate	48600	79100	25.6
24202	7/8 rd.	"	50200	80800	24.4
24203	5/8 rd.	"	50200	77400	22.5
23945	3/4 sq.	structural	47800	64300	28.7
23946	7/8 sq.	"	38000	56200	30.6
23947	1-1/4 sq.	"	38000	58500	30.0

CONCRETE

May 2, 1936

From : Testing Engineer
To : Hydraulic Engineer
Subject : Pave-cure produce for concrete curing

Sample of this product, brought in from the Hodges dam job, where the contractor is reported as desiring to use it, is listed as Lab. No. 23973.

In conversation with Mr. Beermann, he requests a visual examination of the material, without going to the extent of taking time for a set of tests such as has previously been made on this and similar products. For this purpose a coating was applied to a concrete specimen (No. 23971 of a set from Hodges after testing).

It is a comparative thin liquid when coming out of can (being an emulsified product, as I recall) but thickens and dries very quickly on exposure to the air. It sticks and clogs in a brush and is not suitable for application by that method. On standing over night, it hardens to a smooth, glossy surface, with only a very slight sticky feel.

I believe it is a suitable product for the purpose intended, provided that care is taken during the process of application, to see that the coating is applied uniformly, and of sufficient thickness to completely coat the surface on which it is used.

J. Y. Jewett
Testing Engineer

JYJ/b

May 4, 1936

Mr. M. H. Golden, Contractor
531 Bank of America Building
San Diego, California

H-17

Subject: PWA Docket Calif. 1223-R
Hodges Reservoir Dam Strengthening
Curing concrete

Dear Sir:

Receipt is acknowledged of sample of "Pave-cure" proposed to be used by you in connection with Hodges reservoir dam strengthening. The material submitted is satisfactory and may be used for concrete curing purposes.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

PB/p

SUMMARY OF CONCRETE TESTS
Mix 1 - 2 - 4

Date taken	Lab. No.	Job No.	Location	Compressive strength Lb/sq.in. Period		
				7 days	28 days	3 mos.
				1130	2380	2490*
5-4-36	23971	8-10	Spillway slab	1240	2570	3100
5-7-36	23952	5-7	Cutoff wall	1870	3300	3620
6-16-36	24106	11-13	Set D Bay 15-16	1480	2730	3160
7-7-36	24179	14-15-16	Set C Bay 9-10	1350	2840	3320
8-14-36	24279	20-22	Horiz. Tie Bay 9-10 between B & C	1530	2950	3540
9-29-36	24395-6-7	24-25-26	Set B Bay 13-14	1090	2430	3030
10-15-36	24421-2-3	27-28-29	Set B Bay 7-8			
11-6-36	24448-9-50	30-31-32	Set B Bay 11-12	(10 days) 2850	3120	3660
11-25-36	24474-5-6	34-35-36	Bay 21-22, diagonals	1160	2730	3550 **
12-5-36	24492-3-4	37-38-39	Bay 9-10, Set A	2200	3990	4290 ***
12-14-36	24495-6-7	40-41-42	Top anchorage; Buttress 19	1790	2690	4130

* Falls short of the 3000 lb. expected at this period. Does not show the usual rate of increase from 28 day to 3 month period.

** 7-day result probably shows effect of lower temperature conditions during early period of storage.

*** These results unusually high at all periods.

417

CEMENT

Warner Springs, Aug. 12, 1935

Mr. Fred Pyle
Hydraulic Engineer
City of San Diego, Cal.

Dear Mr. Pyle:

Mr. Cromwell telephones that you desire to know whether the water company is disposed to reassume the obligation to assist the City of San Diego in the repair of Hodges Dam, as stated in an agreement between the company and the City, dated Oct. 16, 1933. This agreement has lapsed by reason of the failure to start the work of repair as therein provided.

The company is willing to enter into a new agreement in similar terms calling for a payment of \$2,000 per year during the life of the Lease-Option contract, provided repair work is started before Jan. 1, 1936.

At one time, while the city was struggling with the problem of ways and means of financing this work, I undertook on behalf of the company, in conversations with Mr. Byers, City Attorney, to discount the future payments provided for in the agreement. I cannot renew this offer at the present time, as the sum involved has been used for other company purposes.

I will however undertake to furnish, on behalf of the company, the amount of Portland cement required for the repairs - that is, the company will enter a bid for your cement requirements in the usual way and if the cement order is awarded to it, an agreement can then be entered into whereby payment will be offset against the annuity provided for in the proposed agreement referred to in the second paragraph of this letter. Of course this advance payment, in the form of cement, or in cash, if it takes that form, will be upon a discounted basis, correctly reflecting the present worth of money at 6%.

Will you kindly have two copies of this letter made, sending one copy to Mr. Cromwell and one to me at this address, where I am spending my vacation. I have no facilities here for making copies conveniently.

With very kind regards, I beg to remain,

Sincerely yours
JOHN TREANOR (Signature)
President San Diego Water Supply Co.

3-9-37
copy/P

August 14, 1935

Mr. John Treanor
Warner Springs
California

Subject: San Dieguito River Project
Hodges reservoir dam strengthening

Dear Mr. Treanor

Receipt is acknowledged of and you have my appreciation for your letter dated August 12, 1935 stating that the San Diego Water Supply Company is willing to enter into a new agreement to take the place of the agreement dated October 16, 1933, which has lapsed, in connection with Hodges reservoir dam strengthening.

In compliance with your respected request, enclosed is copy of your letter. A copy has also been sent to Mr. Cromwell.

Very truly yours

Fred D. Pyle
Hydraulic Engineer

FDP/f
encl.
cc George Cromwell

Tests of Low Heat Cement in accordance with U.S.R.S. Specification #568
 Laboratory of Riverside Cement Company, Riverside
 California

Silo	Date Sampled	Chemical Analysis								Physical Tests										
		SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	CaO	MgO	SO ₃	Loss	Insol	Percent				Percent Passing mesh	Specific Surface cm. 2/gm. Sample No.	Setting Time Ini- Fin- tial al	Sound- ness	Compress- ive Strength 3-day 7-day	7-day heat evol- ution cal. per gm	
										C3S	C3A	C2S	C4AF	100	200					
21	4-10-36	21.08	5.27	5.67	59.38	3.84	1.74	2.27	0.08	33	4	36	17	99.8	96.7	1 2165 2 2188 3 2202 4 2190 5 2150	2:50 5:40	OK	2029 3173	64.7
14	5-8-36	21.16	5.34	5.84	59.71	3.52	1.68	2.05	0.09	33	4	36	18	99.8	96.5	1 2010 2 1930 3 1910 4 2030	3:00 6:35	OK	2087 3120	59.0
21	7-20-36	21.58	5.03	5.85	59.52	4.00	1.92	1.38	0.19	30.7	3.4	47.5	17.3	99.8	96.7	1 2030 2 2080 3 2000 4 2060 5 2010	3:00 6:00	OK	1837 2661	55.8
14	9-18-36	21.20	5.32	5.78	59.38	4.08	1.90	1.81	0.16	31.21	4.32	37.2	17.6	99.6	95.3	1 1964 2 1905 3 1940 4 2000	3:15 7:30	OK	2090 3370	56.3

Specific surface values determined on a Wagner Turbidimeter as provided for in Specifications 566 of the Bureau of Reclamation.

Meet Specification requirements.
 J.Y.J.

AGGREGATES



September 11, 1934

From : Testing Engineer
To : Hydraulic Engineer
Subject : Concrete aggregates for Hodges Dam.

Samples of prospective materials for concrete aggregates for use in Hodges Dam repair work, taken on July 31st, by Paul Beermann and the writer, have the following listing.

Lab.
No.

- 22989 - Sand from side wash, east of Bernardo River, near upper end of Lake. This is the supply referred to in last paragraph of letter to your office of July 13th. Sample was taken from pit about 5 feet in depth, discarding top layer of one foot which contains some earthy matter. Depth of deposit beyond five feet is unknown. Location of this pit at point where depth seemed suitable for working purposes, is in vicinity of fence crossing, nearly opposite first house on road leading up the wash; and about three-fourths mile distant from County road leading from San Diego-Escondido highway to Fenton's ranch.
- 22990 - Sand from Webb Bros. plant, Escondido. Source of supply Escondido Creek. Sand from this source was used by Contractor Daley on paving of County highway north of Escondido in 1921, and gave good results under test at that time.
- 22991 - Rock from same plant. This Nos. 3-5, respectively.
22993 - Supply from Calavera quarry. In the early part of 1929 test and examination of rock from this quarry was made for the local engineering firm of Watson, Valle & Gough; and the plant was visited with Paul Watson at that time. The material in use was found to be surface material from a talus slope at the foot of a hill, and no quarry face, with discard of surface material, had been opened up. The main characteristics of this rock at that time were a low specific gravity and an extremely wide range of hardness among the individual fragments. In this latter respect the following quotation from report on the material shows its similarity to the general gravels in this vicinity.

"The crushed rock from the Calavera plant is similar in nature to the general gravels of this vicinity, in that it is composed of material of a wide range of hardness among the individual fragments, when examined with a hammer; some pieces being extremely hard and tough, and others having about the consistency of half baked clay, easily broken down under a hammer, and the small fragments easily pulverized under a trowel."

Comparative tests for compressive strength with Otay gravel showed similar results for both. An extensive series of tests previously made, as relating to this particular feature, indicated that the soft and friable fragments included with the harder portions, do not materially affect the compressive strength. Such material however, makes for a lack of uniformity; and it would seem, as relating to other features, such as effects of impact or abrasion, it would be objectionable. The present samples show the same two features above listed, as characteristic of this material.

22994 Sand from Hazard's plant below dam, from west and east
22995 - piles, respectively.

22996 Rock from same plant, 1 1/2" and 1" maximum sizes, res-
22997 - pectively. This is a hard rock of high specific gravity. It tends to break in blocky, angular fragments, and would tend to produce a harsh working mix, but would make a heavy, high strength concrete if suitably manipulated.

SUMMARY:-

The several sand samples show a good grading of sizes, and, in general, indicate a satisfactory material. The high silt and clay content in the samples from Hazard's plant, I do not think would be objectionable if used in combination with the harsh working rock from that plant.

Aside from its harsh working properties, the rock from that plant is a high grade product, as compared with the Calavera supply; and if the plant can turn it out in suitable sizes and quantities, its use is recommended. As I recall, when taking the samples, there was some question as to what could be done with regard to operating the plant. If complete supply from this source is not available, supply from some of the local producing plants might be considered as the next available source.

J. Y. Jewett

JYJ/b



Hodges Dam Strengthening

Reservoir Spilling February 7, 1937.

TEN DAY REPORTS

April 11, 1936

From : Hydraulic Engineer

To : The Honorable, the Mayor and Council
of the City of San Diego, California

Subject : P.W.A. Docket Calif. 1223-R Hodges Reservoir Dam
Strengthening. L. H. Hill, Resident Engineer

APRIL - FIRST TEN DAY PERIOD REPORT

WEATHER: April 1 and 2 - clear; 3 - partly cloudy and cold;
4 - 0.25 inch rain; 8 to 10 - clear and warm.

ENGINEERING AND INSPECTION: Line and grade stakes were set for the spillway apron excavation. Numbers were painted on the buttresses. The elevation of the ground vicinity of all strengthening members was determined and plotted.

CONTRACTOR'S OPERATIONS: Contractor M. H. Golden erected a field office and tool shed and is constructing a 10'x14' office for use of the P.W.A. Engineer-Inspector. Excavation for the spillway apron is about 50 per cent completed. A small amount of excavation has been made for the footings for the vertical reinforcement. Ladders are being constructed on the downstream face of the buttresses to prepare for erection of scaffolding.

CONTRACTOR'S FORCES: The Contractor's force increased from 5 men when work commenced on April 2, 1936 to 22 men on April 10. Average for the period 12 men.

CITY FORCE: L. B. Hayward and crew of 3 men completed a small office for use of City force on April 10.

VISITORS: The project was visited on April 9, 1936 by a number of interested persons and the work was formally started. Among those present were the following: Councilman Walter C. Wurfel; Water Commissioner S. I. Fox; Directors Carl Bertschinger and J. G. Caulcombe, Manager W.O. Boettiger of the Santa Fe Irrigation District; President Arthur L. Fox and Secretary E. B. Parke of San Dieguito Chamber of Commerce; Contractor Morley H. Golden; Assistant City Attorney H. B. Daniel; Hydraulic Engineer Fred D. Pyle; Assistant Engineer P. Beermann and Supervisor R. C. Wueste.

WORK CONTEMPLATED DURING NEXT TEN DAYS:
Complete spillway apron excavation.
Advance excavation for vertical reinforcement footings.
Construct false work for forms.

Respectfully submitted,

Fred D. Pyle
Hydraulic Engineer

April 21, 1936

From : Hydraulic Engineer

To : The Honorable, the Mayor and Council of
The City of San Diego, California

Subject : P.W.A. Docket Calif. 1223-R Hodges Reservoir Dam
Strengthening. L. H. Hill, Resident Engineer

APRIL - SECOND TEN DAY PERIOD REPORT

WEATHER: Cloudy and cool during the entire period.

ENGINEERING AND INSPECTION: Cross sections were taken and grades set for the spillway apron excavation. Elevation of cut points were established for the diagonal reinforcement. Painting of numbers on the buttresses was completed. Contractor's blue prints for a portion of the steel were checked and a list was made of reinforcing bars in the spillway apron and cutoff wall.

CONTRACTOR'S OPERATIONS: Contractor M. H. Golden constructed roads and trails on the work. A plank ramp was erected to the crest. Spillway apron and cutoff wall excavation completed, except for cleaning. Some excavation was made for vertical reinforcing members. Some ladder ways and cat walks were constructed. 2400 sacks of cement were delivered on the work by the contractor.

CONTRACTOR'S FORCES: The Contractor's force averaged about 22 men for the period.

EQUIPMENT: The following equipment is now on the work: 2 portable compressors, 4 jackhammers, 1 electrically operated compressor, 1 electrically operated pump, 1 caterpillar 60 bulldozer, 1 one-yard capacity paving mixer.

VISITORS:

April 15 - Andrew Weiss, Consulting Engineer for Mexican Government, Mexico City, Mexico
Adolfo Urin Alba, Chief Engineer and General Manager Rodriguez Dam
Cesar Jemenez, Engineer, Mexico
J. G. Valenzuela, Engineer, Mexico
" 16 - W. H. Holmes, Assistant Deputy State Engineer
P. Beermann, Assistant Engineer
" 17 - E. E. Bullard, Assistant Chief Engineer PWA
C. A. Tufft, Engineer-Inspector PWA
" 18 - L. J. Comett, Superintendent Emsco Concrete Cutting Corporation, Los Angeles

Respectfully submitted,

Fred D. Pyle
Hydraulic Engineer

May 1, 1936

From : Hydraulic Engineer
To : The Honorable, the Mayor and Council
of the City of San Diego, California
Subject : P1W.A.Docket Calif.1223-R Hodges Reservoir Dam
Strengthening. L. H. Hill, Resident Engineer

APRIL- THIRD TEN DAY PERIOD REPORT

WEATHER: Clear and warm during the period.

ENGINEERING AND INSPECTION: The taking of cross sections and setting of grades for excavation of spillway apron and cutoff wall were completed. Location of bottom points for the diagonal reinforcing was established and buttresses marked to indicate depth of excavation. The extent of chipping and location of keyways and drill holes for tie bars were indicated for a portion of both diagonal reinforcing and vertical frames. The Contractor's detail for first order of reinforcing steel was checked. Layout sheet of reinforcing steel used in spillway apron and cutoff wall was made.

CONTRACTOR'S OPERATIONS: Contractor M. H. Golden completed the spillway apron and cutoff wall excavation; placed reinforcing steel and completed placing concrete on April 27, 1936. The spillway apron and cutoff wall are now complete except for keeping the concrete wet. Excavation was commenced for diagonal and vertical reinforcing. Excavation for several of the vertical frames was completed and drilling commenced on anchor holes. Chipping of concrete, making of keyways and drilling of holes thru buttresses for tie rods was commended.

CONTRACTOR'S FORCES: Average - about 25 men during period.

EQUIPMENT: 21 cubic foot capacity electrically operated stationary mixer, electrically operated stationary compressor; pumperete machine; electrically operated pump; 4 jackhammers; electrically operated hoist and gas operated pump.

VISITORS:

April 22 - Fred D. Pyle, Hydraulic Engineer
23 - F. M. Stanley, Chief Clerk-Accountant
P. Beermann, Assistant Engineer
M. H. Golden, Contractor
24 - Fred D. Pyle, Hydraulic Engineer
25 - W. H. Holmes, Assistant Deputy State Engineer
27 - W. A. Stebbins, Sup't. Fenton Material Company
28 - P. Beermann, Assistant Engineer

Respectfully submitted
Fred D. Pyle
Hydraulic Engineer

May 11, 1936

From : Hydraulic Engineer
To : The Honorable, the Mayor and Council
of the City of San Diego, California
Subject : P.W.A. Docket Calif. 1223-R Hodges Reservoir Dam
Strengthening. L. H. Hill, Resident Engineer

MAY - FIRST TEN DAY PERIOD REPORT

WEATHER: Clear and warm throughout the period.

ENGINEERING AND INSPECTION: Marking out of diagonal and vertical reinforcing members was continued; establishment of lines and grades. Location of keyways, chipping and drilling holes were continued. A number of drill holes for anchors under vertical frames were located. Cross sections were plotted of diagonal reinforcement and computations made to determine quantities of excavation and concrete for spillway.

CONTRACTOR'S OPERATIONS: Contractor M. H. Golden continued excavation for vertical and diagonal reinforcement footings from buttresses 9 to 22. Pumps were installed and operated to unwater the excavation. Excavation for vertical frames was completed to solid rock between buttresses 15-16 and 17-18 and forms for footings constructed. Cleaning, cutting and bending steel was continued. Cutting keyways, chipping and drilling holes through buttresses for tie rods was continued.

CONTRACTOR'S FORCES: Average about 38 men for the period.

VISITORS:

May 1 - Fred D. Pyle, Hydraulic Engineer
F. M. Stanley, Chief Clerk-Accountant
P. Beermann, Assistant Engineer
8 - Fred D. Pyle, Hydraulic Engineer
F. M. Lockwood, Purchasing Agent
W. H. Holmes, Assistant Deputy State Engineer
9 - P. Beermann, Assistant Engineer

Respectfully submitted

Fred D. Pyle
Hydraulic Engineer

May 21, 1936

From : Hydraulic Engineer
To : The Honorable, the Mayor and Council
of the City of San Diego, California
Subject : P.W.A.Docket Calif.1223-R Hodges Reservoir Dam
Strengthening. L. H. Hill, Resident Engineer

MAY - SECOND TEN DAY PERIOD REPORT

WEATHER: Clear and warm during the period.

ENGINEERING AND INSPECTION: Cross sections were taken for the footing for a number of vertical members; keyways and drill holes were laid out for both vertical and diagonal members. Sketches were made showing the location of Set "B" between buttresses 5-6 and 7-8 for submission to the State Engineer, it being indicated that the frame between Buttresses 5-6 might be omitted.

CONTRACTOR'S OPERATIONS: Contractor M. H. Golden continued with excavation of footings for vertical and diagonal members; practically completed excavation from buttresses 10 to 18. Large boulders encountered in excavation for vertical frames slowed down the work considerably because of the necessity of breaking them up by plug and feather methods. The contractor installed a quantity of steel pipe staging and received about 800 built up panel frames for use as concrete forms. The concrete plant, including bins for aggregate, concrete mixer and pumcrete machine, is nearing completion.

CONTRACTOR'S FORCES: Average about 38 men for the period.

VISITORS:

May 11 - Fred D. Pyle, Hydraulic Engineer
Richard Smith, Personnel Director, Civil Service
13 - Fred D. Pyle, Hydraulic Engineer
A. V. Mayrhofer, Water Commissioner
J. M. Anderson, Water Commissioner
A. L. Griffiths, Realtor
15 - M. S. Anderson, Manager Universal Form Clamp Co.
19 - P. Beermann, Assistant Engineer
20 - W. H. Holmes, Assistant Deputy State Engineer
R. W. Flack, City Manager
J. Colquhoun, Budget Officer
Ted Steinman, San Diego Union
Murney Mintzer, San Diego Tribune
Stanley Andrews, Chairman City Lakes Fish & Game Com.
R. C. Wueste, Supervisor Impounding System
Fred D. Pyle, Hydraulic Engineer

Respectfully submitted
Fred D. Pyle
Hydraulic Engineer

June 1, 1936

From : Hydraulic Engineer
To : The Honorable, the Mayor and Council
of the City of San Diego, California
Subject : P.W.A.Docket Calif.1223-R Hodges Reservoir Dam
Strengthening. L. H. Hill, Resident Engineer

MAY - THIRD TEN DAY PERIOD REPORT

WEATHER: Clear and warm throughout the period with the exception of 0.03 inch of rain on May 29.

ENGINEERING AND INSPECTION: Bottom of footing elevations in all sets of vertical reinforcement between buttresses 9 and 20 were plotted. Cross sections and computations of spillway apron excavation and concrete were checked. Contractor's estimate for the month of May was prepared.

CONTRACTOR'S OPERATIONS: Contractor M. H. Golden practically completed excavation for both diagonal and vertical reinforcement from buttress 9 to 18, and started excavation on vertical reinforcement sets between buttresses 19-20 and 21-22. The concrete plant, including aggregate bins, is completed and ready for operation. Cleaning and cutting City-owned steel continues. Chipping of keyways and roughening buttress faces continued. A crane is being constructed for operation on top of the dam.

CONTRACTOR'S FORCES: Average about 34 men for the period.

VISITORS:

May 25 - W. A. Stebbins, Sup't. Fenton Material Co.
C. B. Grove, Trucking Contractor
28 - Fred D. Pyle, Hydraulic Engineer
Allen H. Wright, City Clerk

Respectfully submitted

Fred D. Pyle
Hydraulic Engineer

June 11, 1936

From : Hydraulic Engineer
To : The Honorable, the Mayor and Council
of the City of San Diego, California
Subject : PWA Docket Calif.1223-R Hodges Reservoir Dam
Strengthening, L.H.Hill, Resident Engineer

JUNE - FIRST TEN DAY PERIOD REPORT

WEATHER: Clear and cool for first 7 days; warm for remainder of period.

ENGINEERING AND INSPECTION: Points set for buttress drill holes; keyways and chipping lines marked out on buttresses for vertical and diagonal reinforcement and anchor holes located at the base of columns. Final cross sections checked and quantities computed for excavation and concrete in spillway apron; lengths of tie bars for diagonal reinforcement checked.

CONTRACTOR'S OPERATIONS: Contractor M.H.Golden completed excavation in all sets in bay 19-20 with exception of cleaning out a little silt. All excavation is virtually completed from buttress #9 to #20. Widening of ramp to the aggregate bins has been completed. A craload of reinforcing steel was delivered to the work and all tie bars for vertical and diagonal reinforcement are now at hand. Practically all anchor holes have been drilled. Construction of a crane for operation on top of the dam has about been completed.

CONTRACTOR'S FORCES: The Contractor's force averaged about 33 men for the period.

VISITORS:

June 1 - W.A.Stebbins, Supt.Fenton Material Company
Cecil Grove, Trucking Contractor
" 3 - Dr. Nathan A.Bowers, West Coast Editor
Engineering News-Record
P. Beermann, Assistant Engineer
" 8 - Julien Bournier, PWA Assistant State Engineer
" 9 - Fred D. Pyle, Hydraulic Engineer

Respectfully submitted

Fred D. Pyle
Hydraulic Engineer

June 20, 1936

From : Hydraulic Engineer
To : The Honorable, the Mayor and Council
of the City of San Diego, California
Subject : PWA Docket Calif.1223-R Hodges Reservoir Dam
Strengthening. L.H.Hill, Resident Engineer

JUNE - SECOND TEN DAY PERIOD REPORT

WEATHER: Clear and warm for duration of period with exception of a little fog in early morning.

ENGINEERING AND INSPECTION: Additional cross sections were taken to determine excavation yardage, additional anchor holes were located, keyways were marked for chipping for both diagonal and vertical reinforcing, computations for excavation and concrete quantities were estimated.

CONTRACTOR'S OPERATIONS: Contractor M.H.Golden placed about 290 cubic yards of concrete in the vertical reinforcing and continued with the erection of reinforcing steel and forms. Holes for tie bars for vertical and diagonal reinforcing were drilled and a considerable number of tie bars were placed.

CONTRACTOR'S FORCES: The contractor's forces averaged about 31 men for the period.

VISITORS:

June 12 - M.S.Anderson, Manager Universal Form Clamp Co.
" 13 - Fred D. Pyle, Hydraulic Engineer
P. Beermann, Assistant Engineer
" 15 - W.H.Stebbins, Supt. Fenton Material Co.
Cecil Grove, Trucking Contractor
" 16 - M.H.Golden, Contractor
" 18 - W.H.Holmes, Assistant Deputy State Engineer
P.Beermann, Assistant Engineer
" 20 - M.H.Golden, Contractor

Respectfully submitted

Fred D. Pyle
Hydraulic Engineer

June 30, 1936

From : Hydraulic Engineer
To : The Honorable, the Mayor and Council
of the City of San Diego, California
Subject : PWA Docket Calif.1223-R Hodges Reservoir Dam
Strengthening. L.H.Hill, Resident Engineer

JUNE - THIRD TEN DAY PERIOD REPORT

WEATHER: Clear and warm for the duration of the period.

ENGINEERING AND INSPECTION: Final cross sections were made of completed excavation for strengthening members. Drill holes and keyways were located. Layouts were made of reinforcing steel in diagonal members and lengths of steel and of tie bars determined. Monthly estimate was prepared.

CONTRACTOR'S OPERATIONS: Contractor M.H.Golden. Concrete operations were continued and a number of vertical frames were brought up to elevations ranging from 215 to 232. Tie bars were placed and grouted for diagonal members and the work of placing steel in these members was undertaken. Work of excavating for footings, drilling for anchors and tie bars, and chipping concrete was continued.

The contractor's force averaged about 39 men for the period.

VISITORS:

June 25 - Louis F. Mehl and C.G.Thomas, representing
San Diego Building Trades Council
" 29 - Fred D. Pyle, Hydraulic Engineer
Louis F. Mehl and Henry M. Smith, representing
San Diego Building Trades Council
" 30 - M. H. Golden, Contractor

Respectfully submitted

Fred D. Pyle
Hydraulic Engineer

10-19-36
copy/p

July 11, 1936

From : Hydraulic Engineer
To : The Honorable, the Mayor and Council
of the City of San Diego, California
Subject : PWA Docket Calif.1223-R Hodges Reservoir Dam
Strengthening, L.H.Hill, Resident Engineer

JULY - FIRST TEN DAY PERIOD REPORT

WEATHER: Clear and warm for first 7 days; cooler for remainder of period with a drizzle of rain on July 10.

ENGINEERING AND INSPECTION: Points were set for diagonal reinforcement in bay between buttresses 19-20. Keyways and chipping areas were located on buttresses for diagonal and vertical reinforcement. Anchor holes were located for vertical reinforcement between buttresses 21-22. Monthly estimates were prepared and additional computations made for concrete in vertical and diagonal reinforcing members, to determine the amount of work under each schedule item remaining to be completed.

CONTRACTOR'S OPERATIONS: Contractor M. H. Golden. The pumpcrete machine pipe line was raised to the cat-walk at elevation 264. Vertical reinforcing members between two sets of buttresses have been brought up to elevation 220 or nearly 40 feet above streambed. Concrete was placed in five diagonals to a height of about 6 feet. Excavation for footings, drilling for anchors and tie bars, and chipping concrete was continued.

The contractor's forces averaged about 40 men for the period.

VISITORS:

July 1 - R.C.Wueste, Supervisor
W.H.Holmes, Assistant Deputy State Engineer
" 6 - M.H.Golden, Contractor

Respectfully submitted

Fred D. Pyle
Hydraulic Engineer

July 21, 1936

From : Hydraulic Engineer
To : The Honorable, the Mayor and Council
of the City of San Diego
Subject : PWA Docket Calif.1223-R Hodges Reservoir
Dam Strengthening. L.H.Hill Resident Engineer

JULY - SECOND TEN DAY PERIOD REPORT

WEATHER: Clear and hot for duration of the period.

ENGINEERING AND INSPECTION: Elevation points were set along the main walkway of each buttress. Drill holes were located for diagonal and vertical reinforcement tie bars. Additional excavation cross sections were taken. Areas to be chipped were outlined. Excavation computations were checked. Tests were made on tie bars to determine the length of lever arm and weight to be applied to properly tighten up the nuts in the tie bars after the concrete is set.

CONTRACTOR'S OPERATIONS: Contractor M. H. Golden. Concrete was placed in vertical members in a number of bays and the initial placing of concrete in diagonal members was commenced. About 760 cubic yards of concrete have been placed to date in the strengthening members out of a total of about 3600 cubic yards required. Work of drilling, chipping, placing of tie bars and steel was continued. A small electric vibrator for use in diagonal strengthening was placed in operation; also a small gas-operated mixer for mixing grout.

The contractor's force averaged about 54 men.

Telegraphic approval was received from PWA on July 17, 1936, permitting the contractor to change the hours of work from 130 per month to 40 per week.

VISITORS:

July 11 - Fred D. Pyle, Hydraulic Engineer
P. Beermann, Assistant Engineer
" 15 - C.E.Carr, Assistant Director PWA
" 17 - W.H.Holmes, Assistant Deputy State Engineer
M.H.Golden, Contractor
" 18 - P.Beermann, Assistant Engineer
N.Coote, Draftsman
Ray Mathewson, Manager U.S.Employment Bureau

Respectfully submitted

Fred D. Pyle
Hydraulic Engineer

10-19-36
copy/p

August 1, 1936

From : Hydraulic Engineer
To : The Honorable, the Mayor and Council
of the City of San Diego, California
Subject : PWA Docket Calif.1223-R Hodges Reservoir
Dam Strengthening. L. H. Hill, Resident Engineer

JULY - THIRD TEN DAY PERIOD REPORT

WEATHER: Considerably cooler; July 25, 26 and 27 light showers fell, principally at night.

ENGINEERING AND INSPECTION: Chipping areas were outlined on buttresses for both diagonal and vertical reinforcement, drill holes through the buttresses were located and measurements taken for the monthly estimate.

CONTRACTOR'S OPERATIONS: Contractor M. H. Golden placed concrete in vertical members in all bays from 9-10 to 17-18 to elevation 240 and bay 19-20 to elevation 233. Concrete was placed in a number of diagonal reinforcing members. To date about 986 cubic yards of concrete have been placed in vertical reinforcing members and 65 cubic yards in the diagonal reinforcing members. Better progress was made during the last ten days than during any other period.

Contractor's force averaged about 50 men.

VISITORS:

July 24 - Louis Mehl, United Trades Council
25 - Fred D. Pyle, Hydraulic Engineer
P. Beermann, Assistant Engineer
Roy Ferguson, Assistant Manager U. S. Employment
Service
29 - W. R. Morgan, Traveling Engineer PWA
C. E. Ashley, Resident Engineer U. S. Coast Guard
Station
Harvey Chambers, Steel Contractor
B. O. Larsen, General Contractor
31 - R. W. Spencer, Metropolitan Water District of
Southern California

Respectfully submitted

Fred D. Pyle
Hydraulic Engineer

August 11, 1936

From : Hydraulic Engineer
To : The Honorable, the Mayor and Council
of the City of San Diego, California
Subject : PWA Docket Calif. 1223-R Hodges Reservoir Dam
Strengthening. L. H. Hill, Resident Engineer

AUGUST - FIRST TEN DAY PERIOD REPORT

WEATHER: Clear and warm for period excepting August 8 which was cloudy and sultry with heavy showers in early morning.

ENGINEERING AND INSPECTION: Chipping areas were outlined on buttresses for both diagonal and vertical reinforcement. Anchor holes were located in westerly side of Sets A, B and C Bay 21-22. Drill holes were located on buttresses.

CONTRACTOR'S OPERATIONS: Contractor M. H. Golden placed concrete in vertical members in Bay 9-10 to about elevation 253; in Bay 19-20 to about elevation 240. Concreting of diagonal members was advanced on buttresses 12 to 19. Placing of reinforcing steel was advanced in both diagonal and vertical reinforcement from buttress 9 to 19. Drilling of anchor holes and chipping continued.

Contractor's force averaged about 51 men.

VISITORS:

August 4 - W.H.Holmes, Assistant Deputy State Engineer
5 - Herbert Dale, Circulation Representative
WESTERN CONSTRUCTION NEWS
8 - Fred D. Pyle, Hydraulic Engineer
P. Beermann, Assistant Engineer
J. Y. Jewett, City Testing Engineer
10 - Julien Bournier, Assistant Engineer PWA
George W. Hawley, Assistant State Engineer
W. H. Holmes, Assistant Deputy State Engineer
Dr. J. P. Buwalda, Geologist

Respectfully submitted

Fred D. Pyle
Hydraulic Engineer

August 21, 1936

From : Hydraulic Engineer
To : The Honorable, the Mayor and Council of the
City of San Diego, California
Subject : PWA Docket Calif.1223-R Hodges Reservoir Dam
Strengthening. L. H. Hill, Resident Engineer

AUGUST - SECOND TEN DAY PERIOD REPORT

WEATHER: Clear and warm for the duration of the period.

ENGINEERING AND INSPECTION: Final cross sections were taken in all sets of vertical reinforcement in Bay 21-22. Elevation points for diagonal excavation were set on the east side of buttress 22 and on east and west sides of buttress 23. Chipping areas and drill holes were outlined on buttress faces. Some anchor holes were located in set A, Bay 7-8. Final cross sections of Sets A, B and C bay 21-22 were plotted. Drawing showing top anchorage of the diagonal reinforcement was made.

CONTRACTOR'S OPERATIONS: Contractor M. H. Golden. Concrete placed to about elevation 253 in bays 9-10 to 15-16 and horizontal ties at elevation 240. Initial placement of concrete was made in all sets of bay 21-22. Concreting of diagonal members advanced on buttresses 10, 11, 13 and 14. Placing of steel continued. Drilling of anchor holes and chipping continued.

Contractor's force averaged about 35 men.

VISITORS:
August 12 - J.J.Predergast, President Bear Valley Mutual
Water Company, Redlands
Horace P. Hinckley

Respectfully submitted

Fred D. Pyle
Hydraulic Engineer

September 1, 1936

From : Hydraulic Engineer
To : The Honorable, the Mayor and Council of
The City of San Diego, California
Subject : PWA Docket Calif. 1223-R Hodges Reservoir
Dam Strengthening. L.H.Hill, Resident Engineer

AUGUST - THIRD TEN DAY PERIOD REPORT

WEATHER: Clear and warm for the duration of the period.

ENGINEERING AND INSPECTION: Chipping areas and drill holes were outlined on buttress faces. Forms for both diagonal and vertical reinforcement were checked. Grade and alignment points were given in sets A and B of bay 7-8. Residence eligibility of contractor's forces was investigated. Contractor's estimate No. 5 for the month of August was prepared.

CONTRACTOR'S OPERATIONS: Contractor M.H.Golden. Concrete placed in bays 9-10, 11-12, 13-14, 15-16 and 17-18 to about elevation 253 in Sets A, B and C. In bays 9-10, 15-16 and 17-18 sets D have been completed and diagonal members advanced to about elevation 247. In bay 19-20 concrete has been placed to elevation 240 in Sets A, B and C. In bay 21-22 concrete has been placed to elevation 260. All vertical chipping has been completed in sets C and D from bay 9-10 to bay 21-22. Chipping for diagonal strengthening has been advanced to about elevation 265 from Bay 9-10 to 19-20. Holes for tie bars in vertical reinforcement have been drilled at all sets of bays 9-10, 13-14, 15-16, 17-18 and 21-22 at elevation 257.5. Holes for tie bolts in diagonal reinforcement have been drilled to about elevation 259 in buttresses 9 to 20.

Contractor's men averaged about 54.

VISITORS:

August 22 - W.H.Holmes, Assistant Deputy State Engineer
P. Beermann, Assistant Engineer
26 - H.W.Patten, Special Agent, Division of
Investigations, PWA
28 - W.H.Holmes, Assistant Deputy State Engineer
Fred D. Pyle, Hydraulic Engineer
29 - P. Beermann, Assistant Engineer
Harry Haelsig, City Planning Commission employee

Respectfully submitted

Fred D. Pyle
Hydraulic Engineer

September 11, 1936

From : Hydraulic Engineer
To : The Honorable, the Mayor and Council of the
City of San Diego, California
Subject : PWA Docket Calif. 1223-R Hodges Reservoir
Dam Strengthening, L. H. Hill, Resident Engineer

SEPTEMBER - FIRST TEN DAY PERIOD REPORT

WEATHER: Clear and warm for duration of the period except heavy showers early morning of September 4, 0.06 inch of rain.

ENGINEERING AND INSPECTION: Final cross sections were taken in sets A and B of bay 7-8. Drill holes were located on buttresses for both diagonal and vertical reinforcement. Chipping areas were outlined on buttress faces.

CONTRACTOR'S OPERATIONS: Contractor M. H. Golden. Concreting of all of sets D has been completed excepting in bay 11-12. Concreting of diagonals in vacant bays and placement of steel have been advanced. The contractor worked only five days this period because of the 160-hour per month restriction.

Contractor's force averaged about 53 men during the working days of the period.

VISITORS:

September 4 - Fred D. Pyle, Hydraulic Engineer
F.M.Lockwood, City Purchasing Agent
A.P.Blake, Representing Rock-Hesion Company
A.J.Gates, do
N.C.Gower, do

Respectfully submitted

Fred D. Pyle
Hydraulic Engineer

September 21, 1936

From : Hydraulic Engineer
To : The Honorable, the Mayor and Council of the
City of San Diego, California
Subject : PWA Docket Calif. 1223-R Hodges Reservoir Dam
Strengthening. L. H. Hill, Resident Engineer

SEPTEMBER - SECOND TEN DAY PERIOD REPORT

WEATHER: Clear and warm for duration of period except the nights were considerably cooler.

ENGINEERING AND INSPECTION: Drill holes were located on buttresses for vertical and diagonal reinforcement and chipping areas were outlined on buttress faces. Computation indicates that to date 3,631 cubic yards of concrete have been placed in the dam reinforcing.

CONTRACTOR'S OPERATIONS: Contractor M.H.Golden. Excavation for diagonal members was continued. Concrete has been placed in vertical reinforcement to about elevation 260 from bay 9-10 to 17-18. Placing of concrete in diagonal members of vacant bays continued. A number of tie bolts in diagonal reinforcement were placed and grouted. The steel crew continued placing reinforcing steel. Holes for tie bolts have been drilled to elevation 287 for diagonal reinforcement in buttresses 9 to 12. In the remaining buttresses drilling has reached elevation 259. Chipping of concrete has continued.

Contractor's force averaged 49 men during the period.

VISITORS:

September 12 - C.A.Tuffts, PWA Traveling Engineer
18 - Fred D. Pyle, Hydraulic Engineer
A.V.Mayrhofer, Chairman Water Commission
J.M.Anderson, Member Water Commission
O.E.Darnall, Realtor
W.H.Holmes, Assistant Deputy State Engineer
J.P.Buwalda, Geologist.

Respectfully submitted

Fred D. Pyle
Hydraulic Engineer

October 1, 1936

From : Hydraulic Engineer
To : The Honorable, the Mayor and Council of the
City of San Diego, California
Subject : PWA Docket Calif. 1223-R Hodges Reservoir Dam
Strengthening, L.H.Hill, Resident Engineer

SEPTEMBER - THIRD TEN DAY PERIOD REPORT

WEATHER: Clear and warm during the entire period.

ENGINEERING AND INSPECTION: Drill holes were located on buttresses for vertical and diagonal reinforcement and chipping areas were outlined on buttress faces. Monthly estimate was prepared.

CONTRACTOR'S OPERATIONS: Contractor M.H.Golden. No excavation work was done during the period. Concrete has been placed to about elevation 273 in vertical reinforcement in bays 9-10, 11-12 and 13-14, and in all other bays to elevation 260 or more. Concreting of diagonal reinforcement was advanced in the vacant bays. The steel crew continued placing reinforcing steel. Chipping of concrete continued.

Contractor's force averaged about 52 men during the period.

VISITORS:

September 22 - Fred D. Pyle, Hydraulic Engineer
Dr. Nathan A. Bowers, Pacific Coast Editor
ENGINEERING NEWS-RECORD
24 - J.P.Munch, PWA Auditor
26 - P.Beermann, Assistant Engineer
T.V.Huff, Welding Inspector

Respectfully submitted

Fred D. Pyle
Hydraulic Engineer

October 11, 1936

From : Hydraulic Engineer
To : The Honorable, the Mayor and Council of the
City of San Diego, California
Subject : PWA Docket Calif. 1223-R Hodges Reservoir Dam
Strengthening, L.H.Hill, Resident Engineer

OCTOBER - FIRST TEN DAY PERIOD REPORT

WEATHER: Clear and warm during the period.

ENGINEERING AND INSPECTION: Drill holes were located on buttresses for vertical and diagonal reinforcement. Chipping areas were outlined on buttress faces. Concrete quantities in both diagonal and vertical reinforcement were checked.

CONTRACTOR'S OPERATIONS: Contractor M. H. Golden. No excavation work was done during the period. Concrete has been placed to about elevation 273 in vertical reinforcement in bays 9-10 to 19-20. Diagonals in vacant bays were advanced with two being carried to about elevation 270. A number of tie bolts and plates were placed and grouted. The placement of reinforcing steel continued. Diagonal chipping has been completed on buttresses 9 to 17.

Contractor's force averaged about 52 men during the period.

VISITORS:
October 2 - Fred D. Pyle, Hydraulic Engineer
Henry P. Schoeller, Palmdale, California

Respectfully submitted

Fred D. Pyle
Hydraulic Engineer

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