

of the dam which had to be completed before the tunnel excavation could be deposited in rock embankment.

The total of items 9 and 14, tunnel excavation, according to contract schedule, was \$151,500. The total of these items as of April 30, 1933, with over 95 per cent of the work completed, is estimated to be \$180,000. Consequently, the increase in cost of tunnel excavation will be about \$28,500 instead of the \$107,360 as indicated by item 14 when considered by itself. The increase in the total quantity of tunnel excavation is due to increase in length of timbered sections required as the work progressed and to the swell on the material wasted.

The same facts and factors apply to the excess indicated on items 11 and 12, except that they are not as near completion as the tunnel excavation and the totals are so far not so definitely comparable.

The various excavation and embankment item quantities are interconnected because as certain items are increased, others are decreased.

Following is a comparison of the contract schedule quantities and costs according to contract schedule, and according to estimate for April 30, 1933.

When designing and preparing the specifications for El Capitan Reservoir Dam, Spillway and Outlet Works, it was planned and anticipated that a great majority of the structure excavation would go into the dam embankment. This is indicated by the following summation from the schedule quantities showing quantities of the various classes of excavation which it was expected would go into the embankment or be wasted respectively, and estimated costs:

Schedule Item	Material	Estimated quantities cubic yards	
		Embankment	Waste
1 & 10	Rock originating in structure excavation.....	40,000	20,000
3 & 11	Earth, overburden, etc. originating in structure excavation.....	350,000	34,000
4	Earth, overburden, etc. originating in structure excavation.....	50,000	0
7 & 12	Excavation originating in cutoff trenches under dam.....	12,000 x	1,000
8 & 13	Excavation originating in cutoff trenches under spillway.....	5,000 xx	500
9 & 14	Tunnel excavation.....	30,000 xxx	300
Totals		487,000 89.7%	55,800 10.3%
Total excavation		542,800	

	Embankment	Waste
Cost of excavation originating in structure excavation	\$ 393,500	\$ 33,750
x 50% in embankment Class 1, 50% in embankment Class 2		
xx All in embankment Class 2		
xxx All in embankment Class 1		

The following indicates the estimated quantities of embankment required from quarry and borrow pits, and the costs:

Schedule Item	Material	Estimated quantities Embankment Cubic Yards
2	Rock embankment, originating in quarry	800,000
5	Hydraulic fill, originating in borrow pit	1,000,000
6	Rolled embankment, originating in borrow pit	<u>70,000</u>
	Total rock embankment	876,000
	Total other embankment	<u>1,481,000</u>
	Total embankment	2,357,000
	Cost of items 2, 5 and 6 at schedule prices	\$ 1,224,500
	Cost of above 14 items at schedule prices...	\$ 1,651,750
	Cost of remaining schedule items	<u>681,110</u>
	Total cost on basis of contract	\$ 2,332,860

TOTAL ESTIMATE AS OF APRIL 30, 1933

Estimates made as of April 30, 1933 indicate that the excavation quantities, when work is completed, and the costs will be about as follows:

Schedule Item	Material	Embankment cubic yards	Waste
1 & 10	Rock originating in structure excavation.....	40,000	80,000
3 & 11	Earth, overburden, etc. originating in structure excavation.....	570,000	370,000
4	Earth, overburden, etc. originating in structure excavation.....	0	4,000
7 & 12	Excavation originating in cutoff trenches under dam.....	8,000 x	13,800
8 & 13	Excavation originating in cutoff trenches under spillway.....	0	0
9 & 14	Tunnel excavation.....	<u>14,000</u>	<u>22,000</u>

	Embankment	Waste
Total	632,000	489,800
Total	1,121,800	
	56.4%	43.6%

Estimated cost of excavation at schedule prices.....\$ 362,000 \$ 329,900

x 50% in embankment Class 1, 50% in embankment Class 2

58,000 cubic yards excavation, items 1, 7 and 9, placed in embankment equals 74,000 cubic yards.

The following indicates the embankment quantities required from quarry and borrow pits, and costs:

Schedule Item	Material	Embankment Cubic yards
2	Rock embankment, originating in quarry	888,000
5	Hydraulic fill originating in borrow pit	1,086,000
6	Rolled embankment, originating in borrow pit	70,000
	Total rock embankment	962,000
	Total other embankment	<u>1,730,000</u>
	Total embankment	2,692,000

Estimated cost of items 2, 5 and 6 at schedule prices \$ 1,346,000.00
 Estimated cost of above 14 items at schedule prices \$ 2,038,800
 Estimated cost of remaining schedule items 648,542.40

Estimated total cost on basis of estimate of 4-30-33 \$ 2,687,342.40

The above indicates an increase in the contract price of El Capitan Reservoir Dam, Spillway and Outlet Works from \$2,332,860 to \$2,687,342.40 or \$354,482.40 of which \$264,650 is due to additional excavation; \$122,400 is due to additional embankment from quarries or borrow pits, and a decrease of \$32,567.60 due to decreased costs of remaining schedule items. The above increase is offset in part by an allowance of \$199,929 which was specifically provided for contingencies, of which it is now estimated only about \$34,265 will be required for other contingencies than those already encountered.

The principal items of increase are due to the following:

- (a) Increase in stripping of dam foundation, especially in the base of the dam, to meet the mandatory requirements of the California State Engineer.

(b) The amount of material from both tunnel excavation and stripping that had to be wasted was greatly increased because foundation was not ready at the time these materials were being excavated, due to the increased stripping required by the California State Engineer.

(c) All Class 1, 3, 4 and 5 materials wasted were further increased because of swell which had been intentionally not provided for when writing the specifications.

(d) Tunnel excavation quantities were necessarily increased due to increase in length requiring timbering over the length estimated.

(e) Excavation for cutoff trenches under dam was materially increased to meet the requirements of the California State Engineer.

(f) Spillway excavation was greatly increased to meet the requirements of the California State Engineer.

(g) Embankment quantities both Class 1 and Class 2 materially increased due to the additional excavation required for foundation in the base of the dam by the California State Engineer.

(h) Concrete tunnel lining was necessarily materially increased due to increase in tunnel footage requiring timbering and therefore increase in the thickness of lining.

(i) Concrete lining of spillway increased to meet the requirements of the California State Engineer.

(j) Extra work order for construction of road to damsite due to refusal of the San Diego County Supervisors to perform the necessary betterment work to make the two-mile reach of public highway between El Monte Park and El Capitan dam work safe for public travel of the City's forces.

(k) Extra work order for observation wells within hydraulic fill required by the California State Engineer.

The decrease of totals of all items, exclusive of excavation and embankment, is scattered throughout.

In making application to the U. S. Reconstruction Finance Corporation, the costs of the dam, rights of way, road around reservoir and El Capitan-Lakeside Pipeline were estimated as of April 30, 1932, as follows:

EL CAPITAN DAM:

Cost of construction as per contract	\$ 2,332,860	
Contingencies.....	199,929	
Public roads to damsite and by-pass gravel around dam.....	15,350	
Clearing reservoir basin-1096 acres	25,000	
Engineering.....	<u>150,000</u>	\$ 2,723,139

PURCHASE OF RIGHT OF WAY

82,568

RECONSTRUCTION PUBLIC ROAD AROUND SOUTH SIDE OF RESERVOIR:

13 miles road at \$10,700 per mile...	139,000	
Contingencies.....	14,000	
Engineering.....	<u>7,500</u>	160,500

EL CAPITAN-LAKESIDE PIPELINE (not including portion of costs to be paid by La Mesa, Lemon Grove & Spring Valley Irrigation District)

8 miles 48" and 36" pipeline at \$50,000 per mile.....	400,000	
Contingencies.....	40,000	
Engineering.....	<u>20,000</u>	<u>460,000</u>

Total

\$ 3,426,207

The costs to complete the work as of April 30, 1932, are now (April 30, 1933) estimated as follows:

EL CAPITAN DAM:

Estimated cost of construction based on unit bid prices, quantities, revised to 4-30-33.....	\$ 2,687,342.40	
Contingencies and miscellaneous items.....	34,265.02	
Public roads to damsite and by-pass travel around dam.....	15,350.00	
Clearing reservoir basin.....	27,351.58	
Engineering.....	<u>127,689.00</u>	\$2,891,998.00

PURCHASE OF RIGHTS OF WAY

82,568.00

RECONSTRUCTION PUBLIC ROAD AROUND SOUTH SIDE OF RESERVOIR:

13 miles road at \$6,688 per mile....	86,957.00	
Contingencies.....	13,043.00	
Engineering.....	<u>7,500.00</u>	107,500.00

EL CAPITAN LAKESIDE PIPELINE (not including portion of costs to be paid by Irrigation District)

8 miles 48" and 36" pipeline at		
\$50,000 per mile.....	\$	400,000.00
Contingencies 10%.....		40,000.00
Engineering.....		<u>20,000.00</u>
		<u>460,000.00</u>
	Total	\$3,542,066.00

The above indicates an increase in the total cost of the project as estimated in the original application to the U. S. Reconstruction Finance Corporation from \$3,426,267 to \$3,542,066 as now estimated, or \$115,859, due principally to increased foundation excavation and spillway extension required by the California State Engineer.

H. N. Savage
Hydraulic Engineer

HNS/p
cc- City Treasurer

RECONSTRUCTION FINANCE CORPORATION

WASHINGTON

June 30th, 1933.

Mr. J. T. Millan, Treasurer,
San Diego, California.
City of San Diego

Dear Sir:-

Re: Loan Docket No. 119

This is to advise you that Mr. James H. Roper of Oakland California, has been appointed as supervising engineer of the Reconstruction Finance Corporation on the San Diego Water Project and several other California projects which are being financed by the Corporation. It will be Mr. Roper's duty to approve your requisitions for funds before they are forwarded to the Corporation, to investigate and report to the Corporation as to the manner in which funds advanced by the Corporation have been expended, to report to the Corporation as to the progress of the work, and to keep this Corporation closely informed regarding all matters of importance relating to the project and its development. This is not intended to limit or modify the reports you are now submitting to the Corporation.

Mr. Roper's appointment is effective as of June 23, 1933, at a salary of \$6,000 per annum (gross) plus traveling expenses. For your information I wish to advise that one fourth of Mr. Roper's salary and expenses will be charged against the City of San Diego in line with Schedule "A" of the resolution adopted by the Board of Directors of this Corporation on December 12, 1932, authorizing a loan of \$2,350,000 to finance the carrying out of the San Diego water project.

I shall be glad if you do everything possible to cooperate with Mr. Roper in the carrying out of his duties.

Very truly yours,

JOHN LYLE HARRINGTON (signed)

Member, Engineers' Advisory Board

Copy to: Mr. H. H. Savage, Chief Engineer,
San Diego, California

STAGE VI

OPERATION REPORT
REPORT OF REVENUES AND EXPENDITURES

Loan Docket No. _____

As of June 30, 1933

BORROWER City of San Diego, California Amount of Loan _____

PROJECT El Capitan Reservoir Dam, Spillway and Outlet Works

Date of completion and acceptance of project _____ 19____

Project in progress of construction

R.F.C. Loan Outstanding June 30, 1933 \$ 240,000.00

Other obligations outstanding June 30, 1933 14,076,913.26

Statement of income and expense for 12 months period ending 6-30-33

1. Operating income		1,613,292.72
2. Income from other sources		0
3. Total gross income		1,613,292.72
4. Operation and Maintenance Costs		
Salaries and labor	\$200,324.65	
Materials of operation	60,830.22	
Power	48,882.98	
Repairs and maintenance (materials)	26,226.92	
Other expenses	60,001.42	
Total O. & M. Costs	396,266.19	
Taxes (exclusive of income taxes)	28,062.68	
Insurance	6,205.27	
Depreciation	295,900.42	
Total expense		726,374.56
5. Net operating income		886,918.16
6. Interest (R.F.C. Loan)		0
7. Interest (Other issues)	Due Paid accrued 6-30-33	525,993.14
8. Total interest		525,993.14
9. Net income available for income taxes amortization and surplus account (exclusive of depreciation)		
10. Income taxes		
11. Balance		360,925.02
12. Retirement (R.F.C. Bonds)	Due \$ Paid None	

13. Retirement (other bonds) Due _____ \$
 Paid 430,575.00
 (see foot note)

14. Sinking fund requirements

Balance in fund at beginning of period	\$ _____
Amount paid into fund during period	_____
Total	\$ _____
Disbursements from fund	_____
Balance in fund at end of period	\$ _____

15. Certified copy of financial statements, from which above information has been taken, is attached.

Foot Note - Item 14 - Sinking Fund Requirements:

The City of San Diego provides, in its annual appropriation ordinance, an amount necessary to meet the payments on its bonds maturing in each year, and the interest payments thereon becoming due and payable in that year, and for the installment payments on purchase of water systems. This is a charter provision. A copy of said appropriation ordinance for the fiscal year beginning July 1, 1933 is attached hereto.

16. All major structures are in good condition except Hodges reservoir dam has been required to be strengthened by the California State Engineer (estimated cost \$160,000) and the San Dieguito standby reservoir dam will require strengthening if maximum storage is to be realized.

17. No major additions and improvements are contemplated other than the El Capitan reservoir dam project now under construction and the strengthening of Hodges reservoir dam. Applications are now before the Federal Emergency Public Works Administration for funds.

18. It is not anticipated that there will be a further decrease in revenue. The City has about 40,000 metered consumers and a small increase in consumers has persisted even during the depression years. The water consumption has decreased slightly.

19. Economic changes taking place will probably increase the revenue. Population is still increasing although not at a rate such as in the period 1920-1930. Changes of water rates are subject to City Council action.

STAGE VI

OPERATION REPORT
REPORT OF REVENUES AND EXPENDITURES

Loan Docket No. _____

As of December 31, 1933

BORROWER City of San Diego, California Amount of Loan _____

PROJECT El Capitan Reservoir Dam, Spillway and Outlet Works

Date of completion and acceptance of project _____ 19____

Project in progress of construction

R.F.C. Loan Outstanding December 31, 1933 \$1,257,000.00

Other obligations outstanding December 31, 1933 13,813,835.70

Statement of income and expense for 6 months period ending 12-31-33.

1. Operating income		839,162.13
2. Income from other sources		0
3. Total gross income		839,162.13
4. Operation and maintenance costs		
Salaries and labor	879,233.79	
Materials and operation	29,176.62	
Power	22,925.60	
Repairs and maintenance (materials)	7,088.10	
Other expenses	26,661.26	
Total operation and maintenance costs	165,085.37	
Taxes	10,469.60	
Insurance	3,539.99	
Depreciation (estimated)	142,000.00	
Total expense		321,094.96
5. Net operating income		518,067.17
6. Interest (R.F.C. Loan) Due _____		
Paid _____		
7. Interest (other issues) Due _____		
Accrued 12-31-33	257,753.31	
8. Total interest (see explanation in letter attached)		257,753.31
9. Net income available for income taxes, amortization and surplus account exclusive of depreciation		
10. Income taxes		
11. Balance		260,313.86
12. Retirements (R.F.C. Bonds) Due _____		
Paid _____	None	
13. Retirement (other bonds) Due _____		
Paid _____	225,325.00	
14. Sinking fund requirements		
Balance in fund at beginning of period	_____	
Amount paid into fund during period	_____	
Total	_____	
Disbursements from fund	_____	
Balance in fund at end of period	_____	

See Pg 2434

February 21, 1934

Mr. James H. Roper, Supervising Engineer
Reconstruction Finance Corporation
1022 Pacific National Building
Los Angeles, California

Subject: San Diego River Project, El Capitan
Reservoir Dam, Hydraulic Fill Portion
Construction

Dear Mr. Roper:

Complying with your respected request dated February 9, 1934 for a report to date on the construction of the hydraulic fill portion of the City of San Diego's El Capitan reservoir dam for the information of Mr. H. S. Whitaker of the Reconstruction Finance Corporation:

During the construction of the lower or base portion of the hydraulic fill section of the City of San Diego's El Capitan dam up to about reservoir contour 125, below which the beaches had been relatively wide in comparison to the width of the impervious core section, the Contractor had been permitted to haul in suitable earthy material from local borrow pits and vicinity and dump the dry material down over the inside slopes of both the upstream and downstream rock embankments for saturation, separation and placing in the hydraulic fill portion of the dam by the semi-hydraulic method.

Hydraulicking monitors connected with pumps mounted on barges floating on the summit pool were operated to saturate the material with water and separate it by gravity, the coarser particles remaining on the beaches, the finer being carried down into the impervious puddle core section of the hydraulic fill as required.

As the work proceeded the beaches became relatively shorter and the Contractor was directed to suspend the semi-hydraulic method and to install and use the full hydraulic process of treating and placing the earthy material in the hydraulic fill portion of the structure. This required the pre-saturation of the material in a mixing pool or "hog box" which the Contractor provided in the upper reach of the spillway bowl, into which the dry material as hauled from the borrow pits and vicinity was dumped and abundantly saturated and thereafter by means of a dredge pump lifted and by two independent pipe lines carried down to the hydraulic fill portion of the dam and deposited along the upper edges of the upstream and downstream beaches upon which the coarser portions of the material remained and the fines automatically moved down the slope into the impervious puddle core section of the hydraulic fill.

After installing and operating the full hydraulic equipment between November 29 and December 5, 1933, the Contractor placed about 16,000 cubic yards of the material in the dam.

Mr. James H. Hoyer

--2

2/21/34

Over 1000 samples of the material were obtained which by analysis disclosed the presence of lenses and strata of sand deposited in the impervious core section between November 29 and December 5, 1933.

The Contractor having discovered for himself the objectionable lenses and strata of sand proceeded on January 5, 1934 with machines fitted with dragline buckets and clamshell buckets and with buckets suspended from a slack line, to remove the material from the upper portion of the impervious core section, including the sand lenses and strata and placing it high up on the beaches and hydraulicking and separating the fines and carrying them back into the impervious core section. The excess sand which accumulated on the beaches was removed to a depth of about 3 feet and hauled away and wasted or placed on the outside of the rock embankments for wasting or on the top of the rock embankments and along the inside of the downstream rock embankment for further disposition.

During the time the Contractor was removing the excess sand from the impervious core section, over 400 samples were secured and from analysis disclosed that the objectionable excess sand had been removed by the Contractor.

On February 7, 1934 the City's Hydraulic Fill Engineer D. W. Albert; Assistant Engineer Harold Wood; Assistant Hydraulic Engineer Fred D. Pyle, and Consulting Engineer L. C. Hill, after careful investigation and study of the situation and the results of the analyses of the samples of the material from the impervious core section, were constrained to the conclusion that the removal of the excess sand had been sufficiently accomplished to assure the full safety of the dam and the water tightness of the puddle core section, and the Contractor was formally notified that he might resume placing hydraulic fill material by the full hydraulic process and accomplish the upbuilding of the puddle core area, all of which conclusions were concurred in by Deputy State Engineer Geo. W. Hawley and Assistant Deputy State Engineer W. H. Holmes, both of whom had taken part in the considerations and examinations, since which the Contractor has continued the placing of material by the full hydraulic process and the upbuilding of the lagging puddle core has been advanced in a satisfactory manner. Excess sand as it accumulates on the beaches has been removed for wasting.

Very truly yours,

H. H. Savage,
Hydraulic Engineer.

HHS/r

June 7, 1934

Mr. W. L. Drager, Engineer
Self Liquidating Division
Reconstruction Finance Corporation
Washington, D. C.

Subject: Re. Loan Docket 119-San Diego, California

Dear Mr. Drager:

In the City of San Diego's Water Department, Accounting Set-up for the fiscal year 1932-1933, finance statement attached hereto, interest accrued on water bond issues and including two contract obligations amounted to \$525,993.14 on developed properties, as shown in the operating statement, page 2 of the finance statement.

Other interest accrued has been capitalized and is shown in the balance sheet statement, page 1, of the finance statement under two items, namely, new projects under construction, El Capitan Feature, \$95,817.50 and under deferred charges, undeveloped properties, \$88,895.78.

Likewise for the first six months of the current fiscal year 1933-1934, interest accrued on water bond issues, inclusive of the two contract obligations amounts to \$257,753.31 on developed properties, as shown in the operating report attached and accrued interest which will be included in the balance sheet at the close of the year, June 30 on new projects under construction, El Capitan Feature, amounts to \$66,740.45 and on undeveloped properties, a deferred charge, amounts to \$41,589.84.

Operating costs, as shown in the operating report for the six months ending December 31, 1933 have been taken from the books of the Water Department, no financial report for that period being available. The annual financial statement will be made out at the close of the fiscal year June 30.

Very truly yours,

H. N. Savage,
Hydraulic Engineer.

HNS/p
cc James H. Hoyer
Supervising Engineer RFC.

15. Certified copy of financial statements, from which above information has been taken is attached. (See letter attached)

I hereby certify that the above statements are correct

Responsible Official

H. N. Savage (signed)

Engineer

Sworn to and subscribed before me this
8th day of June 1934.

Marie D. Dunne

Notary Public

My commission expires July 17, 1934.

RECONSTRUCTION FINANCE CORPORATION

WASHINGTON

November 27, 1934.

Mr. James H. Roper
Supervising Engineer RFC
1022 Pacific National Building
Los Angeles, California.

Dear Mr. Roper

Docket 119
San Diego, Cal.

This will advise you that bonds which we purchased under the loan agreement with the City of San Diego, California, have been sold, and you are, accordingly, instructed not to charge any more time to this project, as your services as Supervising Engineer are terminated insofar as the City of San Diego is concerned.

It is, however, suggested that you talk to Mr. Byers, or Mr. Pyle, the Hydraulic Engineer, and see if they will not be willing to continue furnishing you with a copy of the usual stage IV monthly report until such time as the project is complete. Such an arrangement has been made in the case of several other projects where we have sold the bonds, and where it has not been too much of a burden on the construction engineer.

Please let me know whether or not this arrangement will be agreeable to the City officials.

Very truly yours,

MORTON MACARTNEY
Chief Engineer.

C O P Y

4-1-35

Hydraulic Engineer

City Attorney

San Diego River Project, El Capitan Feature
RFC Monthly Report for January-February, 1935, FINAL

Submitted herewith is information, data and statements for the monthly report for the months of January and February, 1935, to the Reconstruction Finance Corporation, in connection with the sale of El Capitan bonds and the construction of the El Capitan Feature of the San Diego River Project, as follows:

STAGE IV

- (a) Monthly report of Engineer
- (b) Progress estimate - construction work done by contract.
- (c) Construction work done otherwise than by contract.
- (d) Expenditures other than for construction work.
- (e) Status of project.
- (f) Summary of status of project.

The last statement - summary of status of project - was not requested by the RFC but is submitted in order to correlate the statement of estimated costs as previously submitted with the estimated costs as requested in their forms March 30, 1933.

The estimates for the dam, spillway extension and tunnel inner lining are final.

Request was made through Mr. James H. Roper, Supervising Engineer RFC, to continue these reports until the completion of the dam, although the RFC has sold the \$2,350,000 to private parties.

The attached report is final.

Fred D. Pyle
Hydraulic Engineer

/p
encls.

DATE April 1, 1935MFC Docket No. Eng. 119

MONTHLY REPORT OF EXPENDITURES
ON PROJECT FINANCED FROM
FUNDS LOANED BY THE RECONSTRUCTION FINANCE CORPORATION

BORROWER The City of San Diego, CaliforniaPROJECT El Capitan MONTH ENDING 2-28-35**(1) Progress of work**

(a) El Capitan Reservoir Dam, Spillway and Outlet Works under contract dated April 23, 1932 with H. W. Kohl and T. E. Connolly, Document No. 274788. Contract completed.

(b) Purchase of right of way completed in October 1933.

(c) Reconstruction of public road around south side of reservoir.

No work performed - none to be performed
at this time.

(d) El Capitan-Lakeside Pipe Line.

No work performed - none to be performed
at this time.

(e) El Capitan Reservoir Dam Spillway Extension under contract dated April 23, 1934 with Bodenhamer Construction Company, Document No. 287765. Contract completed.

(f) El Capitan Reservoir Dam Tunnel Inner Lining under contract dated November 20, 1934 with H. H. Golden, Document No. 290335. Contract completed 2-23-35

(2) Variations from the project as planned

The principal variations in the El Capitan Dam since the contract was let, are as follows:

(a) Increase in stripping of dam foundations, especially in the base of the dam, to meet the mandatory requirements of the California State Engineer.

(b) The amount of material from both tunnel excavation and stripping that had to be wasted was greatly increased because foundation was not ready at the time these materials were being excavated, due to the increased stripping required by the California State Engineer.

(2) Continued.

- (c) All Class 1, 3, 4 and 5 materials wasted were further increased because of swell which had been intentionally not provided for when writing the specifications.
- (d) Tunnel excavation quantities were necessarily increased due to increase in length requiring timbering over the length estimated.
- (e) Excavation for cutoff trenches under dam was materially increased to meet the requirements of the California State Engineer.
- (f) Spillway excavation was greatly increased to meet the requirements of the California State Engineer.
- (g) Embankment quantities both Class 1 and Class 2 materially increased due to the additional excavation required for foundation in the base of the dam by the California State Engineer.
- (h) Concrete tunnel lining was necessarily materially increased due to increase in tunnel footage requiring timbering and therefore increase in the thickness of lining.
- (i) Concrete lining of spillway increased to meet the requirements of the California State Engineer.
- (j) Omission of the thin portion of the concrete core wall except for a height of about 36 feet across the base of the dam and about 24 feet on the abutments, approved by the California State Engineer.
- (k) Change in design of outlet tower from octagonal shape, with variable diameter and located directly over the outlet tunnel and back of tunnel intake, to round tower of smaller diameter, 12 feet on the inside, and located on the north side of the tunnel and about 56 feet from the tunnel approach, approved by the California State Engineer.

Increases in the revised estimate of October 31, 1933 over that of April 30, 1933 are due to the following:

- (l) Deficiency of clay in borrow pit material going into the hydraulic fill made it necessary to limit the amount of spillway excavation material which could be placed in the hydraulic fill thus materially increasing the amount of spillway excavation wasted and increasing the amount of material necessary from borrow pit.
- (m) Increase in amount of rock required due to more definite information as to requirements.
- (n) Increase in length of spillway discharge channel.

(2) Continued.

- (o) Increased grouting deemed necessary in the by-pass outlet tunnel due largely to the fact that all tunnel from the entrance portal of the tunnel past the axis of the dam required timbering.
- (p) Requirement for additional concrete at junction of core wall of the dam with spillway.
- (q) An unallocated contingent item has been included to provide for the possibility of revision of the deep excavation slopes in the spillway and for miscellaneous contingencies.
- (r) On July 10, 1934, the California State Engineer approved the modification of the top of the dam involving (1) the heightening of the top of the embankment from elevation 766 to 770 without change in the width of the top; (2) the elimination of the upstream berms at elevations 700 and 750; (3) the shifting of the top of the dam until it was centered directly over the puddle core area which slightly changed the outside slopes, and (4) the thickening of the rock embankment on the upstream face of the dam, all as shown on Drawing WD-501. This required an increase of 25,000 cubic yards of hydraulic fill material and 13,000 cubic yards of rock at an additional cost of \$23,000, which was taken into account in making cost estimates of November 30, 1933, indicated in the attached sheets.
- (s) Construction operations indicated the advisability of changing from full hydraulic placement of beach materials to rolled embankment method, and placing of select puddle core material directly into the central impervious portion of the dam. This was accomplished when the dam reached elevation about 720 and was approved by the California State Engineer August 14, 1934 on Drawing WD-511.
- (t) The original plans submitted to the California State Engineer required a long tunnel plug. Detail analysis indicated that a short plug and a tunnel inner lining would not only be less costly but would result in a materially stronger structure. The plans and specifications for the tunnel inner lining were approved by the California State Engineer. Bids were received by the City Council on October 30, 1934. M. H. Golden, Contractor, 404 California Bank Building, San Diego, California, was low bidder with a total of \$53,177.75.

(3) Unusual Conditions

The contract drawings which are a part of the contract between H. V. Rohl and T. E. Connolly for the construction of El Capitan Reservoir Dam, Spillway and Outlet Works show the dimensions of the spillway to Station 7+40 with notations to the effect that lining to be extended as directed by the Engineer. The California

(3) Continued

State Engineer required that the spillway lining be extended to Station 15+50 and that a discharge channel be excavated from Station 15+50 to the San Diego River at Station 24+50. E. W. Kohl and T. E. Connelly brought action (Case No. 76082) in the Superior Court of the State of California to have determined the contractor's obligation under their contract to construct the spillway extension below Station 7+40. The Superior Court, by judgment entered December 5, 1933 in Judgment Book No. 93 page 57, ordered, adjudged and decreed that the construction of the spillway extension west of Station 7+40 was not covered by the existing contract and that the contractor was under no legal obligation as to the construction of the spillway extension beyond Station 7+40.


As the height of the constructed portion of the dam increased it became necessary for the contractor to import clay and silt from additional sources at some distance from the dam.

(4) Recommendations - None.

C E R T I F I C A T I O N

I hereby certify that the information furnished herewith comprising the Stage IV Report for the month ending February 28, 1935, for the El Capitan Dam Project, has been prepared under my direction, and is correct. The report includes the following:

- (1) Stage IV a - Monthly Report of Engineer
- (2) Stage IV b - Progress Estimate - Construction work done by Contract
 - (a) El Capitan Reservoir Dam, Spillway and Outlet Works.
 - (b) El Capitan Reservoir Dam Spillway Extension.
 - (c) El Capitan Reservoir Dam Tunnel Inner Lining.
- (3) Stage IV c - Construction work done otherwise than by contract.
- (4) Stage IV d - Expenditures other than for construction work.
- (5) Stage IV e - Status of Project.
- (6) Labor Summary.


 Fred D. Eric
 Hydraulic Engineer

Subscribed and sworn to before me this

1st day of April 1935.

Maria S. Dunne

NOTARY PUBLIC

In and for the County of San Diego, State of California
 My Commission Expires July 17, 1937



STAGE IV(b)

DATE APRIL 1, 1935

WFO Docket No. ENG. 119

MONTHLY REPORT OF EXPENDITURES

ON PROJECT FINANCED FROM
FUNDS LOANED BY THE RECONSTRUCTION FINANCE CORPORATION
PROGRESS ESTIMATE - CONSTRUCTION WORK DONE BY CONTRACT

The City of San Diego, California

PROJECT

Kind contract earnings

month ending 2-28-35

At Captain Herzog's San, Siltway and Outlet works
H. W. Hoyt & T. E. Connolly, contractor. Contract
completed November 27, 1934

At Captain Herzog's San Siltway Extension
Hodgkinson Construction Company, contractor.
Contract completed December 1, 1934

At Captain Herzog's San Tunnel Inner Lining
H. H. Golden, contractor.
Contract completed February 23, 1935.

55,409.48
82,958,249.89

197,836.66

82,705,003.81

STAGE IV(e)

DATE April 1, 1935RFC Docket No. Eng. 119

MONTHLY REPORT OF EXPENDITURES
ON PROJECT FINANCED FROM
FUNDS LOANED BY THE RECONSTRUCTION FINANCE CORPORATION
CONSTRUCTION WORK DONE OTHERWISE THAN BY CONTRACT

Costs April 30, 1932 to date

BORROWER The City of San Diego, CaliforniaPROJECT El Capitan MONTH ENDING 2-28-35

No construction work done otherwise than by contract.

STAGE IV(4)

Date March 5, 1935

MONTHLY REPORT OF EXPENDITURES
ON PROJECT FINANCED FROM
FUNDS LOANED BY THE RECONSTRUCTION FINANCE CORPORATION
EXPENDITURES OTHER THAN FOR CONSTRUCTION

NFC Docket no. Eng. 119

BORROWER The City of San Diego, California

PROJECT El Capitan

MONTH ENDING FEBRUARY 28, 1935

	Engineer's Estimate	Previous Statement	January	February	To date 2-28-35
Contingencies other than contract schedule items					
Purchase of gates, valves and other appurtenances		6,032.02	345.33	813.85	7,191.20
Maintenance of roads		647.81	0	0	647.81
Road construction		0	166.88	1,546.36	1,653.24
Foundation exploration required by California State Engineer		955.07	0	0	955.07
Construction of engineer's camp; purchase of contractor's camp buildings		2,528.01	0	900.00	3,428.01
Labor investigation contractor's personnel		6,389.65	79.37	0	6,469.02
Compulsory fire protection-Government Forest Service	44,265.02	2,862.24	0	0	2,862.24
State compensation insurance on city force labor		1,436.36	43.28	92.94	1,572.58
Travel expense-purchase of Indian lands, sale of bonds to NFC		11,640.45	225.59	204.49	12,070.53
Legal and miscellaneous expenses-application to FVA		1,260.81	55.37	736.34	2,052.52
Water pumping to permit construction of flume bypass		712.50	0	0	712.50
Unallocated contingencies	107,343.46(x)	0	0	0	0
Total contingencies	151,608.48	34,464.92	855.82	4,293.98	39,614.72
Purchase of rights of way	82,567.20	82,567.20	0	0	82,567.20
Clearing reservoir basin	35,008.37	33,208.49	1,725.28	913.64	35,847.41
Engineering	127,689.00				
Field work		97,338.35	2,312.41	1,829.56	101,480.32
Office work		48,610.07	1,096.95	1,138.72	50,845.74
Consulting engineering fees and expenses		4,533.65	0	0	4,533.65
Laboratory, testing expense, materials		6,394.80	0	165.00	6,559.80
Camp maintenance		4,800.80	.60	3.75	4,805.15
Construction model spillway		770.59	0	0	770.59
Road construction		0	33.26	99.96	133.22
Total engineering	127,689.00	162,448.26	3,443.12	3,236.99	169,128.37
Total					327,157.70
Less previous expenditures					312,689.87
Amount expended since previous statement					14,468.83

(x) Included to provide for possible revision in cut slopes of spillway, etc.

STAGE IV(e)

2118

WPC Docket No. Eng. 119

DATE March 16, 1935

MONTHLY REPORT OF EXPENDITURES
ON PROJECT FINANCED FROM
FUNDS LOANED BY THE RECONSTRUCTION FINANCE CORPORATION
STATUS OF PROJECT

BORROWER The City of San Diego, California

PROJECT El Capitan

Month ending February 28, 1935

Subdivision	Engineer's Estimate 4-30-32	Cost to date	Cost to Complete	Total Cost	Overrun	Estimated Underrun
H. V. Bohl & T. E. Connolly, El Capitan Reservoir Dam, Spillway & Outlet Works Contract dated April 23, 1932	2,332,860.00	2,681,641.33		2,681,641.33	103,117.35	
Contingencies under schedule items	165,663.98					
Contingencies under extra work orders						
Public roads to damsite and bypass travel around dam and reservoir site		14,155.94		14,155.94		
Extra work orders 1 and 2	15,350.00					
Extra work orders 3 to 28 inclusive	9,556.37	12,745.52		12,745.52		
Deduction on account of injunction preventing City from payment of holdback on extra work orders 1 and 2			3,538.98	3,538.98		3,538.98
Sub-total	2,523,430.35	2,705,003.81		2,705,003.81	103,117.35	3,538.98
Dodenhamer Construction Company El Capitan Reservoir Dam Spillway Extension, Contract dated April 23, 1934.		197,836.66		197,836.66	197,836.66	
H. H. Golden, El Capitan Reservoir Dam Tunnel Inner Lining Contract dated November 20, 1934		55,409.42		55,409.42	55,409.42	
Work done otherwise than by contract - none						
Expenditures other than for construction work						
Contingencies (see Stage IV(d) details)	24,708.65	39,614.72	61,458.41	101,073.13	76,364.48	.80
Purchase of rights of way	82,568.00	82,567.20		82,567.20		
Clearing reservoir basin	25,000.00	35,847.41	500.00	36,347.41	11,347.41	
Engineering	150,000.00	169,128.37	5,000.00	174,128.37	24,128.37	
Sub-total	282,276.65	327,157.70	66,958.41	394,116.11	111,840.26	.80
Future contingencies					1,995.09	
Total	2,805,707.00	3,285,407.59	66,955.41	3,352,366.00	550,198.78	3,539.78

(x) Increased from previous estimate 4-30-33 on account of possible revisions in cut slopes in spillway, etc.
 (xx) Increased \$10,000 for spillway engineering, \$30,000 for dam from unallocated contingencies.
 NOTE: A large part of overrun provided for under contingencies. Considerable underrun is expected to occur in other items of completed project. Cost of pipe line and reconstruction of road around south side of reservoir \$650,000, not included.
 Dam, spillway extension and tunnel inner lining contracts completed.

STAGE IV(f)

DATE April 1, 1935

MONTHLY REPORT OF EXPENDITURES
ON PROJECT FINANCED FROM
FUNDS LOANED BY THE RECONSTRUCTION FINANCE CORPORATION

RFC Docket No. Eng. 119BORROWER The City of San Diego, California

STATUS OF PROJECT

PROJECT El CapitanMonth ending February 28, 1935

Following is re-statement of estimates and costs making direct comparisons between cost estimate of 4-30-32 as originally submitted, cost estimate of 11-30-33 and costs to date. (Figures do not include expenditures prior to 4-30-32)

	Engineer's Estimate 4-30-32	Engineer's Estimate 11-30-33(a)	Comparison of estimates		Cost to date	Estimated cost to complete
			Increase	Decrease		
El Capitan Dam:						
Cost of construction as per contract	82,332,860.00	2,720,143.00	387,283.00		2,681,641.33	
Contingencies & miscellaneous items	199,929.00	44,265.02				
Unallocated contingencies		77,343.46		78,320.52	50,707.00	58,111.65(c)
Public roads to damsite and bypass travel around dam	15,350.00	15,350.00			10,616.96	500.00
Road around reservoir					1,653.24	3,346.76
Clearing reservoir basin-1096 acres	25,000.00	35,008.32	10,008.32		35,847.41	500.00
Engineering	150,000.00	167,689.00	17,689.00		169,128.37	5,000.00
Sub-total	2,723,139.00	3,059,798.80	414,980.32	78,320.52	2,949,594.31	66,958.41
El Capitan Reservoir Dam Spillway Extension		200,000.00			197,836.66	
Contingencies		10,000.00				
Engineering (included above)						
Sub-total		210,000.00	210,000.00		197,836.66	
El Capitan Reservoir Dam Tunnel Inner Lining					55,409.42	
Purchase of rights of way	82,568.00	82,567.20		.80	82,567.20	
El Capitan Reservoir Road						110,000.00
13 miles road	139,000.00	110,000.00		29,000.00		11,000.00
Contingencies	14,000.00	11,000.00		3,000.00		9,000.00
Engineering	7,500.00	9,000.00	1,500.00			
Sub-total	160,500.00	130,000.00(b)	1,500.00	32,000.00		130,000.00
El Capitan-Lakeside Pipe Line(not including portion of costs to be paid by La Mesa, Lemon Grove & Spring Valley Irrigation District)						
8 miles 48" and 36" pipe line at \$50,000 per mile	400,000.00	478,000.00	78,000.00			478,000.00
Contingencies	40,000.00	48,000.00	8,000.00			48,000.00
Engineering	20,000.00	24,000.00	4,000.00			24,000.00
Sub-total	460,000.00	550,000.00	90,000.00			550,000.00
Total	3,426,207.00	4,032,366.00	716,480.32	110,321.32	3,285,407.59	746,958.41

(a) Revision due to Superior Court decision Case 76082 which did not require contractor for dam to construct spillway extension under his contract, therefore separate contract let 4-23-34. \$30,000 transferred to engineering.
(b) Estimate revised to permit construction under NRA regulations. (c) All may not be required. (x) Included to provide for possible revision of cut slopes in spillway, etc. (xx) \$10,000 transferred from spillway extension engineering.

SPILLWAY EXTENSION

CONSTRUCTION BY CONTRACT

SP EX

2448

DRAWINGS and SPECIFICATIONS

February 12, 1934

From : Hydraulic Engineer
To : City Manager
Subject : San Diego River Project, El Capitan Reservoir Dam,
Spillway and Outlet Works, Spillway Extension.

Local Superior Court Judge Clarence Harden's decision December 5, 1933 exempted the construction of the El Capitan reservoir spillway extension from the H. W. Kohl & T. E. Connolly contract for the construction of the El Capitan Reservoir Dam, Spillway and Outlet Works, thereby making it necessary for the City of San Diego to advertise and contract independently for the construction of the spillway extension.

Drawings and specifications for the work have been compiled and are ready for action by the Council, except for changes which may be deemed necessary by the City Attorney's office to bring them into conformity with the requirements of whichever Federal Government Agency finances the work.

The cost of the spillway extension work is estimated to approach \$200,000, depending upon the character and extent of the requirements and restrictions imposed by Federal Government Agency.

The City's contract with Kohl & Connolly provides for the completion of the El Capitan Reservoir Dam, Spillway and Outlet Works October 31, 1934.

The spillway extension work yet to be independently contracted for should be finished well in advance of the Kohl & Connolly contract work. Otherwise, adjustments with Kohl & Connolly will be necessary, since the State Engineer may properly require the spillway extension work to be completed before Kohl & Connolly will be permitted to install the concrete plug in the by-pass tunnel, which feature is included in the Kohl & Connolly contract and may cost approaching \$20,000.

About thirty days will be required for advertising for and receiving bids for the spillway extension.

Provided all the controlling factors are anticipated and if no unforeseen complications develop, it may be possible to award and execute contract in about fifteen days after receiving bids. However, delays are likely to occur. There now remains only meager time in which for the contractor, whoever he may be, to economically construct the spillway extension and finish it in time to permit Kohl & Connolly to complete the installation of the plug in the by-pass tunnel and finish their contract October 31, 1934. If the time be materially shortened in which the contractor for the spillway extension is required to finish his

work, his bid and the cost to the City may and probably will be materially increased, and if very material delay occurs in the construction of the spillway extension the City may not be able to utilize the El Capitan reservoir for the runoff season 1934-35.

It is understood that the purchase of the remainder of the City's El Capitan bonds by the RFC has been completed, thereby making available funds which may be used for the construction of the spillway extension.

RECOMMENDATION: Provided the commitment of the required amount of funds now being made available by RFC will not jeopardize the City's negotiations for PWA funds, it is recommended that advertisement for the contract construction of the spillway extension be immediately authorized by the Council.

H. N. Savage
Hydraulic Engineer

HNS/r

cc City Attorney
City Clerk
Mayor John F Forward Jr.
Councilmen:
A W Bennett
L E Goodbody
Wayne A Hood
Harry Warburton
Dan Rossi
Charles E Anderson

March 6, 1934

From : Hydraulic Engineer
To : City Attorney
Subject : El Capitan Reservoir Dam Spillway Extension Specifications

It is hoped that, following the engineering conference at the El Capitan Dam yesterday, in which you kindly participated, you will favor the restoration into the City's draft of specifications for the contract construction of the El Capitan Reservoir Dam Spillway Extension of the deleted clause:

"Provided however that no such monthly progress estimate or payment will be made when in the opinion of the engineer the work is not proceeding in accordance with the provisions of the contract specifications."

It is obvious that any and every potential contractor would prefer to have such a clause omitted together with, as requested by Attorney Charles C. Crouch for his clients Daley and Fenton, seventy-nine other clauses already in the City's specifications and all essential to the proper administration and accomplishment of the work and all fair to a fairly disposed contractor, and an equally fairly disposed engineer.

The clause, however, has been prominently featured for upwards of four years in the State of California's Department of Public Works standard highway specifications and is thoroughly known to the contract world and by the surety companies in probably the greatest number of contracts being executed by any one agency in the State of California.

H. N. Savage
Hydraulic Engineer

HNS/f

March 17, 1934

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

Subject: San Diego River Project, El Capitan
Reservoir Dam Spillway Extension,
Drawings and specifications.

Gentlemen:

Submitted herewith is copy of Notice Inviting Bids,
Proposal, Drawings and Specifications for the construction
of El Capitan Reservoir Dam Spillway Extension.

In order that this work may be completed in time so as
not to interfere with the installation of the tunnel plug
in the flood by-pass tunnel by H. W. Kehl & J. E. Connelly
under their contract for the construction of the El Capitan
Reservoir Dam, Spillway and Outlet Works, which calls for
their contract to be completed October 31, 1934, the date
of completion of the spillway extension has been fixed as
September 30, 1934.

In order that the prospective bidders may have reason-
able length of time for the construction of the spillway
extension, it is deemed advisable that the Purchasing Agent
be authorized to call for bids and that bids be received
until 10 A.M. April 9, 1934 and thereafter opened.

RECOMMENDATION: It is recommended that the drawings
and specifications for El Capitan Reservoir Dam Spillway
Extension as submitted herewith be approved; that the
Purchasing Agent be authorized to advertise for bids and
that bids be received until 10 A.M. April 9, 1934 and there-
after opened.

Respectfully,

H. N. Savage,
Hydraulic Engineer.

FDP/p
encl.
cc City Manager
City Attorney

BIDS

March 29, 1934

The American City Magazine
470 Fourth Avenue
New York, N. Y.

Subject: San Diego River Project, El Capitan
Reservoir Spillway Extension.

Gentlemen:

The City of San Diego on March 19, 1934 issued notice inviting bids, proposal, drawings and specifications for the El Capitan Reservoir SPILLWAY EXTENSION, for which bids will be received until April 9, 1934.

The proposed work is located at the El Capitan Reservoir, where the Dam is now under contract construction with H. W. Rohl & T. E. Connolly, on the San Diego River about eight miles northeasterly from the town of Lakeside, which is the terminal of the Lakeside branch of the San Diego & Arizona Railway. The town of Lakeside is about twenty-one miles north-easterly from the City of San Diego.

The discharge capacity of the spillway channel will be 80,000 cubic feet of water per second.

The work will involve the excavation of about 190,000 cubic yards of mostly earth, with a little disintegrated granite, and a very small yardage of hard rock; about 10,000 cubic yards of concrete; about 13,500 barrels of cement, about 520,000 pounds of reinforcing steel and about 7,200 linear feet of 4" and 6" drain tile.

It is required that the work be completed not later than September 30, 1934.

The estimated cost of the proposed work is \$160,000.

Very truly yours,

H. N. Savage
Hydraulic Engineer.

HNS/f

3-13-35
copy/p

CITY OF SAN DIEGO
San Diego River Project
EL CAPITAN RESERVOIR DAM SPILLWAY EXTENSION
Tabulation of Bids
Received April 9, 1934

5818

April 9, 1934

I t e m	Bodenhamer Construction Company		Rohr-Connolly Company		Daley Corporation		V. R. Dennis Construction Company	
	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1. Excavation, Class 1, Station 7+40 to Station 10+37 50,000 cubic yards	\$.30	\$15,000	\$1.00	\$50,000	\$.90	\$45,000	\$.45	\$22,500
2. Excavation, Class 1, Station 10+37 to Station 15+50 112,000 cubic yards	.30	33,600	.40	44,800	.51	57,120	.45	50,400
3. Excavation Class 1 Station 15+50 to 25+00 36,000 cubic yards	.30	10,800	.57	20,520	.60	21,600	.45	16,200
4. Excavation Class 2 cutoff trenches 1,000 cubic yards	1.00	1,000	1.00	1,000	1.50	1,500	2.00	2,000
5. Concrete Class 1 in cutoff walls 1,000 cubic yards	10.00	10,000	5.00	5,000	9.00	9,000	9.50	9,500
6. Concrete Class 2 in floor lining 6,000 cubic yards	7.00	42,000	5.50	33,000	6.00	36,000	11.00	66,000
7. Concrete Class 3 side wall lining 2,900 cubic yards	10.00	29,000	9.00	26,100	9.00	26,100	12.00	34,800
8. Cement in place in the work 13,500 barrels	2.36	31,860	2.25	30,375	2.35	31,725	3.00	40,500
9. Reinforcing steel in place in the work 520,000 pounds	.04	20,800	.04	20,800	.05	26,000	.05	26,000
10. 4" drain tile in place in the work 6,800 linear feet	.50	3,400	.50	3,400	1.40	9,520	.65	4,420
11. 6" drain tile in place in the work 400 linear feet	.60	240	.60	240	2.00	800	.75	300
TOTALS		\$197,700		\$235,235		\$264,365		\$272,620

April 12, 1934

(Filed with
City Clerk
2 PM 4-16-34
F.D.P.)

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

Subject: San Diego River Project, El Capitan
Reservoir Dam Spillway Extension,
Proposals opened April 9, 1934.

Gentlemen:

On April 9, 1934 the City of San Diego, in response to its notice inviting bids for the construction of the El Capitan Reservoir Dam Spillway Extension, received four bids which were duly opened by the City Clerk and publicly read. Following is brief summary of each of the four proposals:

V. R. Dennis Construction Company, P. O. Box "F" Station A San Diego, California.
Proposal accompanied by certified check for \$28,000. Total amount of proposal \$272,620. Guaranty of bonds executed by Hartford Accident and Indemnity Company.

Daley Corporation, 4430 Boundary Street, San Diego, California.
Proposal accompanied by certified check for \$26,500. Total amount of proposal \$264,365. Guaranty of bonds executed by Maryland Casualty Company.

Rohl-Connolly Company, 4351 Alhambra Avenue, Los Angeles, California. Proposal accompanied by certified check for \$25,000. Total amount of proposal \$235,235. Guaranty of bonds executed by Hartford Accident and Indemnity Company.

Bodenhamer Construction Company, 354 Hobart Street, Oakland, California. Proposal accompanied by certified check for \$20,000. Total amount of proposal \$197,700. Guaranty of bonds executed by Massachusetts Bonding and Insurance Company.

Enclosed is copy of Drawing WD-503 showing the tabulation of bids.

SUMMARY OF BIDS

V. R. Dennis Construction Company	\$272,620
Daley Corporation	264,365
Rohl-Connolly Company	235,235
Bodenhamer Construction Company	197,700

The Bodenhamer Construction Company have completed a number of public works and investigation discloses satisfactory evidence that they are responsible and reliable bidders.

Bodenhamer Construction Company's itemized proposal for the sum of \$197,700 for the construction of the El Capitan Reservoir Dam Spillway Extension is the lowest of the four proposals received and is \$37,535 lower than the next lowest bid.

4/12/34

2457

By reason of the controlling factors it is of paramount importance to the City of San Diego and relatively equally so to the contractor to whom the award is made, and the contractor for the construction of the El Capitan Reservoir Dam, Spillway and Outlet Works which cannot be completed until the spillway extension is completed, that the construction of the El Capitan Reservoir Dam Spillway Extension be entered upon at the very earliest practicable date to insure maximum progress and advancement of the work.

RECOMMENDATION: It is respectfully recommended that the proposal of the Bodenhamer Construction Company be accepted and the work be awarded to them for the construction of the El Capitan Reservoir Dam Spillway Extension at the unit prices stated in their proposal and that a contract be executed between the City of San Diego and Bodenhamer Construction Company at the earliest practical date.

Respectfully,

H. N. Savage,
Hydraulic Engineer.

HNS/r
encl. WD-503

CONTRACT

CITY OF SAN DIEGO

CALIFORNIA

WATER DEPARTMENT

DIVISION OF DEVELOPMENT AND CONSERVATION

HIRAM NEWTON SAVAGE

Hydraulic Engineer

NOTICE INVITING BIDS, PROPOSAL,
DRAWINGS and SPECIFICATIONS

EL CAPITAN RESERVOIR DAM SPILLWAY
EXTENSION

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

April 9th, 1934

11-27-34

P

2469

AUTHORITY FOR ATTORNEY IN FACT
TO VERIFY AND SIGN ALL MONTHLY ESTIMATES

Date June 8, 1934

We, the undersigned, Contractor for the City of San Diego, Water Department, Division of Development and Conservation, on construction work, under Contract No. 287765, do hereby authorize A. R. Bodenhamer, P.O.Box 243 Lakeside, California to act as our Attorney-in-Fact, to verify and sign all monthly estimates of work accomplished and demands for payment for work accomplished on such contract, the authorization to be effective, retroactive from the date April 23, 1934 such contract work was started. This authorization effective until City is otherwise notified by Contractor.

Bodenhamer Construction Company
Contractor

Approved

By F. N. Bodenhamer

H. N. Savage
H. N. Savage

Signature A. R. Bodenhamer

A. R. Bodenhamer

CITY OF SAN DIEGO

CALIFORNIA

WATER DEPARTMENT

DIVISION OF DEVELOPMENT AND CONSERVATION

HIRAM NEWTON SAVAGE

Hydraulic Engineer

**NOTICE INVITING BIDS, PROPOSAL,
DRAWINGS and SPECIFICATIONS**

**EL CAPITAN RESERVOIR DAM SPILLWAY
EXTENSION**

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

April 9th, 1934

CONTENTS

Notice Inviting Bids
 Information for Bidders
 Proposal
 Affidavit
 Guaranty of Bonds
 Bidder's Statement of Experience and References
 Bidder's Statement of Equipment
 Schedule
 Form of Contract
 Form of Faithful Performance Bond
 Form of Labor and Materialmen's Bond

SPECIFICATIONS—

General Conditions:

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

38. Workmen's compensation and indemnity Insurance
39. Compliance with laws

DETAIL SPECIFICATIONS—

40. Requirements
41. List of drawings
42. Commencement, prosecution and completion of work
43. Failure to complete the work in the time agreed upon
44. Meals furnished
45. Water for Plant, Construction and Domestic use
46. Two daily shifts of labor
47. Removal of temporary works
48. Construction program.
49. Progress estimates and payments

Excavation:

50. Excavation
51. Classification of excavation
52. Measurement of excavation
53. Wasting of excavated material
54. Blasting
55. Cut-off trenches

Concrete:

56. Construction of Spillway extension concrete
57. Cement
58. Concrete composition
59. Sand
60. Crushing rock for sand
61. Broken rock and gravel
62. Water
63. Mixing
64. Placing
65. Finishing
66. Forms
67. Supports for forms
68. Reinforcing steel
69. Preparation of foundation
70. Foundation pit water control
71. Contraction joints
72. Construction joints
73. Bonding
74. Concrete to be kept moist
75. Protection of concrete
76. Concrete in cutoff walls under spillway
77. Concrete in lining
78. Measurement of concrete
79. Basis of payment
80. Payment for concrete
81. Concrete classification
82. Drain tile

NOTICE INVITING BIDS

CITY OF SAN DIEGO

San Diego, California, March 19th, 1934.

Sealed proposals will be received at the office of the City Clerk of the City of San Diego, California, until 10:00 o'clock, A. M., April 9th, 1934, for the construction of El Capitan Reservoir Dam Spillway Extension involving about 199,000 cubic yards of excavation, about 9,900 cubic yards of concrete, about 13,500 barrels of cement, about 520,000 pounds of reinforcing steel and about 7,200 linear feet of 4" and 6" drain tile, all as more particularly and in detail set forth in those certain drawings and specifications contained in Document No. 287317, on file in the office of the City Clerk of said City.

The proposed work is located on the San Diego River, about eight miles northeasterly from the town of Lakeside, which is the terminal of the Lakeside branch of the San Diego and Arizona Railway. The town of Lakeside is about twenty-one miles northeasterly from the City of San Diego.

In accordance with the provisions of Article XII of the Charter of The City of San Diego, the Council of The City of San Diego has ascertained the general prevailing rate of wages applicable to the work to be done to be as follows:

Classification	Per Diem Wage of 8 Hours	Classification	Per Diem Wage of 8 Hours
Auto Mechanics	\$6.40	Hoist Operators	\$6.00
Blacksmiths	6.40	Laborers	5.00
Blacksmith Helpers	5.00	Materialmen	5.00
Carpenter Foremen	9.00	Mechanics	6.40
Carpenters	8.00	Mechanics Helpers	5.00
Carpenter Apprentices	5.00	Mechanic Trouble Shooters	6.00
Clerks	5.00	Powdermen	6.00
Cement Finishers	7.00	Powdermen Helpers	5.00
Compressor Operators	6.00	Pump Men	5.00
Concrete Finishers	7.00	Reinforcing Steel Workers	8.00
Concrete Finisher Helpers	5.00	Reinforcing Steel Foremen	9.00
Concrete Foremen	6.00	Shovel Operators	9.00
Concrete Form Builders	8.00	Shovel Cranesmen	9.00
Concrete Spreaders	5.50	Shovel Oilers	6.00
Concrete Tampers	5.00	Shovel Pitmen	5.00
Concrete Mixermen	8.00	Superintendents	9.00
Cooks	5.50	Teamsters	5.00
Crane Operators	7.00	Tractor Operators over 50 H.P.	7.20
Dragline Operators	7.00	Tractor Operators under 50 H.P.	6.80
Dragline Operator Helpers	5.00	Timekeepers	5.00
Drillers	5.50	Truck Drivers under 15,500 pounds	5.50
Drill Sharpeners	6.00	Truck Drivers over 15,500 and under 25,000 pounds	6.00
Electricians	8.00	Truck Drivers over 25,000 pounds	6.50
Electrician Helpers	6.50	Watchmen	4.50
Excavation Foremen	6.00	Other classes not less than	5.00
Flunkeys	5.00		
General Foremen	9.00		

For overtime work when the same is permitted by law, one and one-half times the foregoing rates. For work performed on Sundays and legal holidays as set forth in Section 10 of the Political Code of the State of California, one and one-half times the above rates.

No convict labor or aliens shall be directly employed on such work.

NOTICE INVITING BIDS

CITY OF SAN DIEGO

San Diego, California, March 19th, 1934.

Sealed proposals will be received at the office of the City Clerk of the City of San Diego, California, until 10:00 o'clock, A. M., April 9th, 1934, for the construction of El Capitan Reservoir Dam Spillway Extension involving about 199,000 cubic yards of excavation, about 9,900 cubic yards of concrete, about 13,500 barrels of cement, about 520,000 pounds of reinforcing steel and about 7,200 linear feet of 4" and 6" drain tile, all as more particularly and in detail set forth in those certain drawings and specifications contained in Document No. 287317, on file in the office of the City Clerk of said City.

The proposed work is located on the San Diego River, about eight miles northeasterly from the town of Lakeside, which is the terminal of the Lakeside branch of the San Diego and Arizona Railway. The town of Lakeside is about twenty-one miles northeasterly from the City of San Diego.

In accordance with the provisions of Article XII of the Charter of The City of San Diego, the Council of The City of San Diego has ascertained the general prevailing rate of wages applicable to the work to be done to be as follows:

Classification	Per Diem Wage of 8 Hours	Classification	Per Diem Wage of 8 Hours
Auto Mechanics	\$6.40	Hoist Operators	\$6.00
Blacksmiths	6.40	Laborers	5.00
Blacksmith Helpers	5.00	Materialmen	5.00
Carpenter Foremen	9.00	Mechanics	6.40
Carpenters	8.00	Mechanics Helpers	5.00
Carpenter Apprentices	5.00	Mechanic Trouble Shooters	6.00
Clerks	5.00	Powdermen	6.00
Cement Finishers	7.00	Powdermen Helpers	5.00
Compressor Operators	6.00	Pump Men	5.00
Concrete Finishers	7.00	Reinforcing Steel Workers	8.00
Concrete Finisher Helpers	5.00	Reinforcing Steel Foremen	9.00
Concrete Foremen	6.00	Shovel Operators	9.00
Concrete Form Builders	8.00	Shovel Cranesmen	9.00
Concrete Spreaders	5.50	Shovel Oilers	6.00
Concrete Tampers	5.00	Shovel Pitmen	5.00
Concrete Mixermen	8.00	Superintendents	9.00
Cooks	5.50	Teamsters	5.00
Crane Operators	7.00	Tractor Operators over 50 H.P.	7.20
Dragline Operators	7.00	Tractor Operators under 50 H.P.	6.80
Dragline Operator Helpers	5.00	Timekeepers	5.00
Drillers	5.50	Truck Drivers under 15,500 pounds	5.50
Drill Sharpeners	6.00	Truck Drivers over 15,500 and under 25,000 pounds	6.00
Electricians	8.00	Truck Drivers over 25,000 pounds	6.50
Electrician Helpers	6.50	Watchmen	4.50
Excavation Foremen	6.00	Other classes not less than	5.00
Flunkeys	5.00		
General Foremen	9.00		

For overtime work when the same is permitted by law, one and one-half times the foregoing rates. For work performed on Sundays and legal holidays as set forth in Section 10 of the Political Code of the State of California, one and one-half times the above rates.

No convict labor or aliens shall be directly employed on such work.

In the employment of labor, preference shall be given, when they are qualified, to ex-service men with dependents, and then in the following order (a) to citizens of the United States who are bona fide residents of the City of San Diego or who have filed declaration of intention to become citizens, and (b) to citizens of the United States who are residents of the State of California or who have filed declaration of intention to become citizens.

Except as otherwise provided and subject to the foregoing preferences it is required that all persons employed in the performance of the work shall be bona fide residents of the City of San Diego save and except Superintendents, representatives of the contractor in charge of construction of the work, and skilled workmen who cannot be obtained in said City.

Except in executive, administrative and supervisory positions, as far as practicable and feasible in the opinion of the Engineer, no individual directly employed on the work shall be permitted to work more than forty (40) hours in any one week.

No machinery or materials shall be used or employed in connection with such construction work except such as shall have been produced or manufactured in the United States or its territories.

Work shall be commenced by the contractor within ten (10) days after the execution of the contract on behalf of The City of San Diego and the work must be completed on or before September 30, 1934.

Each proposal must be accompanied by an unconditional certified check for an amount not less than ten per cent of the aggregate sum of the bid payable to the order of the City Clerk, of The City of San Diego, as a guaranty that the bidder will, if successful, promptly execute a satisfactory contract and furnish bonds for the faithful performance of the work as required by paragraph five of these specifications.

All proposals shall be made upon printed forms which will be furnished gratuitously by the Purchasing Agent of said City, or same may be more properly made upon the bid schedule which forms a part of the bound booklet which contains drawings and specifications, and which is referred to in the paragraph immediately following and all such proposals must be accompanied by the affidavit appearing upon said form, and no bid will be considered that does not contain such affidavit. Each bidder is directed to endorse on the envelope containing his bid, his name and the character of work or material upon which the bid enclosed is submitted.

Copies of information for bidders, drawings and specifications, proposal, guaranty of bond, bidding schedule and form of contract may be inspected at the office of the Hydraulic Engineer, Division of Development and Conservation of the Water Department, 524 F Street, San Diego, California. Copies of the drawings and specifications may be obtained at the above office for the sum of ten (\$10.00) dollars which will be returned to the successful bidder, and to all others upon the return by them of the drawings and specifications in good and acceptable condition, within 14 days after opening of bids.

For further particulars address H. N. Savage, Hydraulic Engineer, Division of Development and Conservation, of the Water Department, 524 F Street, San Diego, California.

H. N. SAVAGE,
Hydraulic Engineer

H. J. SCHAPER,
Assistant Purchasing Agent.

INFORMATION FOR BIDDERS

The sealed envelope containing the proposal must be endorsed with the bidder's name, marked "Proposal for EL CAPITAN RESERVOIR DAM SPILLWAY EXTENSION and addressed "City Clerk, City of San Diego."

No bidder will be permitted to withdraw his proposal after the expiration of the time limit fixed in the notice for receiving bids without rendering his certified check subject to forfeiture to The City of San Diego as liquidated damages as in case of refusal to execute contract and bond after award.

Bidders must present satisfactory evidence as to their responsibility and that they are fully prepared with necessary capital, machinery and material to begin work promptly and to conduct it as required by these specifications.

Bidders must satisfy themselves as to local conditions affecting the work, and no information derived from the maps, plans, specifications, profiles, or drawings, or from the engineer or his assistants will relieve the contractor from any risk or from fulfilling all of the terms of his contract. The accuracy of the interpretation of the facts disclosed by borings or other preliminary investigations is not guaranteed. Each bidder or his representative should visit the site of the work and familiarize himself with local conditions.

The quantities stated in the schedule are estimates and for comparing bids only, and no claim shall be made for 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.

The proposal and schedule submitted must not be detached from the Notice Inviting Bids, drawings and specifications.

The successful bidder will be required to furnish The City of San Diego with a bond, with a satisfactory surety company, in a sum equal to seventy-five per cent of the amount of the contract price conditioned upon the faithful performance of said contract.

The successful bidder will also be required to furnish The City of San Diego with a labor and materialmen's bond with a satisfactory surety company in an amount not less than fifty per cent of the amount of the contract, conditioned upon the payment by said contractor of all material or supplies including teams and transportation furnished in the performance of the work contracted to be done by the terms of the contract, and for any work or labor done thereon of any kind.

All bidders are hereby referred to the drawings and specifications on file in the office of the Hydraulic Engineer, or in the office of the City Clerk of said City, for full details and description of said work.

The right is reserved to reject any and all bids.

INFORMATION FOR BIDDERS

PROPOSAL

To the Council of the April 6 1934.
City of San Diego, California.

Sirs:

Pursuant to the foregoing Notice Inviting Bids and Information for Bidders, the undersigned bidder herewith submits proposal on the schedule attached hereto and made part hereof, and binds himself on award by the Council under this proposal to execute in accordance with such award, a contract, with necessary bonds, of which this proposal and the said Notice Inviting Bids and Specifications shall be a part, for performing and completing said contract within the time required and at the prices named in the specifications and in the schedule hereto annexed.

The bidder furthermore agrees that, in case of his default in executing said contract with necessary bonds, the certified check accompanying this proposal and the money payable thereon shall become and remain the property of The City of San Diego.

This proposal is made with a full knowledge of the kind, quantities and quality of the work, and of the materials and plant required; and after complete, careful and independent examination and investigation of the site of the work, local conditions affecting the same, character of formation and materials to be encountered.

Signature Bodenhamer Const. Co.
F. M. Bodenhamer

(Corporate Seal)

Address 354 Hobart St. Oakland,
Calif.

Names of individual members of firm or names and titles of all officers of corporation and their addresses.

.....
.....
.....
Forrest K. Bodenhamer
Owner
.....
.....
.....

Corporation organized under the laws of the State of

Affidavit as required by Section 6 of City Ordinance No. 5051 (Page 10 of printed copy) must be attached hereto.

AFFIDAVIT

State of California
County of Alameda } ss

Forrest M. Bodenhamer D.E.A., being first
duly sworn, says that he is Bodenhamer Construction Co. bidder under the notice of
the Purchasing Agent hereto attached, inviting sealed proposals for EL CAPITAN RESERVOIR DAM
SPILLWAY EXTENSION 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.....

Bodenhamer Construction Co.
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 Bodenhamer Con-
struction Co. has
not in any manner sought by collusion to secure to take or receive
an advantage over other bidders.

F.M. Bodenhamer an individual
doing business as Bodenhamer
Const. Co.
Signed F. M. Bodenhamer

Subscribed and sworn to before me this 4 day of April, 1934.

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

Blanche Brown
Notary Public in and for the
County of Alameda
State of California
My commission expires Jan. 3, 1936

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.

Signatures and addresses
of guarantors of bonds.

Massachusetts Bonding and Insurance
 Company
 By E J Walsh Attorney-in-Fact
 c/p Kettner-Stafford-Goldsmith Co.
 Spreckels Theatre Bldg.
 San Diego, Calif.

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

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.

1927 Bridges and culverts	\$44,000.00	Summerville	Sam Hunter
1928 Bridges and retaining wall	115,800.00	Market St. San Diego	E. Paul Ford
1929 Bridge	93,841.00	Reedley, California	County of Fresno
1930 Bridge	159,827.00	Tehama and Shasta Counties	Bridge Dept. State of California
1930 Bridge and overpass	56,000.00	Yuba Pass	" " " "
1931 Bridge	41,000.00	Redwood City	" " " "
1931 Bridge	67,596.41	Oakdale	Stanislaus County
1931 Bridge	42,912.63	Jacumba Hot Springs	Bridge Dept. State of California
1931 Grading	62,702.10	General Grant National Park	Bureau of Public Roads U.S. Gov't S.F.
1932 Bridge	43,000.00	Arroyo Grande	Bridge Dept. State of California
1932 Grading and paving	234,354.51	Bostonia-Chocolate Creek	Highway Dept. R.A. Division State of California
1933 Bridge	38,000.00	Carmel	" " " "
1933 Timber and conc. bridge	78,096.00	Monterey County	Bridge Dept. State of California
1934 Concrete bridges	67,505.00	San Diego County	" " " "

The above jobs are the main jobs we have completed along the same type of work as the spillway. We have done lots of small work which would equal quite a volume during this period.

MATERIAL HOUSE ACCOUNT

Soule Steel Co.	San Francisco and Los Angeles
Fenton Material	San Diego, Calif.
U. S. Steel	San Francisco
Pacific Portland Cement	San Francisco
Standard Oil Co.	San Francisco, Sacramento, L.A.
Diamond Match Co.	Chico, California

BIDDER'S STATEMENT OF EQUIPMENT

2170

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

- 1 - 1/4 yd Northwest Shovel
- 1 - 260' compressor (2 if needed)
- 3 - 60 caterpillars and scrapers or Letrouneaus with ranners etcetera
- 4 - trucks - 2 Whites and rent 2 others

The necessary equipment for drilling holes for anchors etc.

If caterpillars don't make headway expected on lower end we will immediately put in another shovel and full outfit to work same.

All necessary small equipment to do job on hand also.

Concrete Plant.

5-sack foot mixer with necessary tower and plant to pour upper end and if possible on lower end we will use 6-sack paver. Depends on whether it can be worked to advantage on the slope.

Aggregate:

We intend to buy our aggregate from commercial source but if we are low on opening day will put engineer on job to make a complete survey of local aggregate, to be sure commercial prices are better than local production.

SCHEDULE

EL CAPITAN RESERVOIR DAM SPILLWAY EXTENSION

Item No.	Work or Material	Quantity and Price	Amount
1.	Excavation, Class 1, Station 7+40 to Station 10+37	50,000 cubic yards at Thirty cents words (\$.30) per cubic yard	\$ 15,000
2.	Excavation, Class 1, Station 10+37 to Station 15+50.	112,000 cubic yards at Thirty cents words (\$.30) per cubic yard	\$ 33,600
3.	Excavation, Class 1 Station 15+50 to Station 25+00	36,000 cubic yards at Thirty cents words (\$.30) per cubic yard	\$ 10,800
4.	Excavation, Class 2, Cut off trenches.	1,000 cubic yards at One Dollar words (\$ 1.00) per cubic yard	\$ 1,000
5.	Concrete, Class 1, in cut off walls.	1,000 cubic yards at Ten Dollars words (\$ 10.00) per cubic yard	\$ 10,000
6.	Concrete, Class 2, in floor lining.	6,000 cubic yards at Seven Dollars words (\$ 7.00) per cubic yard	\$ 42,000
7.	Concrete, Class 3, side wall lining.	2,900 cubic yards at Ten Dollars words (\$ 10.00) per cubic yard	\$ 29,000
8.	Cement in place in the work.	13,500 barrels at Two Dollars and Thirtysix cents (\$ 2.36) per barrel	\$ 31,860
9.	Reinforcing steel in place in the work.	520,000 pounds at Four cents words (\$.04) per pound (F.M.B.)	\$ 20,800
10.	4" drain tile in place in the work.	6,800 linear feet at Fifty cents words (\$.50) per linear foot	\$ 3,400
11.	6" drain tile in place in the work.	400 linear feet at Sixty cents words (\$.60) per linear foot	\$ 240
Total			197,700

FORM OF CONTRACT

THIS AGREEMENT, made and entered into at The City of San Diego, County of San Diego, State of California, this 23 day of April, 1934, by and between THE CITY OF SAN DIEGO, a municipal corporation in the County of San Diego, State of California, the party of the first part, acting by and through its Council, hereinafter sometimes designated as the City, and F M Bodenhamer D.B.A. Bodenhamer Construction Co.

party of the second part, and hereinafter sometimes designated as the Contractor, WITNESSETH:

ARTICLE I. That for and in consideration of the covenants and agreements hereinafter contained on the part of the City, and the sums of money hereinafter designated to be paid to the contractor by the City, in manner and form as hereinafter in attached specifications provided, the contractor hereby covenants and agrees to and with the City, to furnish all labor, tools, appliances, equipment, plant and transportation, and any and all other expense necessary or incidental to the performance of certain work hereinafter specified, and to build, erect, construct, complete and install the EL CAPITAN RESERVOIR DAM SPILLWAY EXTENSION in the County of San Diego, State of California being and as per Schedule all as more particularly and in detail set forth in those certain plans and specifications filed in the office of the City Clerk of The City of San Diego on the 19th day of March, 1934, marked "Document No. 287317," and endorsed "Notice Inviting Bids, Proposal, Drawings and Specifications,

EL CAPITAN RESERVOIR DAM SPILLWAY EXTENSION

said plans consisting of six sheets, and said specifications consisting of 47 sheets; true copies of the notice inviting bids, proposal of contractor, and plans and specifications are hereunto annexed marked "Exhibit A" by reference thereto incorporated herein and made a part hereof as though in this paragraph fully set forth.

ARTICLE II. In consideration of the construction and completion of the work by the contractor herein undertaken, according to the terms of this contract, and the faithful performance of all the obligations and covenants by the contractor herein undertaken and agreed upon, the contractor shall be paid as is provided in the specifications attached hereto.

ARTICLE III. The contractor hereby agrees that he will be bound by each and every part of the plans and specifications, and do and cause to be done all of said work and improvement as specified in the specifications and as shown upon the plans, as the same may be interpreted by the Hydraulic Engineer Division of Development and Conservation of the Water Department of said City, subject to written approval, by the City Manager and by The Council evidenced by Resolution.

ARTICLE IV. No interest in this agreement shall be transferred by the Contractor to any other party, and any such transfer shall cause annulment of this contract, so far as The City of San Diego is concerned. All rights of action, however, for any breach of this contract are reserved to said City.

ARTICLE V. The Contractor shall keep harmless and indemnify The City of San Diego, its officers and agents, from all damage, cost or expense that arises or is set up for infringement of patent rights of any one for use by The City of San Diego its officers or agents, of articles supplied by the Contractor under this contract, of which he is not patentee, or which he is not entitled to use or sell.

ARTICLE VI. The Contractor further agrees and covenants that neither the Contractor, nor any subcontractor doing work or performing labor pursuant to the terms of this contract, who directs or controls the work of any laborer, workman or mechanic upon any of the work provided for in this contract to be done, shall require or permit any such laborer, workman or mechanic to labor more than eight (8) hours during any one calendar day, in violation of the provisions of the Charter of The City of San Diego and that the Contractor shall forfeit as a penalty to the City Ten Dollars (\$10.00) for each laborer, workman or mechanic employed by the Contractor or by any subcontractor upon any of the work by this contract

provided to be done 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 the provisions of said Charter; and that the Contractor will not knowingly employ or cause or allow to be employed upon any of the work provided in this contract to be done by any alien contrary to the provisions of said Charter and/or of the Public Work Alien Employment Act of the State of California (Statutes of 1931, Chapter 398) or contrary to Section 197 of the Charter of the City of San Diego and that the Contractor shall forfeit as a penalty to the City Ten Dollars (\$10.00) for each alien knowingly employed upon any of the work provided in this contract to be done, by the Contractor or any subcontractor, contrary to the provisions of said Charter and/or said statute, for each calendar day, or portion thereof, during which such alien is permitted or required to labor in violation thereof.

ARTICLE VII. The Contractor further agrees and covenants that in the performance of the work contemplated by this contract he will conform to, abide by and observe all of the requirements included in the following specific conditions:

1. **Labor Preferences.**—In the employment of labor, preference shall be given, when they are qualified, to ex-service men with dependents, and then in the following order (a) to citizens of the United States who are bona fide residents of the City of San Diego or who filed declaration of intention to become citizens, and (b) to citizens of the United States who are residents of the State of California or who have filed declaration of intention to become citizens.

2. **Convict Labor.**—No convict labor shall be employed on the work and no materials manufactured or produced by convict labor shall be used on the work.

3. **Forty-Hour Week.**—Except in executive, administrative and supervisory positions, so far as practical and feasible, in the opinion of the engineer, no individual directly employed on the work shall be permitted to work more than forty hours in any one week.

4. **Wages.**—(a) A clear, legible statement of all minimum wage rates to be paid to the several classes of labor, workmen and mechanics to be employed on the work shall be posted in a prominent and easily accessible place at the site of the work, and the contractor and all subcontractors shall keep a true and accurate record of the hours worked each day by each employee, and the wages paid to each employee, and shall furnish the engineer with a sworn statement thereof on demand.

(b) Designated minimum rates of wages shall not be used in discriminating against assistants, helpers, apprentices and serving laborer who work and serve skilled journeymen mechanics and who are not termed as "laborers."

5. **Human Labor.**—The maximum of human labor shall be used in lieu of machinery wherever practicable and consistent with sound economic and public advantage; and to the extent that the work may be accomplished at no greater expense by human labor than by the use of machinery.

6. **Accident Prevention.**—The contractor shall at all times exercise reasonable precautions for the safety of employees on the work and shall comply with all applicable provisions of the Federal, State and Municipal safety laws and building and construction codes. All machinery and equipment and other physical hazards shall be guarded in accordance with safety codes approved by the American Standards Association, unless such codes are incompatible with Federal, State or Municipal laws or regulations.

7. **Materials.**—No machinery or materials shall be used or employed in connection with such construction work except such as shall have been produced or manufactured in the United States or its territories.

8. **Local Preference.**—So far as practicable, preference shall be given to the use of locally produced materials if such does not involve higher cost, inferior quality or insufficient quantities, subject to the determination of the engineer.

ARTICLE VIII. The contractor further agrees that in the performance of the work contemplated by this contract, he will conform to and abide by all the requirements and provisions of the Charter of The City of San Diego relating to the rate of wages to be paid on public work and that not less than the prevailing rate of per diem wages hereinafter specified shall be paid to all laborers, workmen and mechanics employed by the Contractor, or any subcontractor, in the performance of the work contemplated by this contract; and that the contractor shall forfeit as a penalty to the City ten dollars (\$10.00) for each laborer, workman or mechanic employed, for each calendar day, or portion thereof, such laborer workman or mechanic is paid less than the following specified rate for any work done under this contract by the contractor, or by any subcontractor:

Classification	Per Diem Wage of 8 Hours	Classification	Per Diem Wage of 8 Hours
Auto Mechanics	\$6.40	Hoist Operators	\$6.00
Blacksmiths	6.40	Laborers	5.00
Blacksmith Helpers	5.00	Materialmen	5.00
Carpenter Foremen	9.00	Mechanics	6.40
Carpenters	8.00	Mechanics Helpers	5.00
Carpenter Apprentices	5.00	Mechanic Trouble Shooters	6.00
Clerks	5.00	Powdermen	6.00
Cement Finishers	7.00	Powdermen Helpers	5.00
Compressor Operators	6.00	Pump Men	5.00
Concrete Finishers	7.00	Reinforcing Steel Workers	8.00
Concrete Finisher Helpers	5.00	Reinforcing Steel Foremen	9.00
Concrete Foremen	6.00	Shovel Operators	9.00
Concrete Form Builders	8.00	Shovel Cranesmen	9.00
Concrete Spreaders	5.50	Shovel Oilers	6.00
Concrete Tampers	5.00	Shovel Pitmen	5.00
Concrete Mixermen	8.00	Superintendents	9.00
Cooks	5.50	Teamsters	5.00
Crane Operators	7.00	Tractor Operators over 50 H.P.	7.20
Dragline Operators	7.00	Tractor Operators under 50 H.P.	6.80
Dragline Operator Helpers	5.00	Timekeepers	5.00
Drillers	5.50	Truck Drivers under 15,500 pounds	5.50
Drill Sharpeners	6.00	Truck Drivers over 15,500 and under 25,000 pounds	6.00
Electricians	8.00	Truck Drivers over 25,000 pounds	6.50
Electrician Helpers	6.50	Watchmen	4.50
Excavation Foremen	6.00	Other classes not less than	5.00
Flunkeys	5.00		
General Foremen	9.00		

For over time work when the same is permitted by law, one and one-half times the foregoing rates. For work performed on Sundays and legal holidays as set forth in Section 10 of the Political Code of the State of California, one and one-half times the above rates.

ARTICLE IX. It is mutually agreed between the parties hereto that in no case unauthorized by the Charter of The City of San Diego or the general laws in effect in said City, shall said City, or any department, board or officer thereof be liable for any portion of the contract price.

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 Albert W. Bennett
LeRoy E. Goodbody
Wayne A. Hood
Harry Warburton
Chas E Anderson

ATTEST:

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

ATTEST:

B C Fatland

Members of the Council,
Bodenhamer Construction Co.
F M Bodenhamer
 Contractor.

(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 23 day of April, 1934.

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

CERTIFICATE OF COMPLIANCE WITH EXECUTIVE ORDER
OF THE PRESIDENT OF THE UNITED STATES, DATED
MARCH 14, 1934, AND ENTITLED, "GOVERNMENT CON-
TRACTS AND CONTRACTS INVOLVING THE USE OF GOV-
ERNMENT FUNDS".

IT IS HEREBY CERTIFIED that the undersigned is comply-
ing with and will continue to comply with each approved code
of fair competition to which he is, or may become, subject;
and that The City of San Diego shall have the right to cancel
this contract for failure to comply with this provision
thereof, and thereafter make open market purchases or have
the work called for by the contract otherwise performed, at
the expense of the contractor.

THE UNDERSIGNED FURTHER CERTIFIES that he will not
accept or purchase for the performance of this work or enter
into any subcontracts for any articles, materials or supplies,
in whole or in part produced or furnished by any person who
shall not have certified that he is complying with and will
continue to comply with each code of fair competition which
relates to such articles, materials or supplies; or in case
there is no approved code for the whole or any portion thereof
then, to that extent, with an agreement with the President
under Section 4(a) of the National Industrial Recovery Act.

WE HEREBY FURTHER AGREE that whenever a dispute shall
arise, between The City of San Diego and the undersigned,
supplier of materials, or other person, as to compliance with
any code of fair competition or with an agreement with the
President under Section 4(a) of the National Industrial Re-
covery Act in connection with this contract, subcontract or
purchase order mentioned herein, the Administrator for Indus-
trial Recovery or such agency as he shall designate shall
decide such dispute; and for the purposes of action under
this executive order it is agreed that such decision shall be
final and conclusive; and it is further agreed that the de-
termination of such agency of the United States shall be
effective for all purposes, pending such final decision.

Dated April 23rd, 1934.

BODENHAMER CONSTRUCTION CO.

(Signed) F. M. Bodenhamer

STATE OF CALIFORNIA

County of San Diego

} SS.

On this 23rd day of April A.D. 1934 before me, Helen C. Wallace, a Notary Public in and for the County of San Diego personally appeared Donald B. Goldsmith, Attorney-in-Fact of the MASSACHUSETTS BONDING AND INSURANCE COMPANY, to me personally known to be the individual and officer described in and who executed the within instrument, and he acknowledged the same, and being by me duly sworn, deposes and says that he is the said officer of the Company aforesaid, and the seal affixed to the within instrument is the corporate seal of said Company, and that the said corporate seal and his signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said corporation.

(SEAL)

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

HELEN C. WALLACE (signature)
Notary Public in and for the County
of San Diego State of California
My commission expires March 12, 1938

FORM OF FAITHFUL PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, That F M Bodenhamer D.B.A.

Massachusetts Bonding and Insurance Company

as principal, and

a corporation organized and existing under and by virtue of the laws of the State of Massachusetts

as surety, are held and firmly bound unto The City of San Diego, a municipal corporation in the County of San Diego, State of California, in the sum of One hundred forty-eight thousand two hundred seventy five and no/100----- Dollars

(\$148,275.00....) (not less than seventy-five per cent of estimated contract price), lawful money of the United States of America, to be paid to The City of San Diego, for the payment of which, well and truly to be made, we hereby bind ourselves, our heirs, administrators, executors, successors and assigns, jointly and severally firmly by these presents.

Signed by us and dated this 23 day of April 1934

The condition of the above and foregoing obligation is such that whereas, the said principal has entered into the annexed contract with The City of San Diego to furnish all materials, and all labor, tools, appliances, transportation and other expenses necessary or incidental to the construction, completion and installation of El Capitan Reservoir Dam Spillway Extension in the County of San Deigo, State of California, all as more particularly and in detail shown upon those certain plans and specifications filed in the office of the City Clerk of The City of San Diego on the 19

day of March, 1934, marked Document No. 287317 287568 and endorsed Notice inviting bids, proposal, drawings and specifications El Capitan Reservoir Dam Spillway Extension; said plans consisting of five sheets,

and said specifications consisting of forty-seven sheets, copies of which plans and specifications are attached to said contract and made a part thereof as in said contract provided; and reference is hereby made to said contract and to said plans and specifications for a particular description of the work to be done.

Now, therefore, if the said principal shall faithfully perform the said contract, then the above obligation to be void, otherwise to remain in full force and effect.

IN WITNESS WHEREOF the said principal and surety have caused these presents to be executed and their corporate names and seals to be hereunto attached by their proper officers, thereunto duly authorized, the day and year first hereinabove written.

ATTEST: Bodenhamer Construction Co
Principal.
B C Fatland By F M Bodenhamer

ATTEST: Massachusetts Bonding and Insurance Co. Surety.
B 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.

STATE
COUNTY
MARCH
1934
JAN 18
4

I hereby approve the form of the within Bond this 23 day of April, 19 34

C L Byers

City Attorney of The City of San Diego.

FORM OF FAITHFUL PERFORMANCE BOND

Approved by a majority of the members of the Council of The City of San Diego this 23

day of April, 19 34

Albert W Bennett

LeRoy E Goodbody

Wayne A Hood

Harry Warburton

Chas E Anderson

ATTEST:

Allen H Wright
City Clerk

By Fred W Sick
Deputy

Members of the Council.

FORM OF LABOR AND MATERIALMEN'S BOND

KNOW ALL MEN BY THESE PRESENTS, That F M Bodenhamer D.B.A.

Bodenhamer Construction Co.

as principal, and Massachusetts Bonding and Insurance Company

a corporation organized and existing under and by virtue of the laws of the State of Massachusetts,

as surety, are held and firmly bound unto The City of San Diego, a municipal corporation in the County of San Diego, State of California, in the sum of Ninety-eight thousand eight hundred fifty and no/100 Dollars (\$ 98,850.00)

(not less than fifty per cent of estimated contract price), lawful money of the United States of America, to be paid to The City of San Diego for the payment of which, well and truly to be made, we hereby bind ourselves, our heirs, administrators, executors, successors and assigns jointly and severally, firmly by these presents.

Signed by us and dated this 23 day of April, 1934

The condition of the above and foregoing obligation is such that Whereas, the said principal has entered into the annexed contract with The City of San Diego to furnish all materials, and all labor, tools, appliances, transportation and other expenses necessary or incidental to the construction, completion and installation of

El Capitan Reservoir Dam Spillway Extension in the County of San Diego, State of California, all as more particularly and in detail shown upon those certain plans and specifications

filed in the office of the City Clerk of said The City of San Diego on the 19 day of March

1934, marked Document No. 287317 287568, and endorsed Notice inviting bids, proposal drawings and specifications forty-

said plans consisting of five sheets and said specifications consisting of seven sheets, copies of which plans and specifications are attached to said contract and made a part thereof as in said Contract provided; and reference is hereby made to said contract and to said plans and specifications for a particular description of the work to be done. Ninety-eight thousand eight hundred

And whereas, the aforesaid penal sum of fifty and no/100-----Dollars (\$ 98,850.00) being not less than one-half of the total amount payable by the terms of said contract, is intended and is hereby made to inure to and for the use of any and all persons, companies or corporations who perform labor on or furnish materials to be used in the said work;

NOW, THEREFORE, should the above bounden principal well and truly pay or cause to be paid all

claims against him

for such labor or materials, supplies, teams, or transportation, or either, or both, so performed or furnished, as the case may be then this obligation to be null and void; otherwise to be and remain in full force and effect and the same is hereby expressly made to inure to the benefit of any and all persons who perform labor upon or furnish materials, supplies, teams or transportation to be used in the work described in said contract, or in any modification thereof; and any and all such persons shall have and are given a right of action to recover upon this bond against the said principal and Surety, or either of them, in any suit brought to foreclose mechanics' liens, which may be filed by such persons or either of them, upon the property mentioned in said contract, or in a separate suit brought upon this bond, and may recover in such action or actions, the value of such labor done or materials, supplies, teams or transportation furnished, or both, together with a reasonable attorney's fee to be fixed by the Court, not exceeding, however, in the aggregate of said recoveries, the amount of this bond as above specified.

STATE OF CALIFORNIA

County of San Diego

}
} SS.

On this 23rd day of April A.D. 1934 before me, Helen C. Wallace, a Notary Public in and for the County of San Diego personally appeared Donald B. Goldsmith, Attorney-in-Fact of the MASSACHUSETTS BONDING AND INSURANCE COMPANY, to me personally known to be the individual and officer described in and who executed the within instrument, and he acknowledged the same, and being by me duly sworn, deposes and says that he is the said officer of the Company aforesaid, and the seal affixed to the within instrument is the corporate seal of said Company, and that the said corporate seal and his signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said corporation.

(SEAL)

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

HELEN C. WALLACE (signature)
Notary Public in and for the County of
San Diego State of California
My commission expires March 12, 1938

IN WITNESS WHEREOF, the said principal and surety have caused these presents to be executed and their corporate names and seals to be hereunto attached by their proper officers thereunto duly authorized, the day and year first hereinabove written.

ATTEST:

B C Fatland

Bodenhamer Construction Co.

Principal.

By F M Bodenhamer

ATTEST:

B C Fatland

Massachusetts Bonding and Insurance Co.

Surety.

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 23 day of April, 1934

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 April 23 day of 1934

THE CITY OF SAN DIEGO.

By Albert W Bennett

ATTEST:

Allen H Wright
City Clerk

LeRoy E Goodbody

Wayne A Hood

By Fred W Sick
Deputy

Harry Warburton

Chas E Anderson

Members of the Council.

SPECIFICATIONS

GENERAL CONDITIONS

1. **Form of Proposal and Signature.**—The proposal shall be made on the form provided therefor and shall be enclosed in a sealed envelope marked and addressed as required in the Information for Bidders. The bidder shall state in words and figures the unit prices or the specified sums, as the case may be, for which he proposes to supply the materials or machinery and perform the work required by these specifications. If the proposal is made by an individual it shall be signed with his full name, and his address shall be given; if it is made by a firm it shall be signed with the copartnership name by a member of the firm, who shall also sign his own name, and the name and address of each member and the address of the firm shall be given; and if it is made by a corporation, it shall be signed by an officer with the corporate name attested by the corporate seal, and the names, addresses and titles of all officers of the corporation and the address of the corporation shall be given. No telegraphic proposal or telegraphic modification of a proposal will be considered.

2. **Proposal.**—Blank spaces in the proposal should be properly filled. The phraseology of the proposal must not be changed, and no additions should be made to the items mentioned therein. Unauthorized conditions, limitations, or provisos attached to a proposal will render it informal and may cause its rejection. Alterations by erasure or interlineation must be explained or noted in the proposal over the signature of the bidder. If the unit price and the total amount named by a bidder for any item do not agree, the unit price alone will be considered as representing the bidder's intention. A bidder may withdraw his proposal before the expiration of the time during which proposals may be submitted, without prejudice to himself, by submitting a written request for its withdrawal to the officer who holds it. No proposals received after said time or at any place other than the place of opening as stated in the Notice Inviting Bids will be considered. Bidders, their representatives, and other 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 Inviting Bids, 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 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. This form may be examined at the offices of the City Clerk, or copies will be furnished on request to parties proposing to bid. 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 Notice Inviting Bids, Information for Bidders, Proposal, General Conditions, and Detail Specifications will be incorporated in the contract. A corporation to which an award is made will be required, before the contract is finally executed, to furnish evidence of its corporate existence and evidence that the officer signing the contract and bond for the corporation is duly authorized to do so.

5. **Contractor's Bonds.**—Unless another sum is specified in the Information for Bidders, the contractor shall furnish a labor 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.

The contractor shall also furnish a faithful performance bond in an amount not less than seventy-five 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 die, or, 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.**—No interest in this agreement shall be transferred to any other party, and any such transfer shall cause annulment of the contract so far as The City of San Diego is concerned; all rights of action, however, for breach of this contract are reserved to The City of San Diego.

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. Work, material, or machinery not in accordance with these specifications, in the opinion of the engineer, shall be made to conform thereto. Unsatisfactory material will be rejected, and, if so ordered by the engineer, shall, at the contractor's expense, be immediately removed from the vicinity of the work.

11. **Delays.**—If any delay is caused the contractor by specific orders of the engineer to stop work, or by the performance of extra work ordered by the engineer, or by the failure of 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 of the contract period no liquidated damages shall accrue for a period equivalent to such delay.

12. **Suspension of Contract.**—If the contractor fails to begin the delivery of the material, or to commence work as provided in the contract, or fails to make delivery of material promptly as ordered, or to maintain the rate of delivery of material or progress of the work in such manner as in the opinion of the engineer will insure a full compliance with the contract within the time limit, or if in the opinion of the engineer the contractor is not carrying out the provisions of the contract in their true intent and meaning,

written notice will be served on him to provide within a specified time for a satisfactory compliance with the contract, and if he neglects or refuses to comply with such notice the engineer may with the written consent of the City Manager and consent of the Council evidenced by resolution, suspend the operation of all or any part of the contract, or he may in his discretion after such notice perform any part of the work or purchase any or all of the material included in the contract or required for the completion thereof without suspending the contract. Upon suspension of contract by the engineer, he may, in his discretion, take possession of all or any part of the machinery, tools, appliances, animals, materials, and supplies used in the work covered by the contract or that have been delivered by or on account of the contractor for use in connection therewith, and the same may be used either directly by The City of San Diego or by other parties for it, in the completion of the work suspended; or The City of San Diego may employ other parties to perform the work, or may substitute other machinery or materials purchase the materials contracted for in such manner as it may deem proper or hire such force and buy such machinery, tools, appliances, animals, materials and supplies at the contractor's expense as may be necessary for the proper conduct and completion of the work. Any cost to The City of San Diego in excess of the contract price arising from the suspension of the contract, or from work performed or purchases made by The City of San Diego either before or after suspension, and required on account of the failure of the contractor to comply with his contract or the orders of the engineer issued in pursuance thereof, will be charged to the contractor and his sureties, who shall be liable therefor. A special lien to secure the claims of The City of San Diego in the event of suspension of the contract is hereby created against any property of the contractor taken into the possession of The City of San Diego under the terms hereof, and such lien may be enforced by a sale of such property under the direction of the Council of The City of San Diego, and the proceeds of the sale, after deducting all expenses thereof, and connected therewith, shall be credited to the contractor. If the net credits shall be in excess of the claims of The City of San Diego against the contractor the balance will be paid to the contractor or his legal representatives. If, in the opinion of the engineer, an emergency exists for the furnishing of certain material or the performance of certain work in order to insure compliance with the terms of the contract and if the contractor fails to furnish such material or to perform such work within a reasonable time fixed by written notice from the engineer to the contractor, then the engineer shall have the power to furnish such material or to perform such work at the expense of the contractor and his sureties, who shall be liable therefor. In the determination of the question whether there has been such non-compliance with the contract as to warrant its suspension or the furnishing of material or the performance of work by The City of San Diego as herein provided, the decision of the engineer when approved by the City Manager and by the Council evidenced by resolution, shall be final and binding upon both parties. Suspension of the contract, or any part thereof, shall operate only to terminate the right of the contractor to proceed with the work covered by the contract or the suspended portions thereof. The provisions of the contract permitting The City of San Diego to make changes and to make proper adjustment of accounts to cover any increase or decrease of cost on account of such changes, and all other stipulations of the contract except those giving the contractor the right to proceed with work on the items covered by the suspension, shall be and remain in full force and effect after such suspension and until the contract shall have been completed and final payment or final adjustment of accounts made.

13. **Changes.**—The engineer may, without notice to the sureties on the contractor's bonds, make changes: (a) in the designs or 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 canals, dams and other 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 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.

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 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.

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 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 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 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, shall have at all times access to all parts of the shop where such material under his inspection is being manufactured. Work or material that does not conform to the specifications, although accepted through oversight or otherwise, may be rejected at any state of the work. Whenever the contractor on installation or construction is permitted or directed to do night work or to vary the period during which work is carried on each day, he shall give the engineer due notice so that inspection may be provided. Such work shall be done without extra compensation and under regulations to be furnished in writing by the engineer.

18. **Contractor's Financial Obligations.**—The contractor shall promptly make payments to all persons supplying labor and materials in the execution of the contract, and a condition to this effect shall be incorporated in the contractor's bond.

19. **Experience.**—Bidders, if required, shall present satisfactory evidence as to their responsibility and that they are fully prepared with necessary capital, machinery and material to begin the work promptly and to conduct it as required by these specifications.

20. **Specifications and Drawings.**—The contractor shall keep on the work a copy of the specifications and drawings and shall at all times give the engineer access thereto. Any drawings or plans listed in the detail specifications shall be regarded as part thereof and of the contract. Anything mentioned in these specifications and not shown on the drawings or shown on the drawings and not mentioned in these specifications shall be of like effect as though shown or mentioned in both. The engineer will furnish from time to time such detail drawings, plans, profiles, and information as he may consider necessary for the contractor's guidance, unless otherwise provided in the 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 of the terms of his contract. The accuracy of the interpretation of the facts disclosed by borings or other preliminary investigations is not guaranteed. Each bidder or his representative should visit the site of the work and familiarize himself with local conditions.

22. **Data To Be Furnished By The Contractor.**—The contractor shall furnish the engineer reasonable facilities for obtaining such information as he may desire respecting the character of the materials and the progress and manner of the work, including all information necessary to determine its cost, such as the number of men employed, their pay, the time during which they worked on the various classes of construction, etc. 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.

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 Indemnity Insurance.**—The contractor shall furnish The City of San Diego with a certificate of the insurance carrier with whom said contractor is carrying a policy of insurance, acknowledging full liability, and covering all employees connected with the work specified in this contract, and insuring said contractor against loss or liability by reason of the Workmen's Compensation Insurance and Safety Act of 1917 and amendments thereto, said certificate of the insurance carrier to bear the date of the expiration of said policy.

39. **Compliance With Laws.**—The contractor shall conduct the work in compliance with all laws and regulations of the United States, 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.

DETAIL SPECIFICATIONS

Special Conditions

40. REQUIREMENT.- It is required that there be constructed and completed in accordance with the drawings hereinbelow listed, and these specifications, the El Capitan Reservoir Dam Spillway Extension. The work is located on the San Diego River, about eight miles northeasterly from the town of Lakeside. The latter is about twenty-one miles northeasterly from the City of San Diego, and is the terminal of the Lakeside branch of the San Diego and Arizona Railway.

41. LIST OF DRAWINGS.-

WD-285	Geography
WD-462	General plan and sections
WD-449 Sheet 2	Portion of detail plan and profile
WD-449 Sheet 7a	Drainage system
WD-460	Sections and details
WD-498	Sections and details

42. COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK.-

Work shall be commenced by the Contractor within ten (10) days after the execution of the contract on behalf of the City of San Diego and shall be completed on or before September 30, 1934. If the City of San Diego occupies more than fifteen days time after the opening of bids in awarding and executing contract, exclusive of the time occupied in transmitting contract and bonds to and from the contractor and in the execution of such papers by him. the Contractor will be

entitled to an extension of time for a period equivalent to the excess time so used by the City of San Diego. The contractor shall at all times during the continuance of this contract prosecute the work with such force and equipment as, in the judgment of the engineer, are sufficient to complete it within the specified time.

43. 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 one hundred dollars per day will be made for each and every day, including Sundays and holidays, that such work remains uncompleted after the date required for completion. The said amount is 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 employees after the expiration of the time for completion, and on account of the values 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.

44. 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 fifty cents per meal. 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.

45. WATER FOR PLANT, CONSTRUCTION AND DOMESTIC USE.- Water for all of the mechanical, construction and domestic requirements of the work in so far as it is available in the river channel or bed, shall be obtained therefrom, and there shall be pumped and stored a sufficient quantity at an elevation which will insure at all times a continuous adequate supply under ample pressure for the work.

46. TWO DAILY SHIFTS OF LABOR.- There shall be employed upon the work two daily shifts of labor when required by the engineer. There shall be provided by the contractor an ample number of electric lights to effectively illuminate all work in progress at night.

47. REMOVAL OF TEMPORARY WORKS.- All temporary structures shall be removed from the work at the contractor's own expense whenever they have served their purpose or upon completion of the work, but not until permitted by the engineer.

48. CONSTRUCTION PROGRAM.- The construction program shall at all times be subject to the approval of the engineer. The capacity of the construction plant, sequence of operations, and method of operation shall be such as to insure the completion of the work within the time of completion specified. Because of the contract between the City of San Diego and H. W. Rohl and

T. E. Connolly for the construction of the El Capitan Reservoir Dam, Spillway and Outlet Works, no work is to be done between Station 7+40 and Station 8+40 until written authorization is given by the engineer. It should be noted that some spillway excavation has been accomplished which is not shown on the drawings.

49. 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 twentyfive 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. The twentyfive 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 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.

EXCAVATION

UNDER THIS HEAD IS INCLUDED ALL EXCAVATION INVOLVED IN
THE CONSTRUCTION OF THE EL CAPITAN RESERVOIR DAM
SPILLWAY EXTENSION

50. EXCAVATION. - All excavation for the spillway extension, including excavation for cut-off trenches shall be made as indicated on the drawings or as directed by the engineer, on the location and along the lines and grades staked by the engineer. The price bid for excavation shall include the cost of all power and appliances, of all labor and hauling and of all material for excavation, including clearing site, blasting, pumping, bailing, draining, timbering, hand trimming, 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 will be made at the respective unit prices bid.

No payment will be made for materials of any class coming from outside of, or beyond, 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 the material excavated. On written request by 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 estimate will be furnished him within ten days after the receipt of such request. This statement will be considered as satisfactory to the contractor unless he files with the engineer in writing specific objections thereto with reasons therefor, within

ten days after receipt of said statement by the contractor or his representative on the work. Failure to file such written objections, with reasons therefor, within said ten days, shall be considered a waiver of all claims based on alleged erroneous estimates of quantities or incorrect classification of materials for the work covered by such statement.

51. CLASSIFICATION OF EXCAVATION.- Class 1. - All material excavated except for cut-off trenches and drains. Class 2. - All material excavated from cut-off trenches.

52. MEASUREMENT OF EXCAVATION.- Excavation will be measured for payment in excavation to the neat lines shown on the drawings or prescribed by the engineer. No payment will be made for material coming from outside the lines shown on the drawings or prescribed by the engineer.

53. WASTING OF EXCAVATED MATERIAL. Solid rock suitable, in the opinion of the Engineer, for rip rap for future protection of the spillway shall be separated from the remaining material and deposited in an embankment adjacent to the south side of the spillway extension between station 10+00, and station 23+00 and/or as directed by the engineer.

Except for special written permission by the engineer, all other material shall be deposited in a continuous spoil bank with uniform and slightly surfaces between the spillway extension and the river channel all westerly and southwesterly of about station 10+00, and all as directed by the engineer. No material shall be placed within 50 feet of the center line of the San Diego River. No material shall be placed above elevation 575 except by special written permission of the engineer. The cost of all work described in this paragraph shall be included in the respective unit prices bid for excavation.

54. BLASTING. Any blasting which, in the opinion of the engineer may injure the work will not be permitted and any damage done to the work by blasting shall be repaired to the satisfaction of the engineer by the contractor at his expense. Whenever, in the opinion of the engineer, blasting is liable to injure any foundation rock, the required excavation shall be accomplished by drilling, plug and feathers, wedging and gadding, or other methods approved by the engineer. Caps, detonators and fuses shall in no case be stored or kept in the same place in which dynamite or other explosives are stored. The location and design of powder magazines, methods of transporting explosives and in general all precautions taken to prevent accidents must be satisfactory to the engineer, but the contractor shall be liable for all damages to persons or property caused by blasts or explosives.

55. CUT-OFF TRENCHES. The excavation for the cut-off trenches under the spillway structure shall be made to a sufficient depth and width in the opinion of the engineer to secure suitable foundation. Where required, timbering shall be placed in a manner satisfactory to the engineer, but the contractor shall be liable for its sufficiency and for any damage to life or property. None of the timbering shall be left in the concrete. Payment will be made at the unit price bid which shall include the cost of all timbering, labor, materials and operations.

11-25-32

6

CONCRETE

UNDER THIS HEAD IS INCLUDED ALL CONCRETE WORK INVOLVED
AND INCLUDED IN THE CONSTRUCTION OF THE
EL CAPITAN RESERVOIR DAM SPILLWAY EXTENSION

56. CONSTRUCTION OF SPILLWAY EXTENSION CONCRETE.-The order of the construction of the several portions of the spillway extension shall be subject to the approval of the engineer. All concrete shall be carefully finished to the lines and dimensions shown on the drawings or as prescribed by the engineer. The dimensions of each structure shown on the drawings will be subject to such changes as may be found necessary to adapt such structures to the conditions disclosed by the excavation therefor.

57. CEMENT.-All cement used on this work shall be of a standard brand Portland cement which has been successfully used in similar construction for not less than three years. It must conform to the Standard Specifications and Test for Portland Cement, Serial Designation: C 9-26, with subsequent amendments, of the American Society for Testing Materials, and shall be delivered in good order in suitable sacks or barrels with the brand and name of the manufacturer plainly marked thereon. All cement proposed for use will be tested by the engineer and the contractor shall make ample time allowance for such testing in planning deliveries. Any cement failing to meet the requirements of the tests provided by these specifications or which has hardened due to exposure or other causes, or which has been otherwise damaged from any cause, will be rejected and must be immediately removed from the site of the

11-35-33

8

work. One sack of cement shall be considered equivalent to one cubic foot by volume. The contractor shall furnish and maintain at the work suitable weatherproof warehousing for storing cement 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 the work will be paid for in accordance with the price bid, which price shall include hauling to the work and all handling and protection. Cement racks or barrels may be retained by the contractor. He shall install and operate at the dam site a power driven mechanical pack shaker and all cement recovered by the operation of such shaker shall be the property of the City.

58. CONCRETE COMPOSITION.-Concrete shall be composed of cement, sand and broken rock or clean gravel, graduated as to sizes 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 and one-half parts of sand and about five parts of broken rock or gravel for the mass concrete used. 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 rock or gravel for the reinforced concrete used in the spillway extension and wherever directed by the engineer. These proportions will be modified by the engineer, for concrete in any portion of the work as the character of the requirements

11-25-33
c

and the nature of the materials used may render it desirable and the contractor shall not be entitled to any extra compensation by reason of such modifications.

59. SAND.-Sand used for concrete shall produce a 1:3 mortar, having a strength about equal to the strength of a 1:3 mortar made with Standard Ottawa Sand. Sand, if satisfactory for concrete, may be obtained from natural deposits if existing in the vicinity of the dam. All sand used for concrete shall be washed to free it from loam and organic or other deleterious matter and shall not contain more than five per cent by weight of clayey and other objectionable and organic material. The sand washing machinery, its operation and the resulting sand shall be satisfactory to the engineer. The sand particles shall be hard, dense, strong, durable rock fragments and shall be screened and shall pass a three-eighth-inch ring. The screen shall be equal in efficiency to a machine having for its essential part a revolving, circular, metal cylinder, suitably perforated, and with its axis inclined to the horizontal at an angle closely approaching seven degrees. Sand shall be so graded in size that in no case, by laboratory test, will more than six per cent thereof pass a No. 100 screen. Any excess of fine particles shall be varied by the contractor as directed by the engineer. The cost of all operations connected with furnishing and the using of sand in the work shall be included in the prices bid for concrete.

60.-CRUSHING ROCK FOR SAND.-In the event the contractor elects at his own cost to manufacture sand, suitable machinery

shall be installed and sand manufactured by crushing and screening approved portions of rock to be obtained from the excavation or elsewhere if not used for the dam. The manufactured sand shall be screened and any portion failing to pass a three-eighths inch ring shall not be used for sand. The screen shall be equal in efficiency to a machine having for its essential part a revolving, circular, metal cylinder, suitably perforated, and with its axis inclined to the horizontal at an angle closely approaching seven degrees. The machinery used for crushing rock for sand, its operation, and the resulting sand shall be satisfactory to the engineer. The gradation of the sand shall be the most uniform practicable to produce with the crushing machinery, and shall closely approach, by laboratory test, the following sizes and per cents:

Passing 3/8" screen.....	100%
Retained on # 4 screen.....	20%
" " #20 "	60%
" " #40 "	70%
" "#100 "	95%

Any excess of fine particles shall be wasted by the contractor as directed by the engineer.

61. BROKEN ROCK AND GRAVEL.—Broken rock or gravel for concrete must be hard, dense, strong, durable rock fragments or pebbles. Rock to be broken and used for concrete shall, before being run through the crusher, be clean and free from all loamy and other deleterious matter. The rock shall either be picked from the excavation or just before entering the crusher, shall

11-25-33

c

be run over a suitable apron screen, installed to operate at the flattest slope practicable and not steeper than an angle of sixty degrees with the horizontal, and having long spaces about one inch wide between bars to separate all objectionable matter which shall be wasted by the contractor. All crushed rock to be used for making concrete shall contain the entire run of the crusher and shall all be screened and separated into three sizes and stocked in separate bins. The screens shall be equal in efficiency to a machine having for its essential parts revolving, circular, metal cylinders, suitably perforated, and with their axes inclined to the horizontal at an angle closely approaching seven degrees. 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-eighths inch ring.

All of the foregoing sized rock shall be so graded in size that in no case by laboratory test, will more than ten per cent pass the smaller opening mentioned. The engineer will, from time to time, determine the exact 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

11-25-33

c

mixture. For reinforced concrete and for concrete whose least dimension is less than 18 inches, the largest size of rock shall not be used. In case there is a shortage of any one size, it shall be promptly supplied by the contractor and he shall not be entitled to payment for surplus of any graded size of material. Rock may be obtained from quarry sites or gravel pits to be approved by the engineer. The cost of all sites, material and operations connected with the furnishing and using of rock or gravel aggregate for concrete required in the work shall be included in the price bid per cubic yard for concrete in place.

62. WATER.-The water used in mixing concrete must be 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.

63. 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.

11-25-33

c

Measuring devices which depend for their operation upon the flow of materials from hoppers or other approximate methods will not be allowed. The entire batch after being assembled in the mixer shall remain in the mixer and be mixed for not less than one and one-half minutes and longer if necessary to secure a satisfactory mix. The machine and its operation shall be subject to the approval of the engineer. In general, only enough water shall be used in mixing to give the concrete the consistency ordinarily designated as "workable". Concrete containing a minimum amount of water, ordinarily designated as "dry" concrete, will be permitted only where the nature of the work renders the use of "workable" concrete impracticable. Care shall be taken that a uniform mixture of the concrete is at all times maintained in the handling of the concrete. The contractor shall have a responsible foreman continuously in charge of each mixing gang, who shall see that all instructions issued by the engineer as to the matter of proportioning, mixing, handling, and placing concrete are carried out.

64. PLACING.-Concrete shall be placed in the work before the cement takes its initial set. No concrete shall be placed in water except by permission of the engineer and the method of its depositing shall be subject to his approval. Foundation surfaces upon which concrete is to be placed must be scrupulously clean. When the placing of concrete is to be interrupted long enough for the concrete to take its final set, the working face shall be given a shape by the use of forms or other means,

11-25-33

c

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, laitance removed, thoroughly cleaned and wet before the concrete is deposited. "Dry" concrete shall be deposited in layers not exceeding six inches in thickness, each of which shall be tamped until water appears on the surface. "Workable" concrete shall be poured and immediately spaded to place with suitable tamping bars, shovels, or forked tools until it completely fills the forms, 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 and tamping shall be done with a special view to obtaining the densest concrete and smoothest surfaces practicable. No concrete shall be placed except in the presence of a duly authorized inspector. When concrete is conveyed by chuting, the plant shall be of such size and design as to insure a practically continuous flow in the chute. The angle and design of the chute shall be such as to allow the concrete to flow without separation of the ingredients. The delivery end of the chute shall be as close as possible to point of deposit. When the operation is intermittent, the spout shall discharge into a hopper. The addition of water over and above that re-

11-25-33

6

quired for the mix will not be permitted. The chute shall be thoroughly flushed with water before and after each run; the water used for this purpose shall be discharged outside the forms. Concrete shall be deposited continuously and as rapidly as practicable until the unit of operation, approved by the engineer, is complete. The contractor will not be permitted to pour concrete to a height greater than six feet in any one day unless directed by the engineer.

65. FINISHING.-The surface of concrete finished against forms must be smooth, free from projections and thoroughly filled with mortar. Immediately upon the removal of forms all voids shall be neatly filled with cement mortar, irregularities in exposed surfaces shall be removed, and minor imperfections of finish shall be smoothed to the satisfaction of the engineer, after which one coat of thin grout shall be applied with brushes. 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 shall, where required, be rounded or beveled by the use of moulding strips, or finishing tools. The spillway channel and parapets shall be given a wood float finish. The cost of this work shall be included in the unit price bid for concrete.

66. FORMS.-Form to confine the concrete and shape it to the required lines shall be used wherever necessary. Forms shall be sufficiently tight to prevent leakage of mortar.

11-25-33

9

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, sized or matched and oiled; provided that smooth metal forms may be used if desired. All forms shall be removed by the contractor, 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 used again. The cost of all forms, their use and removal from the work shall be included in the unit prices bid for concrete in place.

67. 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 drawings, or as directed by 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. The cost of supporting forms shall be included in the unit prices bid for concrete in place.

11-25-33

e

68. REINFORCING STEEL.—Reinforcing steel shall be deformed or plain bars from new billet stock of structural grade in accordance with Standard Specifications for Billet-steel Concrete Reinforcement Bars, Serial Designation: A 15-14 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 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.

69. PREPARATION OF FOUNDATION.- The surfaces of the rock foundation 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 and other objectionable substances, as directed by the engineer, and shall be thoroughly washed with water under adequate pressure and scraped with metal tools to insure complete cleaning. Springs of water, if encountered, shall be piped and carried outside the concrete or grouted or both, as directed by the engineer. Before placing concrete on or against any foundation, all water shall be removed from all depressions. Seams or cavities occurring in foundation on or against which concrete is to be placed shall be thoroughly cleaned out and filled with concrete or mortar well rammed into place, as directed by the engineer. Wherever strata of earth or other undesirable material, which are liable to decompose, are encountered, it shall be mined out to the extent directed by the engineer. The spaces occupied by the strata and the drifts shall be thoroughly cleaned and filled with concrete or mortar well rammed into place as directed by the engineer. The cost of preparation of foundation and/or trimming for concrete shall be included in the unit prices bid for concrete.

70. FOUNDATION PIT WATER CONTROL.- The elevation of the water in the foundation pits for concrete work shall be kept at all times under control by the contractor so that no water will be in contact with the concrete until it is at least 48 hours old and no pressure shall be allowed against it until it is at least seven days old.

11-24-33

P

2506

71. CONTRACTION JOINTS.- Wherever shown on the drawings, or directed by the engineer, vertical contraction joints or horizontal construction joints, formed of concrete and built against forms, shall be built as directed. No vertical construction joints shall be made except in accordance with these details or as directed by the engineer. The entire face of each vertical contraction joint shall be painted with one coat of water-gas tar paint before the adjacent concrete is placed against it. The edges of all contraction joints shall be chamfered one and one-half inch. All costs in connection with contraction joints shall be included in the unit prices bid for concrete.

72. CONSTRUCTION JOINTS.- The top of the concrete under construction shall be kept at all times about level between contraction joints or such other limits as required. Wherever shown on the drawings or where directed by the engineer, construction joints shall be provided in a manner satisfactory to the engineer. All costs in connection with the construction joints shall be included in the unit prices bid for concrete.

73. BONDING.- The surface of concrete shall be kept free from deleterious matter and shall be thoroughly cleaned by the use of jets of water and compressed air, both under relatively high pressure, and metal brushes or other approved methods before pouring new concrete thereon. 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 unit prices bid for concrete.

74. CONCRETE TO BE KEPT MOIST.- Concrete shall be protected from the direct rays of the sun and be kept moist for at least two weeks or until covered, and the cost thereof shall be included in the unit price bid for concrete. In lieu of keeping the concrete moist the contractor will be permitted to apply such process curing or equivalent in the opinion of the engineer.

75. PROTECTION OF CONCRETE.- Until a sufficient time has elapsed for the setting of the concrete it will not be permitted to erect derricks or other machinery upon the surfaces of the concrete, nor to build forms thereon, nor to land or store heavy objects on such surfaces. The spillway lining shall be effectively protected from injury or disfigurement or abrasion or the falling of rock, tools, mortar or other objects until the completion of the work. All damage to the concrete shall be repaired by the contractor at his expense and to the satisfaction of the engineer, and shall be included in the unit price bid for concrete.

76. CONCRETE IN CURBS UNDER SPILLWAY.- Concrete shall be placed in the cutoff walls under the spillways so that it completely fills the trench, and in a manner satisfactory to the engineer. Payment will be made to the lines and grades established by the engineer. Payment will be made at the unit price bid which shall include the cost of all labor and materials, excepting cement and reinforcing steel which will be paid for as separate items.

77. CONCRETE IN LINING.- The concrete lining of the floor and side walls shall be constructed to the grades and dimensions

shown on the drawings or prescribed by the engineer. Care shall be taken in placing the concrete floor lining to properly prepare the base and to use concrete of such consistency as will give a smooth surface finish after screeding and rodding. Where directed by the engineer contraction joints shall be provided in a manner satisfactory to the engineer. The floor and side wall lining shall be securely anchored to the foundation as indicated on the drawings WD-498 sheet 1 of 1 or directed by the engineer, with bars grouted with cement into holes drilled in the foundation. Where the section is excavated to greater dimensions than specified or directed, the cavities shall be carefully and solidly backfilled with concrete at the contractor's expense and in a manner satisfactory to the engineer. Concrete will be measured for payment to the lines shown on the plans or prescribed by the engineer. Payment will be made at the respective unit prices bid which shall include the cost of all labor and materials, drilling anchor holes and setting and grouting of anchors, excepting cement and reinforcing steel which will be paid for as separate items.

78. MEASUREMENT OF CONCRETE.- Concrete will be measured for payment to the neat lines shown on the drawings or prescribed by the engineer. The minimum thickness of lining indicated on the drawings or prescribed by the engineer will be considered as determining the neat lines for payment. No payment for cement or concrete will be made for concrete outside the prescribed lines and in case any cavities resulting from careless excavation are required to be filled with concrete it shall be done at the contractor's expense.

79. BASIS OF PAYMENT.- Concrete will be paid for at the respective prices bid for concrete per cubic yard in place. The quantities of concrete to be paid for under these specifications shall be the actual quantity in cubic yards deposited in place within designated limits in accordance with the drawings or as prescribed by the engineer.

80. PAYMENT FOR CONCRETE.- Payment for concrete will be made at the unit prices bid, which shall include the cost of all power and machinery and 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 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.

81. CONCRETE CLASSIFICATION.- Concrete will be classified for payment as follows:

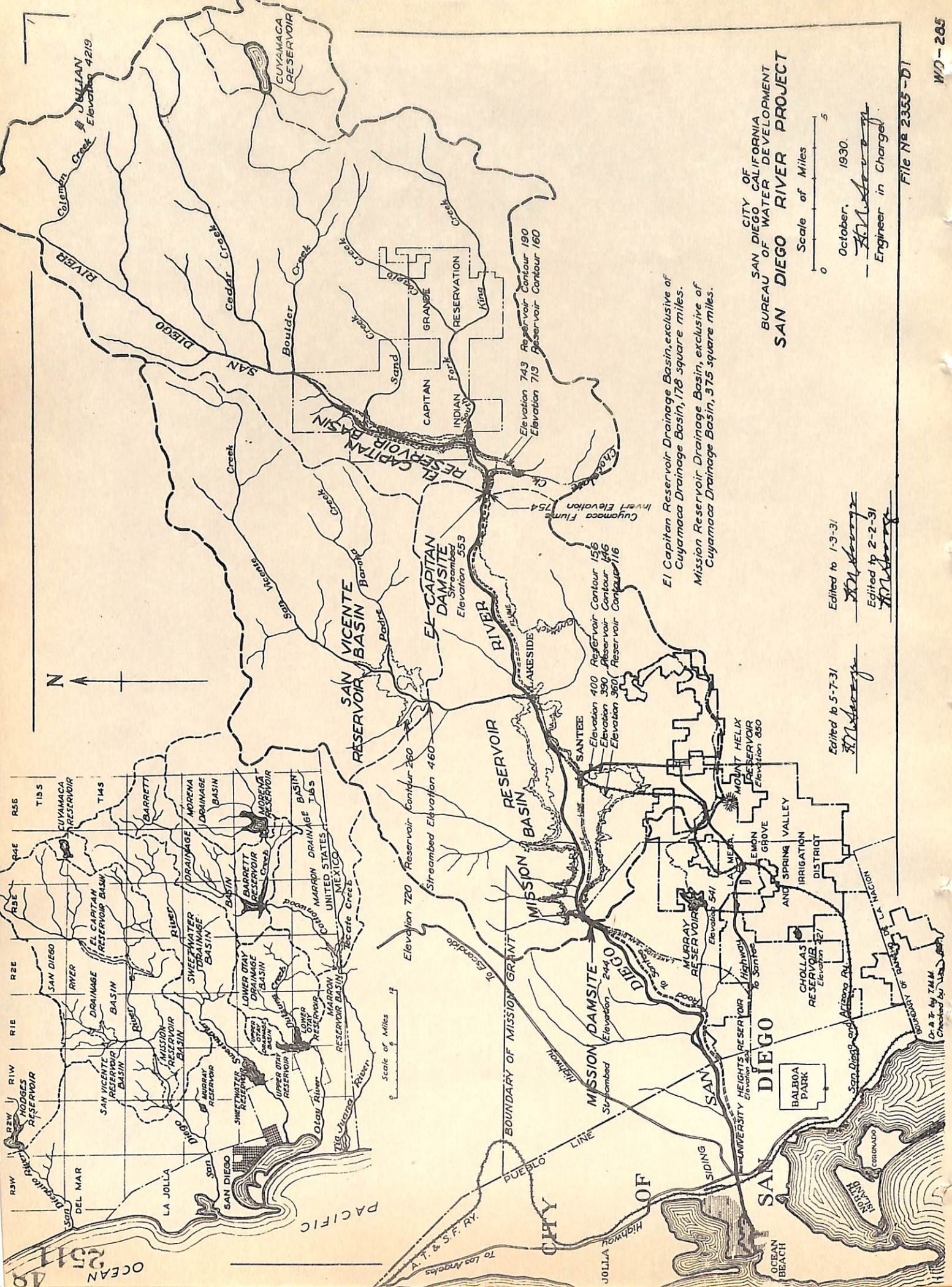
Class 1. Concrete in cutoff walls.

Class 2. Concrete in floor lining.

Class 3. Concrete in side wall lining.

82. DRAIN TILE.- Where shown on the drawings or where directed by the engineer, drain tile of unglazed burnt clay or concrete of a quality approved by the engineer shall be laid under or within the structure. The drain tile and pipe shall be laid with open joints, in trenches, which, if in rock, shall have the least practicable dimensions. All space in the trenches

not occupied by the tile or pipe shall be filled with gravel or crushed rock. Previous to placing the concrete in structures the trenches shall be covered with building paper in such a way as to prevent the infiltration of mortar into the gravel filling. Gravel or crushed rock used for filling the trenches shall be of such sizes as will pass through a one and one-half inch ring and will be retained on a one-fourth inch ring. Outlet drains shall be constructed where shown on the drawings or where directed by the engineer. During the time of placing concrete over the trenches a stream of water shall be run through the drain tile to remove any cement grout finding its way into the drain and to test the continuity and operation of the drain. The unit price bid for drain tile shall include the cost of excavating trench for tile drains, and furnishing complete in place the tile, crushed rock or gravel and building paper, the necessary supports for preserving the alignment, and the water and necessary connections for pumping, flushing and testing the drains, and all other necessary labor and materials.



CITY OF
SAN DIEGO CALIFORNIA
BUREAU OF WATER DEVELOPMENT
SAN DIEGO RIVER PROJECT

Scale of Miles
0 5

October, 1930.

Engineer in Charge

File No 2355-D1

WD-265

El Capitan Reservoir Drainage Basin, exclusive of
Cuyamaca Drainage Basin, 178 square miles.
Mission Reservoir Drainage Basin, exclusive of
Cuyamaca Drainage Basin, 375 square miles.

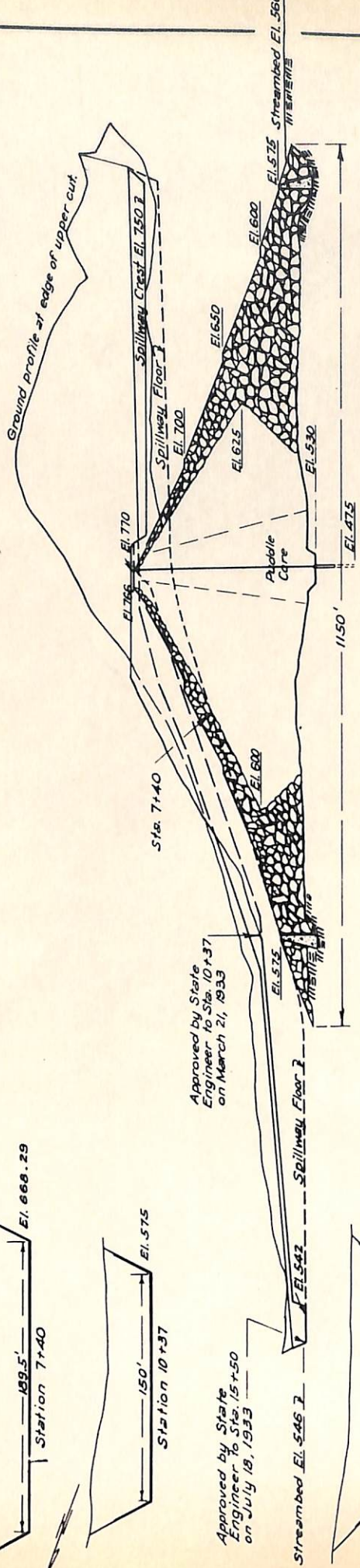
Edited to 1-3-31
J.N. [Signature]

Edited to 2-2-31
J.N. [Signature]

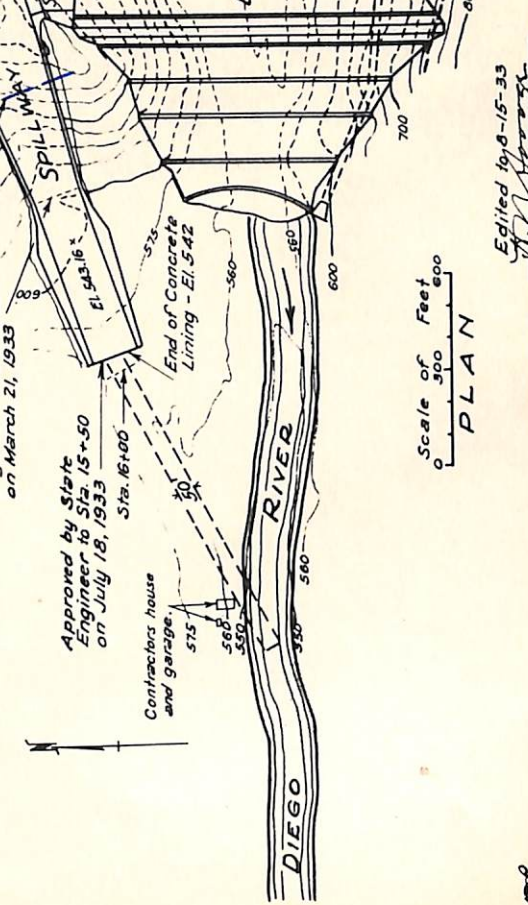
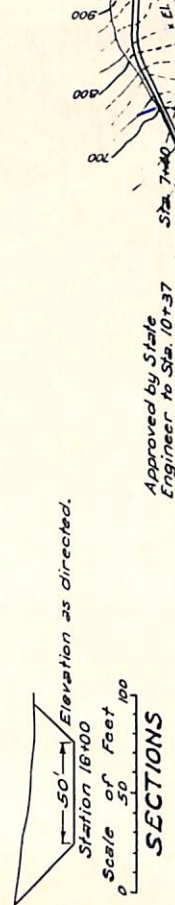
Edited to 5-7-31
J.N. [Signature]

Checked by T.H.M.
Checked by [Signature]

49
2512



SECTION



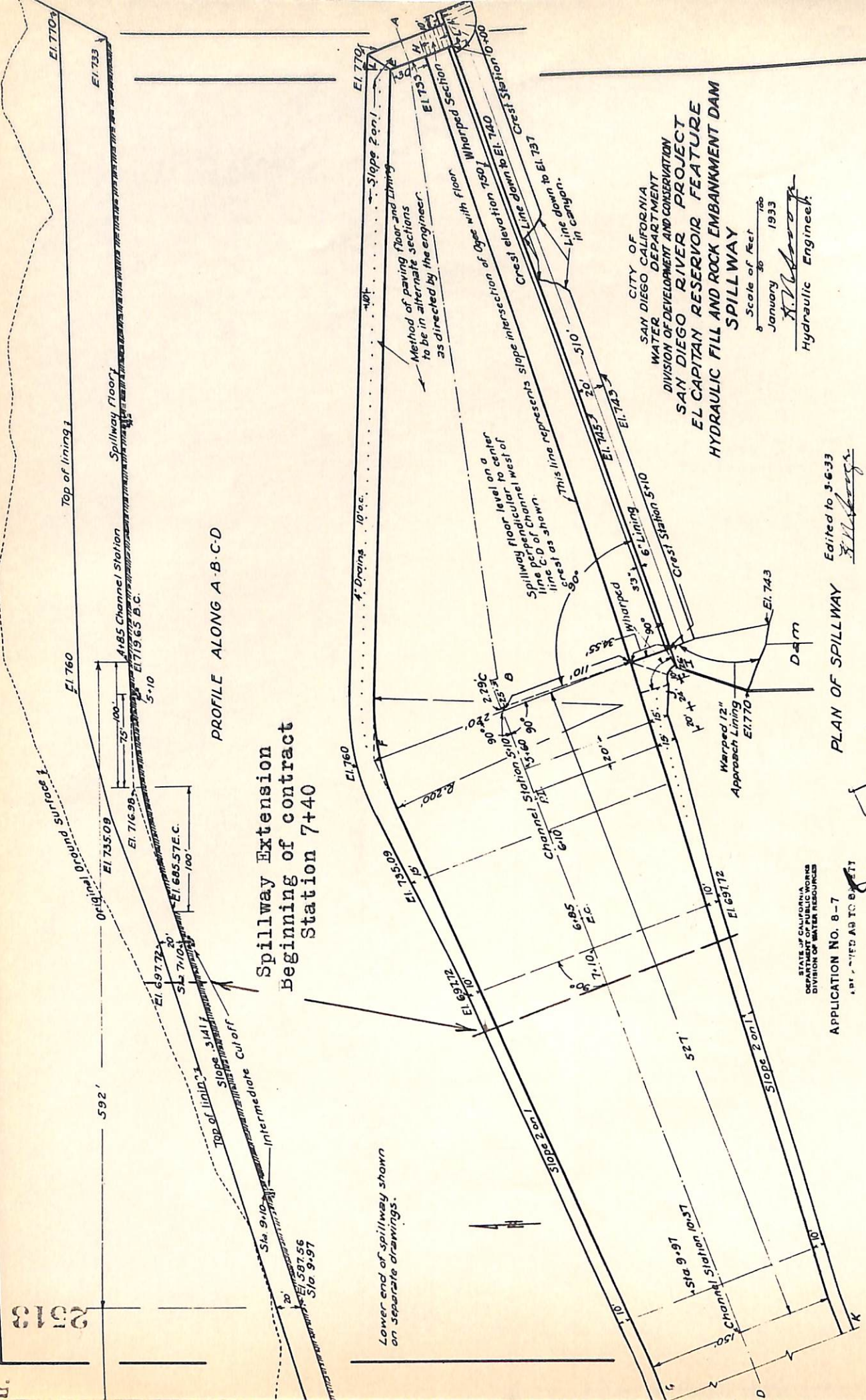
Spillway Extension
Contract from Spillway
Station 7+40 to River Channel

CITY OF
SAN DIEGO CALIFORNIA
DEPARTMENT
OF DEVELOPMENT AND CONSERVATION
SAN DIEGO RIVER PROJECT
EL CAPITAN RESERVOIR FEATURE
HYDRAULIC FILL AND ROCK EMBANKMENT DAM
PLAN AND SECTION

Scales as Shown
June 1933

Hydraulic Engineer.

102
103



PROFILE ALONG A-B-C-D

Spillway Extension
beginning of contract
Station 7+40

Lower end of spillway shown
on separate drawings.

CITY OF CALIFORNIA
 WATER DEPARTMENT
 DIVISION OF DEVELOPMENT AND CONSERVATION
 SAN DIEGO RIVER PROJECT
 EL CAPITAN RESERVOIR FEATURE
 HYDRAULIC FILL AND ROCK EMBANKMENT DAM
 SPILLWAY

Scale of Feet
 8" = 100'
 January 30 1933
H. V. ...
 Hydraulic Engineer

STATE OF CALIFORNIA
 DIVISION OF WATER RESOURCES
 APPLICATION NO. 8-7
 AS PERMITTED AS TO EXHIBIT

PLAN OF SPILLWAY Edited to 3-6-33
H. V. ...

H. V. ...
 STATE ENGINEER

3-21-33

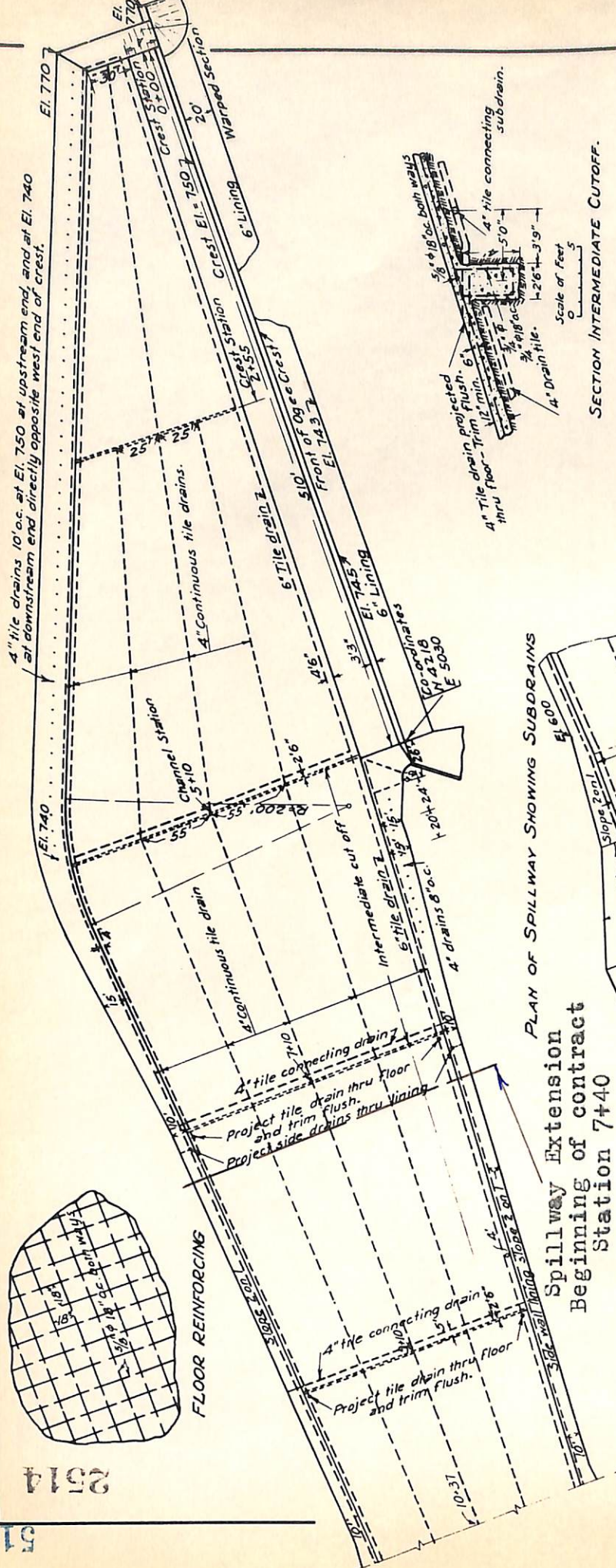
Dr. T. by P.B.
 Checked by *H. V. ...*

Sheet 2 of 7

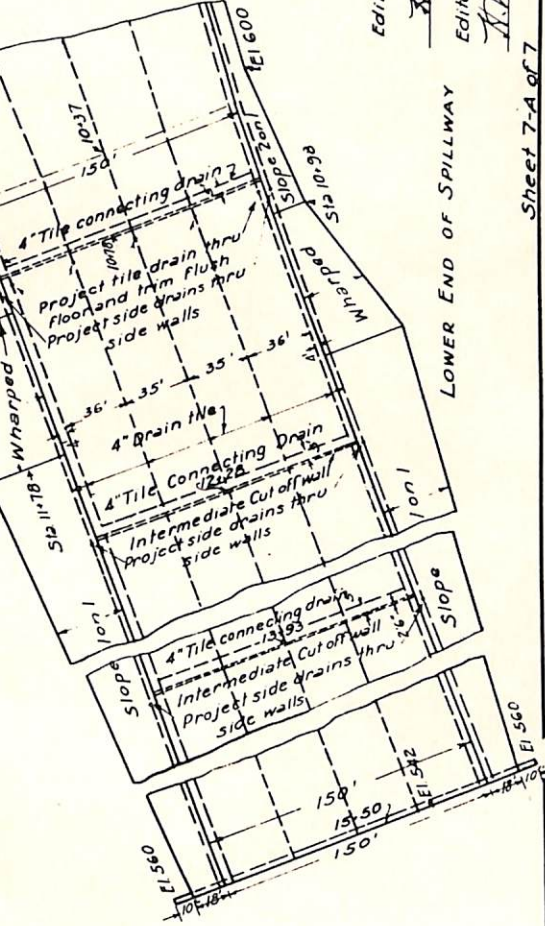
W.D. 449

FILE NO 2588.02

2514



PLAN OF SPILLWAY SHOWING SUBDRAINS
Spillway Extension
Beginning of contract
Station 7+40



Drawn by P.B.
Traced by N.C.
Checked by H.C.

Sheet 7-A of 7

Edited to 6-15-33
Edited to 4-4-33

CITY OF SAN DIEGO
SAN DIEGO CALIFORNIA
WATER DEPARTMENT
DIVISION OF DEVELOPMENT AND CONSERVATION
SAN DIEGO RIVER PROJECT
EL CAPITAN RESERVOIR FEATURE
HYDRAULIC FILL AND ROCK EMBANKMENT DAM
SPILLWAY
Scale of feet
March 6 1933
Hydraulic Engineer.

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

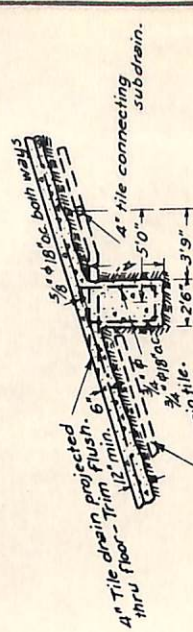
APPLICATION NO. 8-7
APPROVED AS TO SAFETY

July 18 1933

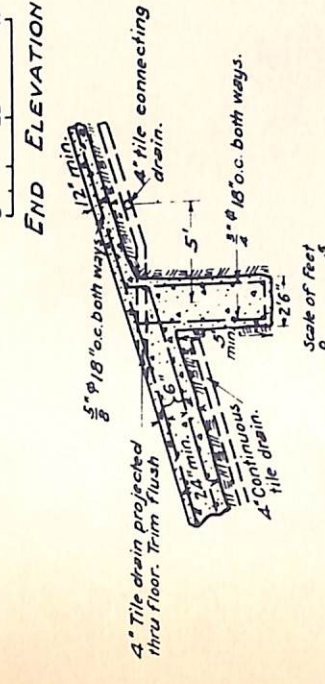
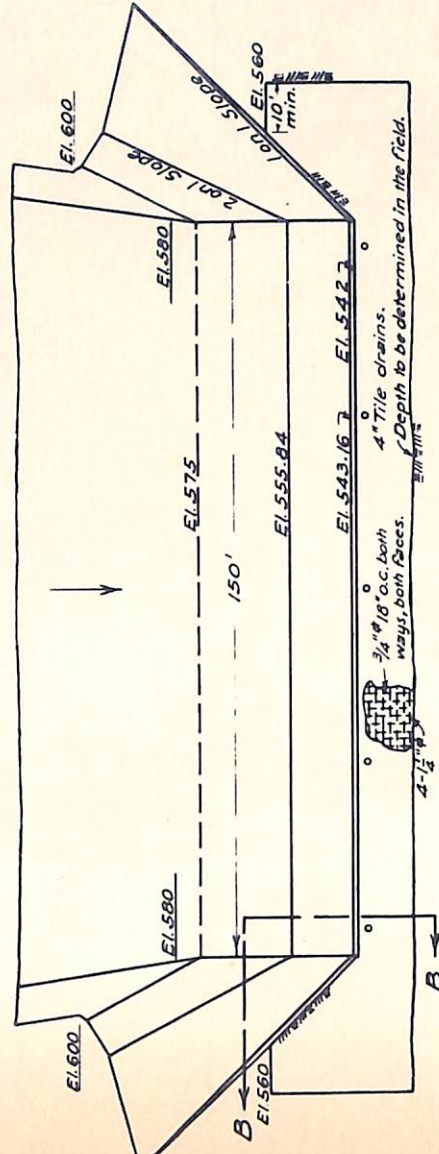
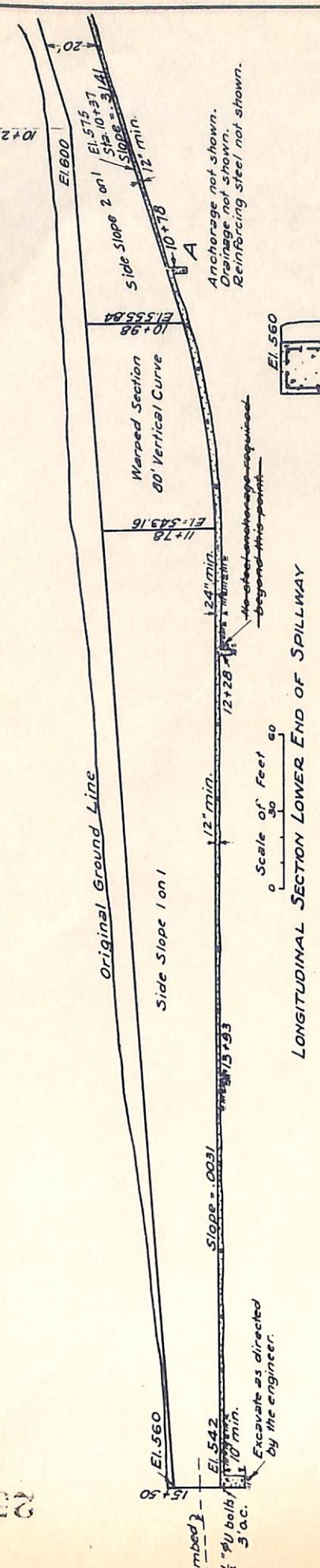
STATE OF CALIFORNIA
FILE NO 2588, D2

Scale of Feet
0 5

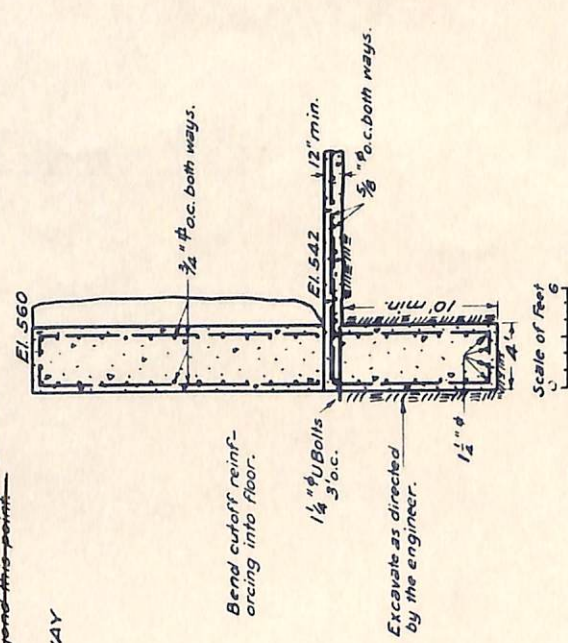
SECTION INTERMEDIATE CUTOFF.



52
2015



Dr. & Tr. by M.C.
Checked by P.B.



SECTION B-B

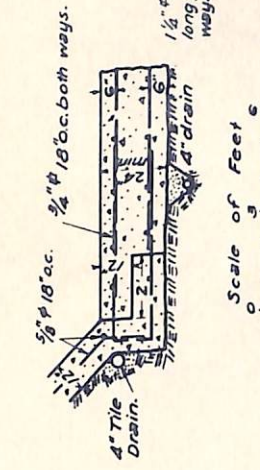
CITY OF
SAN DIEGO CALIFORNIA
WATER DEPARTMENT
DIVISION OF DEVELOPMENT AND CONSERVATION
SAN DIEGO RIVER PROJECT
EL CAPITAN RESERVOIR FEATURE
HYDRAULIC FILL AND ROCK EMBANKMENT DAM
SPILLWAY
Scales as Shown
June 1933
Hydraulic Engineer.

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

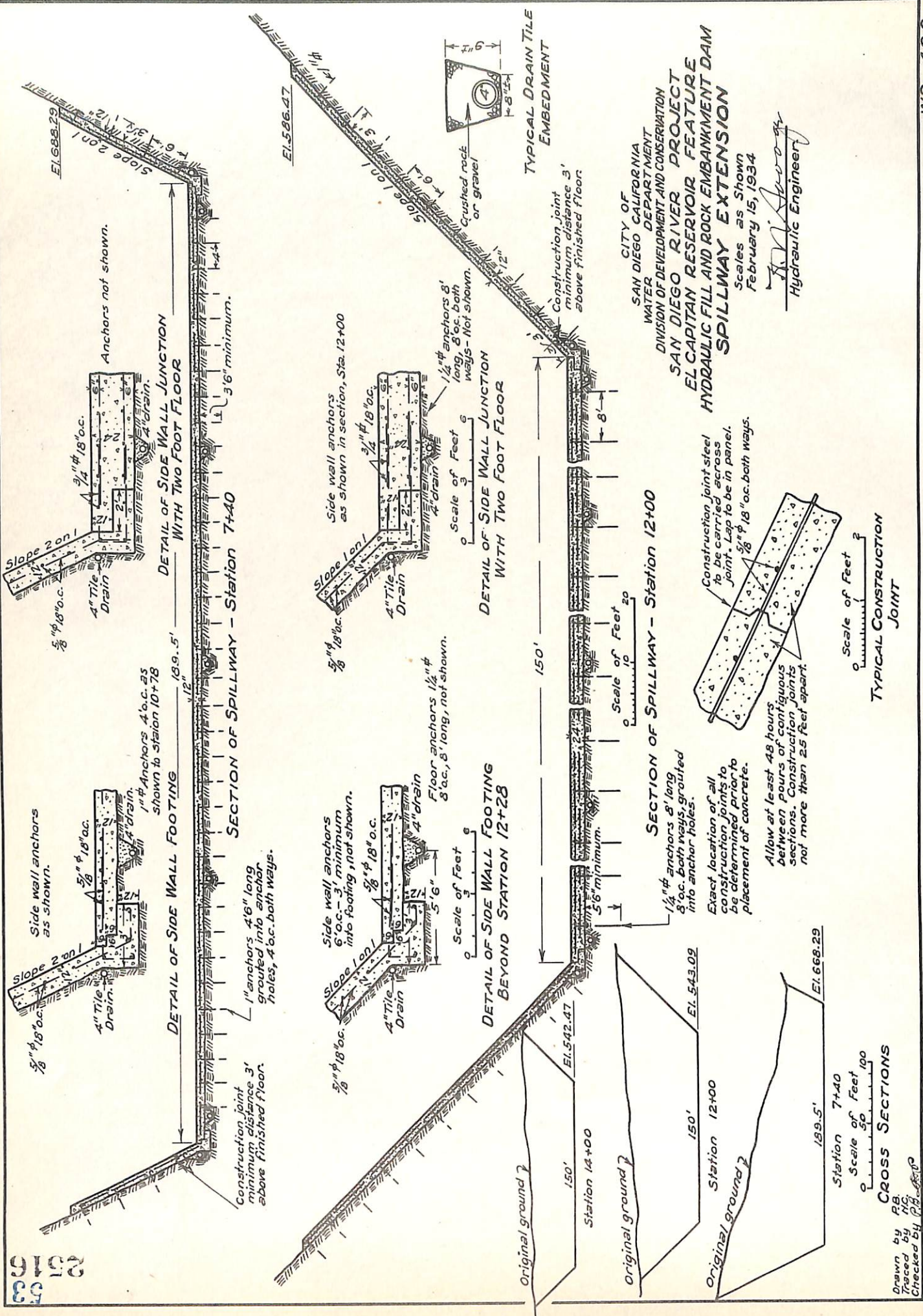
APPLICATION NO. 8-7
APPROVED AS TO SAFETY

JULY 18 1933

DETAIL OF SIDE WALL JUNCTION
WITH TWO FOOT FLOOR



WD-460
FILE NO 2-597, D 2



CITY OF
 SAN DIEGO CALIFORNIA
 WATER DEPARTMENT
 DIVISION OF DEVELOPMENT AND CONSERVATION
SAN DIEGO RIVER PROJECT
EL CAPITAN RESERVOIR FEATURE
SPILLWAY EXTENSION
 Scales as Shown
 February 15, 1934

[Signature]
 Hydraulic Engineer

Station 7+40
 Scale of Feet 100
CROSS SECTIONS
 Drawn by RB
 Traced by MC
 Checked by [Signature]

Scale of Feet 20
TYPICAL CONSTRUCTION JOINT

Construction joint minimum distance 3' above finished floor.

Side wall anchors as shown in section, Sta. 12+00
 1/2" anchors 8' long, 8" oc. both ways - Not shown.
 Scale of Feet 6

DETAIL OF SIDE WALL JUNCTION WITH TWO FOOT FLOOR

DETAIL OF SIDE WALL FOOTING BEYOND STATION 12+28

SECTION OF SPILLWAY - Station 12+00

DETAIL OF SIDE WALL JUNCTION WITH TWO FOOT FLOOR

SECTION OF SPILLWAY - Station 7+40

BODENHAMER CONSTRUCTION COMPANY
Oakland, California

September 22, 1934

City of San Diego,
San Diego, California.

Attention Mr. Fred D. Pyle, Hydraulic Engineer

Gentlemen: RE: EL CAPITAN RESERVOIR DAM SPILLWAY EXTENSION,
per plans and specifications filed in the
office of the City Clerk of The City of San
Diego on the 19th day of March, 1934, marked
Document Nos. 287317, 287568; contract dated
April 23, 1934.

It will be impossible for us to finish the contract designated
above within the time limit contained in same, namely, September
30, 1934.

The reason for this is due to the fact that on account of the
contract between the City of San Diego and Messrs. Rohl and
Connolly we were prevented from moving a portion of the dirt
between Station 7+40 and 8+40, that section being used as a road
to permit the said contractors to reach certain parts of the dam.

The delay, occasioned as described above, has been in excess of
thirty (30) days, and with this exception our work on this con-
tract has and is progressing satisfactorily.

Therefore, it is necessary that we ask for an extension of time,
and we hereby respectfully request that we be granted an exten-
sion of time until October 31, 1934.

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.

Thanking you in advance for your consideration, we are

Very truly yours,

BODENHAMER CONSTRUCTION COMPANY

By: A R Bodenhamer (signature)
Superintendent

MASSACHUSETTS BONDING AND INSURANCE COMPANY

234-5-6-7 Spreckels Theatre Building

San Diego, Cal.

September 22, 1934

City of San Diego,
San Diego, California.

Attention Mr. Fred D. Pyle, Hydraulic Engineer.

Gentlemen: RE: EL CAPITAN RESERVOIR DAM SPILLWAY EXTENSION
per plans and specifications filed in the
office of the City Clerk of The City of
San Diego on the 19th day of March, 1934,
marked Document Nos. 287317, 287568; con-
tract dated April 23, 1934, between the
City of San Diego and the Bodenhamer
Construction Company.

Please be advised that we hereby consent to an extension of
time under the above described contract to October 31, 1934,
as requested in the application of the Bodenhamer Construction
Company hereto attached.

Yours very truly,

MASSACHUSETTS BONDING AND
INSURANCE COMPANY,

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

(SEAL)

STATE OF CALIFORNIA }
County of San Diego } ss.

On this 22nd day of September A.D. 1934 before me Helen C. Wallace, a Notary Public in and for the County of San Diego Personally appeared Donald B. Goldsmith, Attorney-in-fact of the Massachusetts Bonding and Insurance Company, to me personally known to be the individual and officer described in and who executed the within instrument, and he acknowledged the same, and being by me duly sworn, deposes and says that he is the said officer of the Company aforesaid, and the seal affixed to the within instrument is the corporate seal of said Company, and that the said corporate seal and his signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said corporation.

(S E A L)

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

Helen C. Wallace (Signature)

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

My commission expires March 12, 1938

September 28, 1934

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

Subject: San Diego River Project, El Capitan Feature,
Spillway Extension, Application of Bodenhamer
Construction Company for extension of time.

Gentlemen:

Enclosed herewith for your consideration is application of Bodenhamer Construction Company, dated September 22, 1934, accompanied by formal consent of the sureties, applying for an extension of time from September 30, 1934 to October 31, 1934 in which to complete their contract work on the El Capitan Reservoir Dam Spillway Extension.

The contract between the City of San Diego and Bodenhamer Construction Company provides in part as follows:

"Because of the contract between the City of San Diego and H. W. Rohl and T. E. Connolly for the construction of the El Capitan Reservoir Dam, Spillway and Outlet Works, no work is to be done between Station 7/40 and Station 8/40 until written authorization is given by the engineer."

Contractor H. W. Rohl and T. E. Connolly did not complete the use of, and the removal of a road ramp across and adjoining the southeast corner of the work of the Bodenhamer Construction Company until September 12, 1934. On this account the latter was delayed in removing a portion of the excavation between Station 7/40 and 8/40, and this will have the effect of delaying the time of completion of their work.

The application of Bodenhamer Construction Company for an extension of time in which to complete their contract work on the El Capitan Reservoir Dam Spillway Extension to October 31, 1934 is hereby approved, and it is recommended that the extension of time be granted.

Respectfully,

G. H. BUSH
City Manager

FRANK D. FYLE
Hydraulic Engineer

September 29, 1934

Bodenhamer Construction Company
354 Hobart Street
Oakland, California

B-13

Subject: San Diego River Project, El
Capitan Feature, Spillway Extension
Extension of Time

Gentlemen:

Receipt is acknowledged of your letter dated September 22, 1934 requesting an extension of time for the completion of your contract for the construction of the El Capitan Reservoir Dam Spillway Extension from September 30, 1934 to October 31, 1934.

Enclosed is copy of Resolution No. 62123 adopted by the Council of the City of San Diego on September 28, 1934 granting your request for extension of time.

Very truly yours,

Fred D. Pyle
Hydraulic Engineer

FDP/t
Encls. Res. 62123

cc Bodenhamer Construction Company
Lakeside, California

10/23/34
copy /f

2523
COPY

MASSACHUSETTS BONDING AND INSURANCE COMPANY

San Diego, Cal.

October 22, 1934

City of San Diego,
San Diego, California.

Attention Mr. Fred D. Fyle, Hydraulic Engineer.

Gentlemen: RE: EL CAPITAN RESERVOIR DAM SPILLWAY EXTENSION,
per plans and specifications filed in the office
of the City Clerk of The City of San Diego on the
19th day of March, 1934, marked Document Nos.
887317, 887568; contract dated April 25, 1934,
between the City of San Diego and the Bodenhamer
Construction Company.

Please be advised that we hereby consent to an extension of time
under the above described contract to November 30th, 1934, as
requested in the application of the Bodenhamer Construction Company
hereto attached.

Yours very truly,

MASSACHUSETTS BONDING AND INSURANCE COMPANY,

BY: DONALD B. GOLDSMITH (Signature)
(Donald B. Goldsmith) Attorney-in-Fact

STATE OF CALIFORNIA, }
County of San Diego } SS.

On this 22nd day of October A.D. 1934 before me Helen C. Wallace,
a Notary Public in and for the County of San Diego personally appeared
Donald B. Goldsmith, Attorney-in-Fact of the
Massachusetts Bonding and Insurance Company, to me
personally known to be the individual and officer
(SEAL) described in and who executed the within instrument,
and he acknowledged the same, and being by me duly
sworn, deposes and says that he is the said officer
of the Company aforesaid, and the seal affixed to the
within instrument is the corporate seal of said Company
and that the said corporate seal and his signature as
such officer were duly affixed and subscribed to the
said instrument by the authority and direction of the
said corporation.

In witness whereof, I have hereunto set my hand and
affixed my official seal at my office in the City of
San Diego, County of San Diego, the day and year first
above written.

HELEN C. WALLACE (Signature)
Notary Public in and for the County of San Diego
State of California

My commission expires March 12, 1936

BODENHAMER CONSTRUCTION COMPANY
General Engineering Contractors
Oakland, California

October 22, 1934

City of San Diego,
San Diego, California.

Attention Mr. Fred D. Pyle, Hydraulic Engineer

Gentlemen: RE: EL CAPITAN RESERVOIR DAM SPILLWAY EXTENSION, per plans and specifications filed in the office of the City Clerk of The City of San Diego on the 19th day of March, 1934, Document Nos. 287517, 287568; contract dated April 23, 1934.

We find that the delay caused by our being prevented from moving a portion of the dirt between Stations 7+40 and 8+40, as stated in our application for extension of time dated September 22nd, 1934 was in excess of sixty (60) days and that the thirty (30) days extension granted at that time by the City of San Diego are insufficient to complete the contract; therefore it is necessary that we ask for a further extension, and respectfully request that we be granted until November 30th, 1934 to complete the above described contract.

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.

Thanking you in advance for your consideration, We are

Very truly yours,

BODENHAMER CONSTRUCTION COMPANY

BY: A. E. BODENHAMER (Signature)
Superintendent

October 29, 1934

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

Subject: San Diego River Project, El Capitan Feature,
Spillway Extension, Application of Bodenhamer
Construction Company for additional extension
of time.

Gentlemen:

Enclosed herewith for your consideration is application of Bodenhamer Construction Company, dated October 22, 1934, accompanied by formal consent of the sureties, applying for an additional extension of time from October 31 to November 30, 1934 in which to complete their contract work on the El Capitan Reservoir Dam Spillway Extension.

The contract between the City of San Diego and Bodenhamer Construction Company provides in part as follows:

"Because of the contract between the City of San Diego and H. W. Rohl and T. E. Connolly for the construction of the El Capitan Reservoir Dam, Spillway and Outlet Works, no work is to be done between Station 7+40 and Station 8+40 until written authorization is given by the engineer."

Contractor H. W. Rohl and T. E. Connolly did not complete their use of, and the removal of a road ramp across and adjoining the southeast corner of the work of the Bodenhamer Construction Company until September 12, 1934, which date was 142 days after the contract was signed and only 18 days before the contract date of completion.

On September 22, 1934 Bodenhamer Construction Company made an application for an extension of time to October 31, 1934, stating that they had been delayed in excess of thirty days, which extension of time was approved by the City Manager and the Hydraulic Engineer and granted by the Council by Resolution No. 62123 dated September 28, 1934.

Bodenhamer Construction Company in presenting the second application for extension of time claim that the delay caused by their being prevented from moving a portion of the material between Station 7+40 and Station 8+40 was in excess of sixty days.

To the Honorable, the Mayor
and Council

--2

10/29/34

Owing to the steep slopes, the location, amount and character of the material remaining between Station 7+40 and 8+40, Bodenhamer Construction Company have been unable thus far to complete its removal and will not be able to do so before about November 10, 1934, after which about fifteen days will be required to complete the floor and side lining.

Contractors H. W. Rohl and T. E. Connolly constructed a ramped roadway vicinity of Station 7+40 to 8+40 for use in hauling rock to the downstream side of the El Capitan Dam. However, from May 11 to July 11, 1934, inclusive, a period of sixty days, no use was made of the road and no progress was made in the construction of the rock embankment portion of the dam.

It appears that the Bodenhamer Construction Company were delayed at least sixty days by causes beyond their control in entering upon a portion of their work between Station 7+40 and Station 8+40. They have been granted an extension of time from September 30 to October 31, 1934, or thirty-one days, and

A further extension of twenty-nine days or until November 29, 1934 is hereby approved and it is recommended that such further extension of time be granted.

Very respectfully,

George L. Buck
City Manager

Fred D. Pyle
Hydraulic Engineer

FDP/f
cc City Manager
City Attorney

November 1, 1934

Bodenhamer Construction Company
354 Hobart Street
Oakland, California

B-15

Subject: San Diego River Project, El Capitan
Feature, Spillway Extension.
Additional Extension of Time.

Gentlemen:

Receipt is acknowledged of your letter dated October 22, 1934 requesting an additional extension of time for the completion of your contract for the construction of the El Capitan Reservoir Dam Spillway Extension from October 31 to November 1, 1934.

Enclosed is copy of Resolution No. 62255 adopted by the Council of the City of San Diego October 30, 1934, and based on Document No. 290029, being a letter to the Council from City Manager George L. Buck and Hydraulic Engineer Fred D. Pyle dated October 29, 1934, recommending that an additional extension of time to November 29, 1934, in which to complete the contract work on El Capitan Reservoir Dam Spillway Extension, be granted Bodenhamer Construction Company.

Very truly yours,

Fred D. Pyle
Hydraulic Engineer

FDP/f
Encl. Res. 62255
cc Bodenhamer Construction Company
Lakeside, California
City's Resident Engineer

December 3, 1934

Bodenhamer Construction Company
543 Hobart Street
Oakland, California

B-16

Subject: San Diego River Project, El Capitan
Reservoir Dam Spillway Extension
Completion of work

Gentlemen:

Final inspection of the work performed by you in connection with the erection, construction and completion of the El Capitan reservoir dam spillway extension, pursuant to the provisions of that certain contract entered into between The City of San Diego and yourselves, dated April 23, 1934, has been made.

Subject to the provisions of Paragraph 31 of the Contract Specifications and the performance of the clean-up work required thereunder, you are hereby advised that all of the work to be performed by you in the erection, construction and completion of the El Capitan reservoir dam spillway extension has been completed to the satisfaction of the Engineer.

Very truly yours,

Fred D. Pyle
Hydraulic Engineer

FDP/f
cc Bodenhamer Construction Co. Lakeside, California
Resident Engineer

December 3, 1934

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

Subject: San Diego River Project, El Capitan Reservoir
Dam Spillway Extension, Completion of work under
contract by Bodenhamer Construction Company

Gentlemen:

The work under contract with Bodenhamer Construction Company of the El Capitan Reservoir Dam Spillway Extension, Contract Document No. 287765 dated April 23, 1934 has, except for date of completion, been fully completed in compliance with the plans, drawings and specifications therefor and to the satisfaction of the Engineer.

Under the terms of the contract the work was to have been completed on or before September 30, 1934.

The date for completion of the work, after consideration of an application by the Contractor, was extended by Resolution No. 62123 of the Council from September 30, 1934 to October 31, 1934.

The date for completion of the work, under consideration of an application by the Contractor, was further extended by Resolution No. 62255 of the Council from October 31, 1934 to November 29, 1934.

The work was completed on December 1, 1934.

RECOMMENDATION: It is recommended that the materials furnished and work performed in the erection, construction and completion of the El Capitan Reservoir Dam Spillway Extension by Bodenhamer Construction Company be officially accepted and paid for by the City of San Diego, subject to the provisions of Paragraph 49 of the contract specifications.

Respectfully,

Fred D. Pyle
Hydraulic Engineer

FDP/f

APPROVED:

George L. Buck
City Manager

1/12/35
copy/f

2530
COPY

January 12, 1935

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

Subject: San Diego River Project, El Capitan Feature,
Bodenhamer Construction Company Contract,
Acceptance of final estimate and delivery
of release.

Gentlemen:

Contractor Bodenhamer Construction Company completed the contract work on the El Capitan Reservoir Dam Spillway Extension December 1, 1934, and the work was officially accepted by the Council by Resolution No. 62381 adopted December 4, 1934 and filed for record with County Recorder December 6, 1934.

The final estimate as prepared and checked by the Hydraulic Engineer has been accepted by Bodenhamer Construction Company and a release of all claims against the City of San Diego under and by virtue of the contract has been executed by the Contractor and delivered to the City.

Very respectfully,

Fred D. Fyle
Hydraulic Engineer.

FDF/f

RELEASE OF CLAIMS

WHEREAS, heretofore, on, to-wit, the 23rd day of April, 1934, the undersigned 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 the defendant a certain public work commonly known and referred to as the El Capitan Reservoir Dam Spillway Extension. That a true copy of said contract is on file in the office of the City Clerk of said City of San Diego, marked Document No. 287765; 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 of San Diego by its Council, such acceptance being evidenced by resolution of said Council, dated December 4, 1934, numbered 62381; and

WHEREAS, under the terms of said contract (Document No. 287765), and particularly under the provisions of Specification No. 49 thereof, it is provided, among other things, that following the acceptance of said work by The City of San Diego and the completion thereof to the satisfaction of the Hydraulic Engineer of said City and the filing of a release by the Contractor of all claims against The City of San Diego under or by virtue of said contract, and the expiration of time within which liens may be filed, final payment shall be made to said Contractor of all moneys due said Contractor, including the percentage withheld, or such portion thereof as may be due the Contractor, all as provided in said contract, and in particular Section 49 thereof;

NOW, THEREFORE, in consideration of the payments heretofore made to said Contractor, and further in consideration of payment to said Contractor at the date hereof of the sum of Forty-nine thousand five hundred nine and 17/100 dollars (\$49,509.17), acknowledged by said Contractor to be the total amount due under the terms of said contract, and in further consideration of the acceptance of said work and the payment thereof as hereinbefore specified, the undersigned F. M. BODENHAMER, an individual, doing business as BODENHAMER CONSTRUCTION CO., Contractor under said contract (Document No. 287765), hereby releases 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 expressed or implied, of that certain contract dated April 23 1934, between The City of San Diego, California, a municipal corporation, and F. M. Bodenhamer, an individual, doing business as Bodenhamer Construction Co., for the construction, erection, completion and installation of the El Capitan Reservoir Dam Spillway Extension, copy of which is on file in the office of the City Clerk of said City, marked Document No. 287765.

Dated at San Diego, California, this 12 day of January 1935.

F. M. BODENHAMER, an individual, doing
business as BODENHAMER CONSTRUCTION CO.
By F. M. BODENHAMER

STATE OF CALIFORNIA, }
County of San Diego. } ss.

On this 12th day of January, A. D. Nineteen hundred and thirty-five, before me, JAMES J. BRECKENRIDGE, a Notary Public in and for said County, residing therein, duly commissioned and sworn, personally appeared F. M. BODENHAMER, known to me to be the person described in and whose name is subscribed to the within instrument, and acknowledged to me that he executed the same.

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

JAMES J. BRECKENRIDGE
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 12 day of January, 1935.

C. L. BYERS
City Attorney.

By GILMORE TILLMAN
Assistant City Attorney

T. B. COSGROVE
Special Counsel

I HEREBY CERTIFY that the above and foregoing is a full, true and correct copy of Document No. 290983, filed January, 14, 1935 in the office of the City Clerk of City of San Diego, being release of claims of Bodenhamer Construction Company on account of El Capitan Reservoir Dam Spillway Extension.

ALLEN H. WRIGHT, City Clerk
of City of San Diego, California.

By CLARK M. FOOTE, JR. Deputy

(SEAL)

ORDINANCES and RESOLUTIONS

ORDINANCE NO. 435
(New Series)

AN ORDINANCE APPROPRIATING THE SUM OF \$217,470.00 FROM THE EL CAPITAN DAM BOND FUND OF THE CITY OF SAN DIEGO, FOR THE PURPOSE ONLY AND EXCLUSIVELY OF PROVIDING FUNDS FOR PAYMENT FROM TIME TO TIME TO BODENHAMER CONSTRUCTION COMPANY OF AMOUNTS ACCRUING AND PAYABLE TO IT UNDER ITS CONTRACT WITH THE CITY OF SAN DIEGO FOR THE CONSTRUCTION OF THE EL CAPITAN SPILLWAY EXTENSION.

WHEREAS, there are now in the City Treasurer of The City of San Diego certain funds held in the El Capitan Dam Bond Fund, applicable exclusively to the purpose of constructing a dam at the City's El Capitan Dam and Reservoir Site, which said funds were authorized to be expended exclusively for said purpose by the electors of the city at an election held on the 18th day of November, 1924, and at an election held on the 15th day of December, 1931; and

WHEREAS, the Council has heretofore, to-wit, on the 23rd day of April, 1934, awarded to Bodenhamer Construction Company, at the lowest responsible and reliable bidder a contract for the construction of the El Capitan Spillway Extension; and

WHEREAS, it is at this time desirable and convenient to allocate to certain appropriate accounts in the office of the Auditor and Comptroller of the City, for the purpose hereinbefore mentioned, definite proportions of the moneys in said El Capitan Dam Bond fund, which said moneys have been heretofore and now are authorized to be used and expended for the said El Capitan Dam and Reservoir Project; NOW, THEREFORE,

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

Section 1. That the sum of two hundred seventeen thousand, four hundred seventy dollars (\$217,400.00), or so much thereof as may be necessary, be, and the same is hereby set aside and appropriated out of the El Capitan Dam Bond Fund, for the purpose only and exclusively of payment from time to time to Bodenhamer Construction Company of amounts accruing and payable to said company under its contract with the City for the construction of the El Capitan Spillway Extension.

Presented by _____

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

By _____
Deputy City Attorney.

I HEREBY CERTIFY that the above and foregoing is a full, true and correct copy of Ordinance No. 435, of the ordinances

of the City of San Diego, California, as adopted by the Council
of said City April 30, 1934.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOTE, JR.
Deputy

RESOLUTION NO. 61448

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

That the City Attorney is hereby authorized and directed to prepare a resolution including wage scale for ²¹ Capitan Spillway Extension on a 40 hour week basis.

I HEREBY CERTIFY the above to be a full, true, and correct copy of Resolution No. 61448 of the Council of the City of San Diego, as adopted by the said Council March 8, 1934.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOTE, JR.
Deputy

RESOLUTION NO. 61459

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

That a hearing is hereby set for March 14th, 1934, at 10:00 A.M., on the El Capitan Spillway Extension Wage scale. Mr. J. H. Chambers, Steel Contractor, and Hartung Company, General Contractors, are hereby requested to be present, and show what is being paid by them for iron workers.

I HEREBY CERTIFY the above to be a full, true, and correct copy of Resolution No. 61459 of the Council of the City of San Diego, as adopted by the said Council March 12, 1934.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOTE, JR.
Deputy

RESOLUTION NO. 61476

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 ten o'clock A. M.
of the 9th day of April, 1934, for the construction of El Capitan
Reservoir Dam Spillway Extension, involving about 199,000 cubic
yards of excavation and about 9,900 cubic yards of concrete,
about 13,500 barrels of cement, about 520,000 pounds of reinforcing
steel, and about 7200 linear feet of four-inch and six-inch drain
tile; all as more particularly and in detail set forth in those
certain drawings and specifications contained in Document No.
287317, on file in the office of the City Clerk of said City.

BE IT FURTHER RESOLVED, that pursuant to the provisions of
the Charter of The City of San Diego, the Council has determined
and does hereby declare that the prevailing or current rate of
per diem wages paid by private employers in The City of San Diego
for each craft or type of workmen or mechanic needed to execute
said work is as follows:

<u>Craft or Type</u>	<u>Per Diem Wage</u>
Auto Mechanics	\$6.40
Blacksmiths	6.40
Blacksmith Helpers	5.00
Carpenter Foremen	9.00
Carpenters	8.00
Carpenter Apprentice.	5.00
Cement Finishers	7.00
Clerks	5.00
Compressor Operators	6.00
Concrete Finishers	7.00
Concrete Finishers Helpers	5.00
Concrete Foremen	6.00
Concrete Form Builders	8.00
Concrete Spreaders	5.50
Concrete Tampers	5.00
Concrete Mixermen	8.00
Cooks	5.50
Crane Operators	7.00
Dragline Operators	7.00
Dragline Operator Helpers	5.00
Drillers	5.50
Drill Sharpeners	6.00
Electricians	8.00
Electrician Helpers	6.50
Excavation Foremen	6.00
Flunkys	5.00
General Foremen	9.00
Hoist Operators	6.00
Laborers, common	5.00

<u>Craft or Type</u>	<u>Per Diem Wage</u>
Materialmen	\$5.00
Mechanics	6.40
Mechanics Helpers	5.00
Mechanic Trouble Shooters	6.00
Powdermen	6.00
Powdermen Helpers	5.00
Pump Men	5.00
Reinforcing Steel Workers	8.00
Reinforcing Steel Foremen	9.00
Shovel Operators	9.00
Shovel Cranesmen	9.00
Shovel Oilers	6.00
Shovel Pitmen	5.00
Superintendents	9.00
Teamsters	5.00
Tractor Operators over 50 HP	7.20
Tractor Operators under 50 HP	6.80
Timekeepers	5.00
Truck Drivers under 15,500#	5.50
Truck Drivers between 15,500# and 25,000#	6.00
Truck Drivers over 25,000#	6.50
Watchmen	4.50
Other classes not less than	5.00

For overtime work, when the same is permitted by law, one and one-half times the foregoing rates.

For work performed on Sundays and legal holidays, as set forth in Section 10 of the Political Code of the State of California, one and one-half times the foregoing rates.

BE IT FURTHER RESOLVED that said advertisement for bids shall be published for at least ten (10) consecutive days in the official newspaper of said city prior to the time specified herein up to which sealed proposals shall be received; and such notice shall also be posted for the same length of time in a conspicuous place on or near the door of the Council Chamber in the City Hall, and also at or near the entrance of the City Hall, in said City; and that said advertisement shall specify the per diem rate of wages as fixed in this resolution.

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 Resolution No. 61476, as adopted by the Common Council of the city of San Diego on March 19, 1934.

ALLEN H. WRIGHT, City Clerk
By CLARK M. FOOTE, JR., Deputy

RESOLUTION NO. 61567

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

That the bid of F. M. Bodenhamer, an individual doing business as Bodenhamer Construction Company, as contained in Document No. 287568, on file in the office of the City Clerk of The City of San Diego for the construction of El Capitan reservoir, dam, spillway extension, being the lowest bid submitted for said work, be, and the same is hereby accepted; and that the contract for such work be, and the same is hereby awarded to said F. M. Bodenhamer.

BE IT FURTHER RESOLVED, 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 said F. M. Bodenhamer for the construction of said El Capitan reservoir, dam spillway extension, in accordance with said bid and at and for the prices specified therein, and upon the terms and conditions and specifications set forth in documents numbered 287568 and 287317, on file in the office of the City Clerk of said City.

Presented by _____

Approved as
to form by _____

I HEREBY CERTIFY the above to be a full, true and correct copy of Resolution No. 61567 of the Council of the City of San Diego, California, as adopted by said Council April 23, 1934.

ALLEN H. WRIGHT, City Clerk

By CLARK M. FOOTE, JR., Deputy

RESOLUTION NO. 61586

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

That the bids of the following contractors upon the
El Capitan Reservoir Dam Spillway Extension be, and they
are hereby rejected, to-wit:

Daley Corporation;

V. R. Dennis Construction Company; and

Eohl-Connolly Company;

and the City Clerk is hereby authorized to return to said
bidders the checks put up with their respective bids.

Presented by _____

Approved as
to form by _____

I HEREBY CERTIFY the above to be a full, true and correct
copy of Resolution No. 61586 of the Council of the City of San
Diego, California, as adopted by said Council April 23, 1934.

ALLEN H. WRIGHT, City Clerk

By CLARK M. FOOTE, JR., Deputy

RESOLUTION NO. 62076

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

That the Hydraulic Engineer is hereby requested to report if employees of the Bodenhamer Construction Company have all had at least one year's residence in the City of San Diego.

I HEREBY CERTIFY the above to be a full, true, and correct copy of Resolution No. 62076 of the Council of the City of San Diego, as adopted by the said Council September 11, 1934.

ALLEN H. WRIGHT, City Clerk

By CLARK M. FOOTE, JR., Deputy

RESOLUTION NO. 62123

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

That an extension of time, from September 30th, 1934 to October 31st, 1934, be and it is hereby granted to the Boesenhamer Construction Company, within which to complete their contract for constructing the El Capitan Spillway Extension; as recommended by the City Manager and by the Hydraulic Engineer under Document No. 289632.

I HEREBY CERTIFY the above to be a full, true, and correct copy of Resolution No 62123 of the Council of the City of San Diego, as adopted by the said Council September 28, 1934.

ALLEN H. WRIGHT, City Clerk

By CLARK M. FOSTER, JR., Deputy

RESOLUTION NO. 62255

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

That an extension of time, from October 31st, 1934 to and including November 29th, 1934, be and it is hereby granted to the Bodenhamer Construction Company, within which to complete their contract for constructing the El Capitan Spillway Extension; as recommended by the City Manager and the Hydraulic Engineer in Document No. 290029, dated October 29th, 1934.

I HEREBY CERTIFY the above to be a full, true, and correct copy of Resolution No. 62255 of the Council of the City of San Diego, as adopted by the said Council October 30, 1934.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOTE, JR.
Deputy

RESOLUTION NO. 62381

RESOLUTION ACCEPTING THE WORK PERFORMED UNDER
EL CAPITAN RESERVOIR DAM SPILLWAY EXTENSION
CONTRACT.

WHEREAS, it appears by communication from the City Hydraulic Engineer, dated December 3, 1934, on file with the City Clerk as Document No. 290469, that the work to be performed by Bodenhamer Construction Company under its contract for the construction of El Capitan Reservoir Dam Spillway Extension, which said contract is dated April 23, 1934 and is on file with the City Clerk as Document No. 287765, has been performed and completed in accordance with the plans, drawings and specifications therefor to the satisfaction of the City's Hydraulic Engineer, who, together with the City Manager, recommends the acceptance thereof by the City; NOW, THEREFORE,

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

That the materials furnished and the work performed in the erection, construction and completion of the El Capitan Reservoir Dam Spillway Extension by the Bodenhamer Construction Company, the contractor under said contract, be, and the same are accepted by The City of San Diego;

And that any and all moneys withheld from said contractor under the provisions of said contract shall be payable at the time, in the manner, upon the conditions, and subject to the provisions, all as set forth in paragraph numbered 43 and 49 of said contract specifications.

BE IT FURTHER RESOLVED, that the City Clerk be, and he is hereby instructed forthwith to file for record, or cause to be filed for record on behalf of The City of San Diego with the County Recorder of the County of San Diego a copy of said contract, together with a notice of completion and acceptance of said contract work.

I HEREBY CERTIFY the above to be a full, true and correct copy of Resolution No. 62381 of the Council of the City of San Diego, California, as adopted by said Council December 4, 1934.

ALLEN H. WRIGHT, City Clerk
By CLARK M. FOOTE, JR., Deputy

EXCAVATION

A G R E E M E N T

THIS AGREEMENT made and entered into at the City of San Diego, State of California, this 28th day of April, A.D., 1934, by and between FORREST M. BODENHAMER, doing business under the firm name and style of BODENHAMER CONSTRUCTION CO., of Oakland, California hereinafter called the "CONTRACTOR", and J. F. KNAPP, of Oakland, California, hereinafter called the "SUBCONTRACTOR,"

W I T N E S S E T H:

WHEREAS, the said contractor has heretofore on the 23rd day of April, A.D., 1934, entered into a contract with the City of San Diego, California, for the construction of El Capitan Reservoir Spillway Extension; and,

WHEREAS, the contractor is desirous of securing the services of the subcontractor for the purpose of furnishing labor and material to be performed and used in and about the construction of portion of said work provided for in said contract; and,

WHEREAS, the subcontractor is desirous of furnishing said labor and materials to be performed and used in and about the construction of said portion of said work hereinafter provided for,

NOW, THEREFORE,

The parties hereto covenant and agree each with the other as follows:

P L A N S A N D S P E C I F I C A T I O N S

It is expressly understood and agreed that the subcontractor has read each and every clause in this contract and in the contract, plans, specifications, maps, designs, profiles and other descriptive matter for the doing of the said work entered into by and between the contractor and the said City of San Diego, and that he had personally

examined the site and ground upon which the said work shall be done and performed, the physical conditions surrounding the same, and fully understands the meaning of all the terms of this contract, and of all the other documents herein referred to, and covenants and agrees that he will comply with all of the terms, covenants and agreements therein and herein set forth.

WORK TO BE DONE AND PRICES TO BE PAID

The subcontractor agrees, at his own proper cost and expense, to furnish all labor, material, provender, supplies and equipment necessary to complete in a good and workman-like manner and to the satisfaction of the Hydraulic Engineer of the Water Department, Division of Development and Conservation of the City of San Diego, California, and of the contractor for the completion of the following described work in accordance with the plans and specifications prepared by said Water Department, Division of Development and Conservation, and at the following prices, to-wit:

Item No.	WORK OR MATERIAL
1.	Excavation, Class 1, Station 7+40 to Station 10+37 50,000 cubic yards at Twenty-six and one-half cents (26-1/2¢) per cubic yard.
2.	Excavation, Class 1, Station 10+37 to Station 15+50 112,000 cubic yards at Twenty-six and one-half cents (26-1/2¢) per cubic yard.
3.	Excavation, Class 1 Station 15+50 to Station 25+00 36,000 cubic yards at Twenty-six and one-half cents (26-1/2¢) per cubic yard

The subcontractor agrees to receive and accept the above mentioned prices payable as hereinafter provided for full compensation for furnishing such labor, material, provender, supplies and equipment contemplated and embraced in this Agreement for the full

and faithful completion of the said work to be by him performed in the manner and according to the plans, specifications and requirements of the said Hydraulic Engineer, and until the acceptance of said work by the City of San Diego, California.

PAYMENTS

The contractor shall, for the work which has been fully completed and performed by the subcontractor on the days when the said contractor receives payments from the City of San Diego upon the said contract, pay to the subcontractor on the same days Seventy-five per cent (75%) of the compensation provided for herein for such work so completed and performed, the quantities to be determined by the Hydraulic Engineer's estimate furnished the contractor pursuant to the terms of the said contract entered into with the said City of San Diego, California, the balance of the compensation, to-wit, the remaining twenty-five per cent (25%) so due the said subcontractor shall be with-held by the contractor and paid as follows:

All of the said Twenty-five per cent (25%) save and excepting the sum of Two Thousand Dollars (\$2,000.00) shall be paid to the said subcontractor Thirty-five (35) days after the acceptance by the said Hydraulic Engineer of the work done and performed by the subcontractor, and for this purpose acceptance shall be deemed to be the approval by the said Hydraulic Engineer of the said work so done and performed, the said Two Thousand Dollars (\$2,000.00) so held by the contractor shall be paid to the subcontractor five days before the due date of the final payment made to said contractor by the said City of San Diego after the acceptance of the entire work provided for in the said contract with the said City of San Diego, provided that the contractor shall be entitled to withhold

an amount equivalent to the aggregate of all stop notices which may have been filed against the subcontractor, plus twenty-five per cent (25%) thereof, and provided further that the contractor shall be entitled to set off against all said sums and unpaid advances made to the subcontractor prior to the time that payment of said sums may be due to the subcontractor hereunder or any sums reasonably expended by the contractor in defending any legal proceeding brought against the subcontractor by any laborer having performed labor for the subcontractor upon said work, or any material man having furnished material or other lienable supplies used in connection with the said work.

TIME FOR PERFORMING WORK

The subcontractor shall commence said work as hereinabove provided within ten days from and after the signing of this contract, and shall complete the same on or before the 31st day of July, 1934.

RESPONSIBILITY FOR WORK

It is understood and agreed that the subcontractor assumes all risks and hazards of every nature, kind, description or character incident to or relating to the doing of the work herein agreed by him to be done and performed, and in the event the subcontractor in the doing and performing of said work shall injure any of the work in connection with the improvement hereinbefore described done and performed by the contractor, or any agent or subcontractor of said contractor, then and in such an event, the subcontractor shall pay such damage, and the contractor is authorized to deduct such damages from the payments hereinbefore mentioned, and the subcontractor agrees that he will so carry on his works as to cooperate with the contractor and other subcontractors so as not to unnecessarily

interfere with any of the other work to be done and performed under the terms of the said contract, and to this end, the subcontractor shall keep a superintendent or head foreman upon the job to receive orders from the contractor, and all loss occasioned to the contractor by reason of this subcontractor failing to so cooperate shall be paid by the subcontractor to the contractor.

ABANDONMENT OF WORK

The subcontractor further agrees that if the work to be done under this contract shall be abandoned, or if said work is not being done or progress made to the satisfaction of the Hydraulic Engineer, or if at any time the said work is unreasonably delayed, or if the said subcontractor violates, or is violating any of the conditions or agreements of this contract, or if the subcontractor shall fail to show such progress in the execution of said work as to give the contractor reasonable ground for anticipating that the said work would not be completed within the time limit prescribed herein, then and in that event, or in either or any of these events, the contractor shall have the right to notify the subcontractor to immediately discontinue the further prosecution of said work to be done and performed by him under this agreement; and, thereupon the subcontractor shall immediately discontinue the prosecution of said work, or any part thereof, as the contractor may designate, and the contractor may thereupon, by contract or otherwise, as he may determine, complete said work, or portion thereof, to be done and performed by the subcontractor, and charge the reasonable expense of completing the same, or any part thereof, to the subcontractor; and for such completion, the contractor, for himself, or any subcontractor by him employed to finish the said work, may take possession of and use,

or cause to be used, in the completion of said work, or any part thereof, any materials and/or equipment, in the possession of the subcontractor that may be found upon said work, or intended to be used therefor, when such work is ordered discontinued. All expenses charged under this paragraph shall be deducted out of money then due, or to become due the subcontractor, under the terms of this agreement. In the event the expenses of such completion shall exceed said sum or sums due, or to become due, the subcontractor and/or his bondsman, shall pay such excess to the contractor upon completion of the work, and upon written demand therefor.

The foregoing provision shall not be the exclusive remedy of the contractor for damages in the event the subcontractor does not complete his subcontract herein within the time provided for herein, and if the contractor so elects in writing, he may notify the subcontractor at any time provided for herein for the completion of the said work by the said subcontractor, that he will deduct One Hundred Dollars (\$100.00) per day for each and every day, including Sundays and holidays, that such work remains uncompleted after the date required for completion by said contractor, and the said amount is hereby agreed upon as liquidated damages as loss to the said contractor on account of expenses due to said delay in the completion of the balance of the work by the contractor under his contract with the said City of San Diego, and will be deducted from any money due the subcontractor under this contract, and the said subcontractor and his surety shall be liable for any such excess.

PAYMENT OF INSURANCE

The subcontractor agrees to provide himself with insurance covering all his workmen under the Workmens' Compensation Act of the State of California, and further to provide insurance against

liability for injury and/or damage to persons other than his employees in the respective amounts of Ten Thousand Dollars (\$10,000.00) for injury to any one person, and Twenty Thousand Dollars (\$20,000.00) for injury to any number of persons more than one, and to furnish to the contractor a certificate of the insurance carrier with whom said subcontractor is carrying a policy of insurance acknowledging full liability for said personal liability, and also covering all employees connected with the work specified in this subcontract, said certificate of the insurance carrier to bear the date of the expiration of said policy and that it will not be revoked without due notice to the contractor, who shall have the right in case of default by the subcontractor to provide any and/or all such insurances, and to deduct the amounts expended therefor from any sums or sum to become due to the said subcontractor.

SURETY BOND

The subcontractor agrees to furnish to the contractor a bond written by a surety company acceptable to the contractor, payable to the contractor in the amount of Fifty Thousand Dollars (\$50,000.00) conditioned that the said subcontractor will faithfully perform his contract and that he will pay for all labor, material, machinery, equipment, implements, provender and supplies used by him in and about the performance of said work, and this contract shall have no force and effect until the said bond has been furnished, and the insurance hereinbefore referred to has been procured.

RE-ASSIGNMENT

It is expressly understood and agreed that this agreement is not assignable, in whole or in part, by the subcontractor, save and excepting with the written consent of the contractor.

ROUGH GRADE

The subcontractor agrees to put the rough grade to within two-tenths (2/10) of a foot of the finished grade as provided in the plans and specifications, and it is further agreed that all surplus dirt remaining upon the work done and performed by the subcontractor and occasioned by the finished work done and performed by the contractor shall be removed by the subcontractor.

PARTIES BOUND BY THIS AGREEMENT

THIS AGREEMENT SHALL BIND the heirs, executors, administrators, successors and assigns of the parties hereto.

IN WITNESS WHEREOF, the contractor and subcontractor have executed these presents on the day and year first hereinabove written.

Ferrest M. Bodenhamer, an individual doing
business under the
firm name and style
of

BODENHAMER CONSTRUCTION CO.

"Contractor"

"Subcontractor"

San Diego, California

May 18, 1934

Mr. H. W. Savage, Hydraulic Engineer
City of San Diego
524 F Street
San Diego, California.

Subject: San Diego River Project, El Capitan
Reservoir Dam Spillway Extension

Dear Sir:

Under paragraph 48 of the specifications for the construction of the El Capitan Reservoir Dam Spillway Extension, Item "Construction Program":

"Because of the contract between the City of San Diego and H. W. Rohl and T. E. Connolly for the construction of the El Capitan Reservoir Dam, Spillway and Outlet Works, no work is to be done between Stations 7+40 and 8+40 until written authorization is given by the Engineer."

Except for minor excavation which we will indicate on the ground, it will be agreeable to our company if Contractor F. M. Bodenhamer desires to excavate the major portion of the material between Stations 7+40 and 8+40 and form the reach of spillway channel.

Very truly yours,

H.W.Rohl & T.E.Connolly.

11-28-34
copy/p

BODENHAMER CONSTRUCTION COMPANY

San Diego, California

June 6, 1934

City of San Diego
San Diego, California

Attention: H. N. Savage, Hydraulic Engineer

Subject: El Capitan Reservoir Dam Spillway
Extension, Work between Stations
7+40 and 8+40

Gentlemen:

We have advanced the excavation for the El Capitan Reservoir Dam Spillway Extension to the extent that it will particularly advance our work if we may enter upon immediately and advance the excavation to completion between Stations 7+40 and 8+40, except that portion on the left side of the spillway where it is understood Contractor H. W. Kohl & T. E. Connelly desire to maintain a ramp embankment road temporarily.

Your authorization to excavate that portion of our contract work between Stations 7+40 and 8+40 is desired at the earliest date practicable.

Very truly yours,

BODENHAMER CONSTRUCTION COMPANY

By A R Bodenhamer (signature)
A. R. Bodenhamer

June 9, 1934

Bodenhamer Construction Company
354 Hobart Street
Oakland, California

B-4

Subject: San Diego River Project, El Capitan
Reservoir Dam Spillway Extension.
Construction Program.

Gentlemen:

In compliance with the provisions of the contract drawings and specifications for the El Capitan Reservoir Dam Spillway Extension, Paragraph 48 "Construction Program" you are hereby authorized to carry on the majority of the excavation work between Station 7+40 and Station 8+40, except for the southwest corner thereof where you will leave sufficient undisturbed ground in place to support Contractor H. W. Rohl & T. E. Connolly's two truck wide ramp road which they are developing over which to haul and deliver to the top of the El Capitan Dam about 90,000 yards of rock embankment.

The steepness of the back slope of your excavation vicinity Station 7+40, adjacent to the Contractor's ramp road, will obviously depend on the geological formation of the material encountered.

Very truly yours,

H. H. Savage
Hydraulic Engineer

HHS/f

cc Bodenhamer Construction Company, El Capitan Dam
City's Resident Engineer.

H. W. Rohl & T. E. Connolly, El Capitan Dam

H. W. Rohl & T. E. Connolly, Los Angeles

H. W. Rohl & T. E. Connolly Resident Representative,
El Capitan Dam

September 21, 1934

Bodenhamer Construction Company
354 Hobart Street
Oakland, California

B-12

Subject: San Diego River Project, El Capitan
Feature, Spillway Extension,
Construction Progress.

Gentlemen:

In accordance with paragraph 48 of the contract specifications for the El Capitan Reservoir Dam Spillway Extension, you are hereby advised that you may proceed to complete your contract work on the El Capitan Reservoir Dam Spillway Extension between Station 7+40 and Station 8+40.

Very truly yours,

Fred D. Pyle
Hydraulic Engineer

FDP/T

cc Bodenhamer Construction Company
Lakeside, California
City's Resident Engineer

CONCRETE and STEEL.

June 2, 1934

Bodenhamer Construction Company
Contractor El Capitan Spillway Extension
354 Hobart Street
Oakland, California

B-3

Subject: San Diego River Project, El Capitan
Feature, Spillway Extension, steel

Gentlemen:

This is to advise that the number of anchors listed on the steel list, sheet 5 of 5 showing steel for the El Capitan Spillway Extension which was recently furnished you should be changed to read as follows:

F.A. 324 instead of 342
F.A. 702 instead of 720
W.A. 1690 instead of 1858

Copy of this letter is being furnished the Soule Steel Company, which, it is understood, is furnishing the steel, so that it may have advance knowledge of the change.

Very truly yours,

H. N. Savage
Hydraulic Engineer

HNS/r
cc Bodenhamer Construction Company El Capitan Dam
City's Resident Engineer
Soule Steel Company

12-5-34
copy/p

June 20, 1934

Bodenhamer Construction Company
Contractors El Capitan Reservoir
Dam Spillway Extension
354 Hobart Street
Oakland, California

B-5

Subject: San Diego River Project, El Capitan
Feature, Spillway Extension - steel

Gentlemen:

Receipt is acknowledged of copy of letter written to you by the Soule Steel Company dated June 12, 1934, requesting information as to steel reinforcing for the concrete lining of the El Capitan Reservoir Dam Spillway Extension.

Enclosed are two sets of 5 sheets each of City of San Diego's Drawing WD-506 edited to June 16, 1934. Details have been added which it is believed will give the information requested. The enclosed drawings supersede the prints of drawing WD-506 recently furnished you.

A concrete construction joint in the side walls of the spillway occurs parallel to the floor grade and at a minimum of 3 feet above the top of the floor. The horizontal reinforcing steel in the side walls is parallel to the floor grade.

In so far as practicable, the 40-foot lengths of steel in the side walls, normal to the floor grade, are hooked and the shorter bars are used as straight splicers.

As the steel extends through construction joints, the floor and wall panels may be any size provided they satisfy the contract specifications.

Copy of this letter, together with a set of the prints of drawing WD-506 edited to June 16, 1934, is being furnished the Soule Steel Company.

Very truly yours,

M. H. Savage,
Hydraulic Engineer.

FDP/p
encls.

cc Bodenhamer Construction Company El Capitan Dam
Soule Steel Company
City's Resident Engineer

BODENHAMER CONSTRUCTION COMPANY

Lakeside Calif.

July 11 '34

Mr. Fred D. Pyle, Hydraulic Engineer,
Water Department, City of San Diego,
San Diego California.

Dear Sir;

The plans and specifications forming a part of our contract with the City of San Diego for the construction of a portion of the El Capitan Spillway, provides for the furnishing and placing of about 125 tons of $5/8$ " round reinforcing steel and the furnishing and placing of about 150 tons of $3/4$ ", 1" and $1-1/4$ " square reinforcing steel. We wish to use from the stock of the H. G. Fenton Material Company of San Diego approximately 25 tons of $5/8$ " square reinforcing steel and they have requested that we ask permission to substitute this amount of square steel in lieu of the round and to increase the spacing to give the same percentage of square reinforcing steel in the structure as if the round steel were used.

We respectfully request permission to substitute $5/8$ " square steel for the $5/8$ " round in the amount of about 25 tons as above set forth, with the understanding that the steel so substituted shall conform to the requirements of the plans and specifications.

Very respectfully yours,

Bodenhamer Construction Company,

By A. R. Bodenhamer (signature)

ARB-hw

cc Mr. H. Wood,
H.G. Fenton Material Co.

July 16, 1934

Bodenhamer Construction Company
Contractors El Capitan Spillway Extension
354 Hobart Street
Oakland, California

B-6

Subject: San Diego River Project, El Capitan
Feature, Spillway Extension,
concrete aggregates

Gentlemen:

In answer to your verbal request for permission to stockpile graded coarse aggregates for the concrete to be used for El Capitan Spillway Extension lining, there is no objection to your delivering the aggregates, graded as required to the bunkers or stockpiles on the job.

Previous work in the spillway indicated that a 1:2:5 mix using 2½-inch rock resulted in a good workable concrete.

Such a mix required about the following proportions of aggregates:

6 sacks of cement or 564 pounds
1400 pounds of dry sand, if originating in
vicinity of mouth of Chocolate Creek
850 pounds of 2½-inch gravel
970 pounds of 1½-inch gravel
420 pounds of ¾-inch to ⅜-inch crushed rock
200 pounds of pea gravel

These proportions and the materials used may be subject to some variations, and it is suggested that before stockpiling any considerable quantity that the grading be checked by actual test.

Very truly yours,

Fred D. Pyle
Hydraulic Engineer

FDE/t

July 16, 1934

Bodenhamer Construction Company
Contractors El Capitan Spillway Extension
354 Hobart Street
Oakland, California

B-7

Subject: San Diego River Project,
El Capitan Feature, Spillway
Extension, Reinforcing Steel

Gentlemen:

In reply to your letter of July 11, 1934 requesting permission to substitute about 25 tons of 5/8-inch square reinforcing steel in the El Capitan Spillway Extension, for 5/8-inch round reinforcing steel specified in the contract specifications, there is no objection to this substitution provided the steel complies with the contract specifications, and provided it be placed between Station 7+40 and Station 10+78.

The 5/8-inch square deformed bars may be spaced at 23 inches instead of the 18 inches shown for the 5/8-inch round bars.

Very truly yours,

Fred D. Pyle
Hydraulic Engineer

FDP/f

cc Contractor's Resident Representative
City's Resident Engineer

July 26, 1934

Bodenhamer Construction Company
Contractor El Capitan Spillway Extension
354 Hobart Street
Oakland, California

B-8

Subject: San Diego River Project,
El Capitan Feature, Spillway
Extension, steel

Gentlemen:

Receipt is acknowledged by reference of letter from the Soule Steel Company, dated July 21, 1934, to Bodenhamer Construction Company, referring to sheets showing placing lists covering the first batch of steel for the cutoff wall at Station 15+50 of the El Capitan Reservoir Dam Spillway Extension. The substitutions made and the spacing of the bars are satisfactory to the Engineer.

It is understood that the anchor bars referred to in paragraph five of the Steel Company's letter are the "U" bars marked "UB" on Sheet 5 of the City of San Diego's Drawing WD-506.

Very truly yours,

Fred D. Pyle
Hydraulic Engineer

HW/p
cc Contractor's Resident Representative
City's Resident Engineer

September 19, 1934

From : P. Beermann
To : Hydraulic Engineer
Subject : San Diego River Project, El Capitan Spillway
Extension, Canyon Rock Company aggregate plant

An inspection of the Canyon Rock Company's aggregate plant, V. R. Dennis Construction Company, furnishing rock for the El Capitan Dam and the Spillway Extension work, was made by me on Wednesday morning September 19, 1934. This plant is located furthest upstream in Mission Valley and just at the outlet of Mission Gorge.

The 1 1/2" gravel material is taken from a huge stock pile of what was said to be 1 1/2" and 1" material mixed. It is evident from inspection that great variation of this material must necessarily result, as the larger material, when coming from conveyor belt, segregates by falling to the bottom of the pile and the smaller material stays above. This condition can be corrected by taking this material directly from a bin.

The 1 1/2" material does not comply with specification requirements, having too great a percentage passing a 3/4" mesh and therefore requiring a mix which has almost no 1 1/2" material. This explains the appearance of the concrete referred to in letter discussing concreting operations.

The 3/4" gravel material is mixed with crusher pea in the bin to make the smaller aggregate. This material apparently complies with specification requirements.

No 2 1/2" gravel aggregate is now being manufactured because no screen is installed. This can be made available if required.

It is indicated that Rohl and Connolly have better batching facilities than Bodenhamer Construction Company and that, due to separate stock piling and batching, the former do not have the difficulties in concrete mixing that evidently occur on the Bodenhamer contract.

It is, therefore, recommended that Bodenhamer Construction Company be required to comply with the specification requirements as follows:

- (a) All aggregates should be taken directly from the bunkers at aggregate plant and not from stock piles in order to get uniformity.
- (b) A maximum size of 2 1/2" aggregate is desirable for the floor of the spillway extension.

PB/p

P. Beermann

September 19, 1934

From : P. Beermann
To : Hydraulic Engineer
Subject : San Diego River Project, El Capitan Reservoir
Spillway Extension, concreting operations.

Concreting operations were inspected on the spillway extension work in the morning and afternoon of Tuesday, September 18, 1934.

Concreting was in progress on the floor slab at about Station 14+00. The mix in the morning did not have the proper grading appearance and did not work well. By afternoon, however, this condition was corrected and concreting operations were progressing satisfactorily. It was indicated that non uniformity of the material is the cause of considerable trouble. Aggregates appeared very small.

All batches used by the contractor are volume batches. These are satisfactory for all coarse aggregates but, due to difference in bulking of sand at various moisture contents, are a constant source of trouble.

Considerable variation is noticeable in the two small stock piles of coarse aggregates on the job. It is not seen that any change can be made on the job which will correct this condition. The principal difficulty originates at the Dennis aggregate plant and should be corrected there. See separate report to Hydraulic Engineer.

Placing operations consisted of dumping the cars in which the concrete is hauled directly onto the floor to a depth of 12 inches or more and distributing the surplus.

No check has been made on the amount of cement actually used for concrete work.

To improve the operations it appears advisable to advise the contractor that a method be used to regulate the sand more uniformly for each batch and provide a means whereby changes can readily be made; that aggregates necessarily stock piled on the job should be obtained directly from bunkers at the aggregate plant rather than from stock piles at the plant; to pour the floor slab in 6" layers to get proper working of concrete in place; take cylinder samples at least once in 3 days or oftener and check amount of cement in place by measuring excavation.

P. Beermann

PB/p

CAMP

April 24, 1934

Bodenhamer Construction Company
354 Hobart Street
Oakland, California

B-1

Subject: San Diego River Project
El Capitan Reservoir Spillway
Extension, construction camp

Gentlemen:

I have instructed the City's Resident Engineer Harold Wood to have the location of the City of San Diego's projected El Capitan-Lakeside Pipe Line flagged out on the ground so that you may avoid erection of any construction camp structures which might interfere with the installation of the pipe line.

The proposed pipe will be 48 inch diameter and at the location indicated by flags on the ground, a concrete valve chamber will probably be constructed below the present ground level.

Very truly yours,

H. N. Savage,
Hydraulic Engineer.

HNS/p
cc-Contractor's Resident Representative
City's Resident Engineer

May 2, 1934

Bodenhamer Construction Company
354 Hobart Street
Oakland, California

Subject: San Diego River Project, El Capitan
Feature, Spillway Extension, rental
of office building

Gentlemen:

Receipt is acknowledged of your letter dated April 30, 1934 expressing desire to rent the small building on the south side of the San Diego River near the outlet of the diversion tunnel of the El Capitan reservoir dam for field office purposes during the construction of the spillway extension.

You may have the use of this building from May 1, 1934 to September 30, 1934 for a flat rental of \$50.00 payable about June 15, 1934 upon receipt of statement from City of San Diego.

It is understood that the building will be left broom clean and in good condition, except for ordinary wear and tear.

Very truly yours,

H. N. Savage
Hydraulic Engineer

HNS/f
cc Contractor's Resident Representative
City's Resident Engineer
Accountant, Water Department

PROGRESS ESTIMATES FOR PAYMENT

12-5-34
copy/D

CITY OF SAN DIEGO
Water Department

Division of Development and Conservation

El Capitan Reservoir Dam Spillway Extension

The City of San Diego, California

To Bodenhamer Construction Company
354 Hobart Street, Oakland, California

Contract Document No. 287765 dated April 23, 1934 for
construction of El Capitan Reservoir Dam Spillway Extension

Estimate for November 1934 Estimate No. 7 FINAL

For work, material or services
as stated in detail following

Ordinance 435 \$19,134.74

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

Bodenhamer Cons't. Co.

By A.R.Bodenhamer Title Sup't.

Computed by J. W. Williams Checked by P. Beermann

I certify that the materials have been received by me in good con-
dition and in the quantity and quality specified, or the work per-
formed 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
Fred D. Pyle
Hydraulic Engineer

Estimate No. 7 FINAL

Item No.	Work or Material	Quantity and Price	Amount
1.	Excavation Class 1 Station 7+40 to Station 10+37 56,222 cubic yards at \$0.30 per cubic yard		\$16,866.60
2.	Excavation Class 1, Station 10+37 to Station 15+50 132,764 cubic yards at \$0.30 per cubic yard		39,829.20
3.	Excavation Class 1 Station 15+50 to Station 25+00 32,871 cubic yards at \$0.30 per cubic yard		9,861.30
4.	Excavation Class 2 cutoff trenches 700 cubic yards at \$1.00 per cubic yard		700.00
5.	^{22 2.5 59} Concrete Class 1 in cutoff walls 688 cubic yards at \$10.00 per cubic yard		6,880.00
6.	Concrete Class 2 in floor lining 5,647 cubic yards at \$7.00 per cubic yard		39,529.00
7.	Concrete Class 3 side wall lining 2,451 cubic yards at \$10.00 per cubic yard		24,510.00
8.	^{8 786} Cement in place in the work 14,606 barrels at \$2.36 per barrel		34,470.16
9.	Reinforcing steel in place in the work 554,410 pounds at \$0.04 per pound		22,176.40
10.	4" drain tile in place in the work 6,428 linear feet at \$0.50 per linear foot		3,214.00
11.	6" drain tile in place in the work None		0
		Total	<u>198,036.66</u>

Ordinance 435

Gross earnings to date	198,036.66
Less retained 25 per cent	49,509.17
Net earnings to date	148,527.49
Less previous payments	129,192.75
Balance	19,334.74
Less liquidated damages 2 days at \$100.00 per day	200.00
Balance due by this claim	\$ 19,134.74

Correct as to quantities delivered, prices, deductions and computations.

Checked by _____

CONTRACTOR'S COSTS

3-9-35
P

2575

EL CAPITAN RESERVOIR DAM SPILLWAY EXTENSION
Bodenhamer Construction Company

Contractor's Estimated Cost.

Item	Estimated Cost	Per Cent of cost
General overhead, equipment, ect.	\$2,349.73	1.22
Sub contracts, excavation	55,949.32	29.43
Labor	35,156.12	18.43
Material and supplies	1,789.19	.94
Drain tile	642.80	.33
Cement	31,934.25	16.78
Reinforcing steel	18,642.78	9.80
Rock and sand	27,142.93	14.26
Lumber, forms, etc.	2,279.00	1.20
Gasoline, oil, grease	2,532.55	1.40
Equipment rentals	1,719.94	.90
New equipment 50% of \$2,685.26	1,342.63	.70
Tax and licenses	31.62	.01
Bond and insurance	5,832.13	3.07
Compensation insurance	2,403.84	1.26
Interest on holdback	<u>520.29</u>	<u>.27</u>
Total	\$ 190,269.12	100.00
Total payment to Contractor by City of San Diego		\$198,036.66
Contractor's estimated cost		<u>190,269.12</u>
Contractor's estimated profit		.039% \$7,767.54

EDW/p
3-1-35

BODENHAUER CONSTRUCTION COMPANY

354 Hobart Street

Oakland, California

January 5th, 1935

City of San Diego
Water Department
524 F Street
San Diego, California

Attention Mr. Fred D. Eyle

Dear Sir:

Following is a summary of the costs on the
Extension to the El Capitan Dam Spillway:

Labor	\$	37,559.96
Sub-Contracts		55,949.32
Cement		31,934.25
Rock & Sand		87,142.93
Steel & Wire		19,067.81
Lumber		2,279.00
Hardware		2,007.56
Gas, Oil, Greases		2,532.55
Rentals		1,719.94
Repairs		771.26
Misc. Overhead		2,349.73
Interest		235.20
Taxes & Licenses		31.62
Insurance & Bond		5,832.13
New Equipment		<u>2,625.96</u>

Total \$ 192,633.52

Hoping this is the information you desired,

I remain,

Very truly yours,

BODENHAUER CONSTRUCTION COMPANY

BY F. H. BODENHAUER

RECONSTRUCTION FINANCE CORPORATION

3-18-35
copy/p

2578

WESTERN UNION

WASHINGTON DC

1934 FEB 15 AM 10 32

H B DANIEL
CITY ATTORNEYS OFFICE
CITY HALL SAN DIEGO CALIF

DELIVER FOLLOWING TO SAVAGE STOP RE YOUR LETTER
CONCERNING SPILLWAY PROPOSAL FOR BIDS STOP AM
AWAITING WRITTEN RULING FROM ADMINISTRATOR ON
QUESTION WHETHER INVITING BIDS WOULD CONSTITUTE
QUOTE COMMENCEMENT OF PROJECT PRIOR TO ALLOCATION
OF FUNDS END QUOTE RULING OF ADMINISTRATOR HAS
BEEN THAT IF PROJECT COMMENCED PRIOR TO ALLOCATION
OF FUNDS IT BECOMES INELIGIBLE FOR A GRANT STOP
NO BIDS SHOULD BE INVITED UNTIL RULING RECEIVED

C L BYERS

3-18-35
copy/p

2589

LOAN AGENCY
of the
RECONSTRUCTION FINANCE CORPORATION

San Diego, California
March 20, 1934

Mr. H. N. Savage
Hydraulic Engineer
City of San Diego
524 F Street
San Diego, California

RE: Labor preferences El Capitan
Reservoir Dam Spillway
Extension work.

Dear Mr. Savage:

In regard to the inconsistency in the specifications for the El Capitan Reservoir Dam Spillway Extension, as pointed out in my letter of this same date, I believe the requirements of the Reconstruction Finance Corporation will be met if the following changes are made:

On page 2, paragraph 1, line 2, delete the clause "who are bona fide residents of the City of San Diego."

In the same paragraph delete provisions of (b).

Correct paragraph 2, page 2, to be consistent with above correction.

On page 11, under Labor Preferences, make corresponding changes indicated above.

Yours very truly,

James H. Roper
Supervision Engineer

3-18-35
copy/p

LOAN AGENCY
of the
RECONSTRUCTION FINANCE CORPORATION

March 20, 1934
San Diego, California

Mr. H. N. Savage
Hydraulic Engineer
City of San Diego
524 F Street
San Diego, California

Subject: San Diego River Project
El Capitan Reservoir Dam
Spillway Extension

Dear Mr. Savage:

After checking over the specifications for the El Capitan Reservoir Dam Spillway Extension for inconsistencies with the requirements of the Reconstruction Finance Corporation, I can make the following comments.

I believe the specifications are in accord with all requirements with the exception of the first two paragraphs on page 2 and the paragraph under Labor Preferences on page 11. In the agreement between the Council of the City of San Diego and the Reconstruction Finance Corporation it is provided, among other things, that

"In the employment of labor directly engaged in such construction, preference shall be given where they are qualified, first, to ex-service men with dependents and, second, to persons who are either citizens of the United States or who have filed declarations of intention to become citizens, which said declarations of intention continue valid and in good standing."

I suggest that a copy of the specifications be forwarded immediately to Washington, after the suggested change has been. It is understood, of course, that the final approval is not made by myself.

Specifications for work on other projects on which I report have not been accepted for failure to provide for labor preference as pointed out above.

Yours very truly,

James H. Roper
Supervising Engineer.

EXECUTIVE ORDER

GOVERNMENT CONTRACTS AND CONTRACTS INVOLVING THE
USE OF GOVERNMENT FUNDS

By virtue of the authority vested in me as President of the United States, it is hereby ordered that:

1. (a) All invitations to bidders hereafter promulgated by or in behalf of any executive department or independent establishment or other agency or instrumentality of the United States, including government owned and government controlled corporations (all of the foregoing being hereinafter described as agencies of the United States), shall contain a provision to the effect that no bid will be considered unless it includes or is accompanied by a certificate duly executed by the bidder stating that the bidder is complying with and will continue to comply with each approved code of fair competition to which he is subject, and if engaged in any trade or industry for which there is no approved code of fair competition, then stating that as to such trade or industry he has become a party to and is complying with and will continue to comply with an agreement with the President under Section 4(a) of the National Industrial Recovery Act.

(b) No bid which does not comply with the foregoing requirements shall be considered or accepted.

(c) All contracts and purchase orders authorized by any agency of the United States shall contain a provision to the effect that the party or parties awarded any such contract or purchase order shall comply with each approved code of fair competition to which it is subject and if engaged in any trade or industry for which there is no approved code of fair competition, then as to such trade or industry, with an agreement with the President as aforesaid and that the United States shall have the right to cancel any contract for failure to comply with such provision and make open market purchases or have the work called for by the contract otherwise performed, at the expense of the contractor.

(d) No agency of the United States and no Government contractor or supplier shall hereafter accept or purchase for the performance of any contract or purchase order or enter into any subcontracts for any articles, materials or supplies, in whole or in part produced or furnished by any person who shall not have certified that he is complying with and will continue to comply with each code of fair competition which relates to such articles, materials, or supplies, or in case there is no approved code for the whole or any portion thereof, then, to that extent, with an agreement with the President as aforesaid.

(e) The foregoing provisions of this order shall likewise apply to all contracts and purchase orders authorized by any state, municipal corporation, local subdivision, person or corporation in connection with projects carried out or to be carried out, wholly

or in part, with funds loaned or granted by any agency of the United States, and all contracts and agreement for the making of any such loan or grant shall contain a provisions requiring the state, municipal corporation, local subdivision, person, or corporation receiving such loan or grant, to comply with the provisions of this order; provided that this paragraph shall not be construed as requiring the restriction of the use of materials to those produced within the United States nor to require price differentials in favor of such materials.

2. Any person falsely certifying as to compliance as aforesaid who submits any such proposal, bid, contract or subcontract or accepts any purchase order, may be punished as provided in Section 10(a) of the National Industrial Recovery Act, by a fine of not to exceed Five Hundred Dollars (\$500) or imprisonment not to exceed six months, or both, and in event of any such false certification by any such person, any contract, subcontract, or purchase order to which he is party secured by or in furtherance of any such proposal or bid may be cancelled by the other party thereto, and the unfinished portion thereof completed at the expense of the person guilty of such false certification and his sureties, if any.

3. Whenever a dispute shall arise between any agency of the United States and any bidder, contractor, supplier or other person as to compliance with any Code of Fair Competition or with an agreement with the President as aforesaid in connection with any proposal, bid, contract, subcontract, or purchase order mentioned herein, the Administrator for Industrial Recovery, or such agency as he shall designate, shall decide such dispute, and, for the purposes of action under this Executive Order, such decision shall be final and conclusive; but the determination of such agency of the United States shall be effective for all purposes pending such decision.

4. All provisions of approved Codes of Fair Competition shall apply to the making and performance of contracts with or sales to agencies of the United States.

5. The Administrator for Industrial Recovery may make exceptions in specific cases or otherwise under this Order whenever such action shall be recommended to him by an agency of the United States and when in the judgment of the Administrator justice or public interest will best be served thereby.

6. Any provisions of Executive Order No. 6246, signed August 10, 1933, or any other Executive Order, and any rule or regulation in conflict herewith are hereby to that extent modified and rescinded.

FRANKLIN D. ROOSEVELT

THE WHITE HOUSE

March 14, 1934.

3-18-35
copy/p

2583

March 27, 1934

Mr. H. N. Savage
Hydraulic Engineer
San Diego, Calif.

Dear Sir:

Inclosed herewith is communication from the R.F.C. relative to the contracts for new work in connection with El Capitan Reservoir Dam, together with copy of executive order executed March 14, 1934. It appears from the executive order that it may be necessary for the City to revise the plans and specifications for the El Capitan Dam Spillway work. Inasmuch as the order was signed on the 14th of March and only now reached The City of San Diego, we will be justified in readvertising for bids in the event that it becomes necessary.

I intend to have a conference with Mr. Roper on the subject tomorrow, with the hope that perhaps we may succeed in getting an interpretation on the agreement between the R.F.C. and the City to the effect that the purchase of our bonds was not a loan so as to come within the requirements of the executive order.

Yours very truly,

C. L. Byers
City Attorney.

CLB/M

CLASS OF SERVICE DESIRED	
DOMESTIC	CABLE
TELEGRAM	FULL RATE
DAY LETTER	DEFERRED
NIGHT MESSAGE	CABLE LETTER
NIGHT LETTER	WEEK END LETTER

Patrons should check class of service desired; otherwise message will be transmitted as a full-rate communication.

WESTERN UNION

NEWCOMB CARLTON, PRESIDENT

J. C. WILLEVER, FIRST VICE-PRESIDENT

NO.	CASH OR CHECK
	2584
CHECK	
TIME FILED	

Send the following message, subject to the terms on back hereof, which are hereby agreed to

SANDIEGO, CALIFORNIA
APRIL 13, 1934

W L DRAGER
RECONSTRUCTION FINANCE CORPORATION
WASHINGTON D C

RE EL CAPITAN DOCKET ONE ONE
NINE TABULATION BIDS SPILLWAY EXTENSION
OPENED APRIL NINE FURNISHED YOU
WITH LETTER APRIL TWELVE STOP
AM RECOMMENDING CITY COUNCIL AWARD
TO LOW BIDDER BODENHAMER CONSTRUCTION
COMPANY THREE FIVE FOUR HOBART
STREET OAKLAND CALIFORNIA STOP PLEASE
TELEGRAPH APPROVAL IN ACCORDANCE WITH
STAGE TWO CIRCULAR MARCH TWENTY
THREE NINETEEN THIRTY THREE

H N SAVAGE

ALL MESSAGES TAKEN BY THIS COMPANY ARE SUBJECT TO THE FOLLOWING TERMS:

To guard against mistakes or delays, the sender of a message should order it repeated, that is, telegraphed back to the originating office for comparison. For this, one-half the unrepeated message rate is charged in addition. Unless otherwise indicated on its face, this is an unrepeated message and paid for as such, in consideration whereof it is agreed between the sender of the message and this company as follows:

1. The company shall not be liable for mistakes or delays in the transmission or delivery, or for non-delivery, of any message received for transmission at the unrepeated-message rate beyond the sum of five hundred dollars; nor for mistakes or delays in the transmission or delivery, or for non-delivery, of any message received for transmission at the repeated-message rate beyond the sum of five thousand dollars, unless specially valued; nor in any case for delays arising from unavoidable interruption in the working of its lines; nor for errors in cipher or obscure messages.
2. In any event the company shall not be liable for damages for mistakes or delays in the transmission or delivery, or for the non-delivery, of any message, whether caused by the negligence of its servants or otherwise, beyond the sum of five thousand dollars, at which amount each message is deemed to be valued, unless a greater value is stated in writing by the sender thereof at the time the message is tendered for transmission, and unless the repeated-message rate is paid or agreed to be paid, and an additional charge equal to one-tenth of one percent of the amount by which such valuation shall exceed five thousand dollars.
3. The company is hereby made the agent of the sender, without liability, to forward this message over the lines of any other company when necessary to reach its destination.
4. Domestic messages and incoming cable messages will be delivered free within one-half mile of the company's office in towns of 5,000 population or less, and within one mile of such office in other cities or towns. Beyond these limits the company does not undertake to make delivery, but will, without liability, at the sender's request, as his agent and at his expense, endeavor to contract for him for such delivery at a reasonable price.
5. No responsibility attaches to this company concerning messages until the same are accepted at one of its transmitting offices; and if a message is sent to such office by one of the company's messengers, he acts for that purpose as the agent of the sender.
6. The company will not be liable for damages or statutory penalties in any case where the claim is not presented in writing within sixty days after the message is filed with the company for transmission.
7. It is agreed that in any action by the company to recover the tolls for any message or messages the prompt and correct transmission and delivery thereof shall be presumed, subject to rebuttal by competent evidence.
8. Special terms governing the transmission of messages according to their classes, as enumerated below, shall apply to messages in each of such respective classes in addition to all the foregoing terms.
9. No employee of the company is authorized to vary the foregoing.

THE WESTERN UNION TELEGRAPH COMPANY
INCORPORATED
NEWCOMB CARLTON, PRESIDENT

CLASSES OF SERVICE

TELEGRAMS

A full-rate expedited service.

NIGHT MESSAGES

Accepted up to 2:00 A.M. at reduced rates to be sent during the night and delivered not earlier than the morning of the ensuing business day.

Night Messages may at the option of the Telegraph Company be mailed at destination to the addressees, and the Company shall be deemed to have discharged its obligation in such cases with respect to delivery by mailing such night messages at destination, postage prepaid.

DAY LETTERS

A deferred day service at rates lower than the standard telegram rates as follows: One and one-half times the standard night letter rate for the transmission of 50 words or less and one-fifth of the initial rates for each additional 10 words or less.

SPECIAL TERMS APPLYING TO DAY LETTERS:

In further consideration of the reduced rate for this special Day Letter service, the following special terms in addition to those enumerated above are hereby agreed to:

A. Day Letters may be forwarded by the Telegraph Company as a deferred service and the transmission and delivery of such Day Letters is, in all respects, subordinate to the priority of transmission and delivery of regular telegrams.

B. This Day Letter is received subject to the express understanding and agreement that the Company does not undertake that a Day Letter shall be delivered on the day of its date absolutely, and at all events; but that the Company's obligation in this respect is subject to the condition that there shall remain sufficient time for the transmission and delivery of such Day Letter on the day of its date during regular office hours, subject to the priority of the transmission of regular telegrams under the conditions named above.

No employee of the Company is authorized to vary the foregoing.

NIGHT LETTERS

Accepted up to 2:00 A.M. for delivery on the morning of the ensuing business day, at rates still lower than standard night message rates, as follows: The stand-

ard telegram rate for 10 words shall be charged for the transmission of 50 words or less, and one-fifth of such standard telegram rate for 10 words shall be charged for each additional 10 words or less.

SPECIAL TERMS APPLYING TO NIGHT LETTERS:

In further consideration of the reduced rates for this special Night Letter service, the following special terms in addition to those enumerated above are hereby agreed to:

Night Letters may at the option of the Telegraph Company be mailed at destination to the addressees, and the Company shall be deemed to have discharged its obligation in such cases with respect to delivery by mailing such Night Letters at destination, postage prepaid.

No employee of the Company is authorized to vary the foregoing.

FULL RATE CABLES

An expedited service throughout. Code language permitted.

DEFERRED HALF-RATE CABLES

Subject to being deferred in favor of full rate messages for not exceeding 24 hours. Must be in plain language of country of origin or of destination, or in French. This service is in effect with most countries throughout the world.

CABLE NIGHT LETTERS

An overnight, low-rate, plain-language service. Delivery by mail beyond London will be made if a full mailing address is given and the words "Post" and "London" are written in the address. Minimum 20 or 25 words charged for.

WEEK-END LETTERS

At still lower rates. Similar to Cable Night Letters except that they are accepted up to midnight Saturday for delivery Monday morning, if telegraphic delivery is selected. Minimum 20 or 25 words charged for.

CLASS OF SERVICE DESIRED	
DOMESTIC	CABLE
TELEGRAM	FULL RATE
DAY LETTER	DEFERRED
NIGHT MESSAGE	CABLE LETTER
NIGHT LETTER	WEEK END LETTER

Patrons should check class of service desired; otherwise message will be transmitted as a full-rate communication.

WESTERN UNION

NEWCOMB CARLTON, PRESIDENT

J. C. WILLEVER, FIRST VICE-PRESIDENT

NO.	CASH OR CHECK
	2585
CHECK	
TIME FILED	

Send the following message, subject to the terms on back hereof, which are hereby agreed to

FA226 24 GOVT-TX WASHINGTON DC 17 528P 1934 APR 17 PM 2 42

H H SAVAGE, HYDRAULIC ENGINEER-

WATER DEPT SANDIEGO CALIF-

RETEL APRIL THIRTEEN AWARD SPILLWAY EXTENSION TO BODENHAMER
CONSTRUCTION COMPANY ESTIMATED COST ONE HUNDRED NINETY
SEVEN THOUSAND SEVEN HUNDRED DOLLARS SATISFACTORY TO THIS
CORPORATION-

H B WHITAKER SELF LIQUIDATING DIVISION RECONSTRUCTION
FINANCE CORPORATION.

ALL MESSAGES TAKEN BY THIS COMPANY ARE SUBJECT TO THE FOLLOWING TERMS:

To guard against mistakes or delays, the sender of a message should order it repeated, that is, telegraphed back to the originating office for comparison. For this, one-half the unrepeated message rate is charged in addition. Unless otherwise indicated on its face, this is an unrepeated message and paid for as such, in consideration whereof it is agreed between the sender of the message and this company as follows:

1. The company shall not be liable for mistakes or delays in the transmission or delivery, or for non-delivery, of any message received for transmission at the unrepeated-message rate beyond the sum of five hundred dollars; nor for mistakes or delays in the transmission or delivery, or for non-delivery, of any message received for transmission at the repeated-message rate beyond the sum of five thousand dollars, *unless specially valued*; nor in any case for delays arising from unavoidable interruption in the working of its lines; nor for errors in cipher or obscure messages.
2. In any event the company shall not be liable for damages for mistakes or delays in the transmission or delivery, or for the non-delivery, of any message, whether caused by the negligence of its servants or otherwise, beyond the sum of five thousand dollars, at which amount each message is deemed to be valued, unless a greater value is stated in writing by the sender thereof at the time the message is tendered for transmission, and unless the repeated-message rate is paid or agreed to be paid, and an additional charge equal to one-tenth of one percent of the amount by which such valuation shall exceed five thousand dollars.
3. The company is hereby made the agent of the sender, without liability, to forward this message over the lines of any other company when necessary to reach its destination.
4. Domestic messages and incoming cable messages will be delivered free within one-half mile of the company's office in towns of 5,000 population or less, and within one mile of such office in other cities or towns. Beyond these limits the company does not undertake to make delivery, but will, without liability, at the sender's request, as his agent and at his expense, endeavor to contract for him for such delivery at a reasonable price.
5. No responsibility attaches to this company concerning messages until the same are accepted at one of its transmitting offices; and if a message is sent to such office by one of the company's messengers, he acts for that purpose as the agent of the sender.
6. The company will not be liable for damages or statutory penalties in any case where the claim is not presented in writing within sixty days after the message is filed with the company for transmission.
7. It is agreed that in any action by the company to recover the tolls for any message or messages the prompt and correct transmission and delivery thereof shall be presumed, subject to rebuttal by competent evidence.
8. Special terms governing the transmission of messages according to their classes, as enumerated below, shall apply to messages in each of such respective classes in addition to all the foregoing terms.
9. No employee of the company is authorized to vary the foregoing.

THE WESTERN UNION TELEGRAPH COMPANY
INCORPORATED
NEWCOMB CARLTON, PRESIDENT

CLASSES OF SERVICE

TELEGRAMS

A full-rate expedited service.

NIGHT MESSAGES

Accepted up to 2:00 A.M. at reduced rates to be sent during the night and delivered not earlier than the morning of the ensuing business day.

Night Messages may at the option of the Telegraph Company be mailed at destination to the addressees, and the Company shall be deemed to have discharged its obligation in such cases with respect to delivery by mailing such night messages at destination, postage prepaid.

DAY LETTERS

A deferred day service at rates lower than the standard telegram rates as follows: One and one-half times the standard night letter rate for the transmission of 50 words or less and one-fifth of the initial rates for each additional 10 words or less.

SPECIAL TERMS APPLYING TO DAY LETTERS:

In further consideration of the reduced rate for this special Day Letter service, the following special terms in addition to those enumerated above are hereby agreed to:

A. Day Letters may be forwarded by the Telegraph Company as a deferred service and the transmission and delivery of such Day Letters is, in all respects, subordinate to the priority of transmission and delivery of regular telegrams.

B. This Day Letter is received subject to the express understanding and agreement that the Company does not undertake that a Day Letter shall be delivered on the day of its date absolutely, and at all events; but that the Company's obligation in this respect is subject to the condition that there shall remain sufficient time for the transmission and delivery of such Day Letter on the day of its date during regular office hours, subject to the priority of the transmission of regular telegrams under the conditions named above.

No employee of the Company is authorized to vary the foregoing.

NIGHT LETTERS

Accepted up to 2:00 A.M. for delivery on the morning of the ensuing business day, at rates still lower than standard night message rates, as follows: The stand-

ard telegram rate for 10 words shall be charged for the transmission of 50 words or less, and one-fifth of such standard telegram rate for 10 words shall be charged for each additional 10 words or less.

SPECIAL TERMS APPLYING TO NIGHT LETTERS:

In further consideration of the reduced rates for this special Night Letter service, the following special terms in addition to those enumerated above are hereby agreed to:

Night Letters may at the option of the Telegraph Company be mailed at destination to the addressees, and the Company shall be deemed to have discharged its obligation in such cases with respect to delivery by mailing such Night Letters at destination, postage prepaid.

No employee of the Company is authorized to vary the foregoing.

FULL RATE CABLES

An expedited service throughout. Code language permitted.

DEFERRED HALF-RATE CABLES

Subject to being deferred in favor of full rate messages for not exceeding 24 hours. Must be in plain language of country of origin or of destination, or in French. This service is in effect with most countries throughout the world.

CABLE NIGHT LETTERS

An overnight, low-rate, plain-language service. Delivery by mail beyond London will be made if a full mailing address is given and the words "Post" and "London" are written in the address. Minimum 20 or 25 words charged for.

WEEK-END LETTERS

At still lower rates. Similar to Cable Night Letters except that they are accepted up to midnight Saturday for delivery Monday morning, if telegraphic delivery is selected. Minimum 20 or 25 words charged for.

April 17, 1934

Mr. H. N. Savage
Hydraulic Engineer
City of San Diego, Calif.

My dear Mr. Savage:

Under date of March 23 I transmitted to the R.F.C. copy of drawings and specifications for the spillway extension. Subsequent thereto I received from the R.F.C. a copy of Executive Order entitled, "Government Contracts and Contracts Involving the Use of Government Funds", dated March 14, 1934. This Executive Order required certain additional provisions in the form of contract under advertisement. Therefore, under date of March 29, I sent a telegram to Mr. Whitaker as follows:

"Referring to executive order signed March fourteenth entitled, Government Contracts involving the use of government funds, City has already advertised for bids on El Capitan Spillway Extension stop refer you section 39 of specifications stop it appears paragraph one E of executive order that said order does not apply to San Diego in that San Diego entered into contract with Reconstruction Finance Corporation at a prior date stop Our belief that executive order should not be considered retroactive stop would appreciate ruling whether executive order is mandatory and applicable to spillway advertisement stop if so then is not paragraph thirty-nine of specifications for spillway sufficient."

Subsequent thereto and under date of April 2, I received a letter from Mr. Whitaker as follows:

"Re: Docket 119-San Diego, Cal.

"This will acknowledge receipt of your letter of March 23, 1934, transmitting copy of drawings and specifications for the spillway extension to the El Capitan Dam. It is noted that proposals are to be received April 9, 1934.

"These specifications have been examined and are satisfactory."

I, therefore, assumed that inasmuch as he had theretofore received my telegram, the plans and specifications and form of contract were acceptable.

However, subsequent thereto I received another letter from Mr. W. L. Drager, Engineer of Self Liquidating Division, dated April 3, reading as follows:

"Re: Docket 119-San Diego, Cal.

"In reply to your telegram of March 30, 1934, relative to the Executive Order of March 14, 1934, and its application to the award of the contract for spillway extension now being advertised, I am enclosing

a copy of an interpretation which has been furnished by the Assistant National Compliance Director. This interpretation has been given in response to a request from this office, and I believe fully answers your question."

Enclosure reads as follows:

"RECONSTRUCTION FINANCE CORPORATION
WASHINGTON

April 2, 1934

TO ALL SELF-LIQUIDATING BORROWERS:

"Below please find interpretation of the Executive Order of March 14, 1934:

"In accordance with your request by telephone, I wish to advise that bids invited and received prior to March 15, 1934, are excepted from the Executive Order, signed March 14, 1934, regarding Government contracts and contracts involving the use of Government funds.

"Yours very truly,
(signed Frank Healy
Frank Healy
Assistant National Compliance
Director"

(Signed) H. E. Whitaker
H. E. WHITAKER
Acting Chief Engineer
Self-Liquidating Division"

The interpretation placed upon the Executive Order apparently requires us to include as a part of the contract the applicable provisions of the Executive Order dated March 14.

This morning I conferred with Mr. James H. Reper concerning the subject and it is his belief that an addenda to the contract should be prepared and signed by the low bidder upon award to him of the contract. Mr. Reper, some time ago, made some suggestions along these lines, and I hand you herewith copy of a certificate to be attached to the contract and signed by the contractor, which will, I believe, receive the approval of Mr. Reper and the other R.F.C. officials.

Very truly yours,

C. L. BYERS
City Attorney

CLB:HC
Inc.-1

CERTIFICATE OF COMPLIANCE WITH EXECUTIVE ORDER
OF THE PRESIDENT OF THE UNITED STATES, DATED
MARCH 14, 1934, AND ENTITLED, "GOVERNMENT CON-
TRACTS AND CONTRACTS INVOLVING THE USE OF GOV-
ERNMENT FUNDS".

IT IS HEREBY CERTIFIED that the undersigned is comply-
ing with and will continue to comply with each approved code
of fair competition to which he is, or may become, subject;
and that The City of San Diego shall have the right to cancel
this contract for failure to comply with this provision
thereof, and thereafter make open market purchases or have
the work called for by the contract otherwise performed, at
the expense of the contractor.

THE UNDERSIGNED FURTHER CERTIFIES that he will not
accept or purchase for the performance of this work or enter
into any subcontracts for any articles, materials or supplies,
in whole or in part produced or furnished by any person who
shall not have certified that he is complying with and will
continue to comply with each code of fair competition which
relates to such articles, materials or supplies; or in case
there is no approved code for the whole or any portion thereof,
then, to that extent, with an agreement with the President
under Section(a) of the National Industrial Recovery Act.

WE HEREBY FURTHER AGREE that whenever a dispute shall
arise, between The City of San Diego and the undersigned,
supplier of materials, or other person, as to compliance with
any code of fair competition or with an agreement with the
President under Section 4(a) of the National Industrial Re-
covery Act in connection with this contract, subcontract or
purchase order mentioned herein, the Administrator for Indus-
trial Recovery or such agency as he shall designate shall
decide such dispute; and for the purposes of action under
this executive order it is agreed that such decision shall be
final and conclusive; and it is further agreed that the de-
termination of such agency of the United States shall be
effective for all purposes, pending such final decision.

Dated _____, 1934.

(Signed) _____

TUNNEL INNER LINING

CONSTRUCTION BY CONTRACT

DRAWINGS and SPECIFICATIONS - DESIGN

3-15-35
copy/p

September 24, 1934

From : P. Beermann
 To : Hydraulic Engineer
 Subject : San Diego River Project, El Capitan Feature
 Bypass tunnel stresses

1. Analysis has been made of the stresses in the El Capitan bypass tunnel as shown on WD-414 with thicknesses of lining indicated in the tabulation, and all under a maximum head of 200 feet.

2.	Thickness in inches <u>assumed</u>	<u>Stresses lbs./sq.in.</u>			
		<u>Crown</u>	<u>Abutment</u>	<u>Intrados</u>	<u>Extrados</u>
Top of tunnel (fixed ends)	18	570	810	1070	370
Tunnel floor (hinged ends)	12	1260	3120	2220	2220

3. Tunnel sides. The actual construction of the sides of the tunnel resulted in much thicker sections than called for on the drawings on account of excavation being backfilled solid and the actual stresses are not susceptible of computation but are believed to be materially less than those in the tunnel floor.

4. Strengthening of tunnel lining between the downstream end of the tunnel plug and the axis of the dam by means of a 12" floor on top of the existing floor and keyed into the sides would result in floor stresses of about 1/2 those indicated above.

5. To resist full hydrostatic head by means of an 18" minimum thickness lining, circular interior internal diameter 22 feet would result in stresses of about 680 pounds per square inch, determined by the use of the cylinder formula. No stress is assumed to be taken by the existing lining, altho some support is no douby given thereby.

P. Beermann

PB/p

September 24, 1934

From : P. Beermann
to : Hydraulic Engineer
Subject : San Diego River Project, El Capitan Feature
Tunnel plug and lining, conference 9-21-34

1. A conference, to determine the length of the proposed tunnel plug at El Capitan Dam and the required strengthening of the tunnel lining, was attended by Consulting Engineer L.C.Hill, Assistant Deputy State Engineer W. H. Holmes, Hydraulic Engineer Fred D. Pyle and Assistant Engineer P. Beermann, September 21, 1934, in the office of the Hydraulic Engineer.

2. Mr. Pyle showed Mr. Hill drawing WD-414 indicating the tunnel lining as constructed and the location of grout pipes and grouting done therein. The amount of grout taken by the holes was briefly indicated.

3. Mr. Hill was informed that the stresses in the crown in the tunnel lining amounted to about 1100 pounds per square inch and in the tunnel floor, if under full hydrostatic head, amounted to about 3100 pounds per square inch.

4. Mr. Hill indicated that due to the seepage still existing in the tunnel lining, after grouting had been completed, full hydrostatic head could and probably would come upon that portion of the tunnel lining above the upstream axis of the dam and that therefore strengthening was required.

5. He indicated that in design the unit compressive stress of 700 pounds per square inch for such lining was reasonable. Mr. Pyle indicated that preliminary designs had been prepared resulting in circular lining having minimum thickness of 18 inches and being stressed to about 680 pounds per square inch.

6. After considerable discussion of location of the tunnel plug, it was concluded that, provided such a lining were installed, it could withstand full hydrostatic head and the tunnel plug could be located near the upstream end of the tunnel with its lower end at about Station 1+31.

7. Mr. Hill agreed that such a lining, if installed, should be placed in four sections and that in the top of the lining at about ten feet intervals grout pipes should be inserted to permit grouting after the concrete had taken its shrinkage.

8. He also indicated that where seepage now exists in the present tunnel lining above the axis of the dam, such water should be taken care of during concreting operations and led away from the concrete.

9. It was also agreed that, from a short distance below the axis of the dam, no tunnel strengthening was required on account of the rapid dropping in hydrostatic pressure which could come upon the tunnel lining and that seepage could be taken care of by drilling weep holes in the present lining.

10. Pertaining to the tunnel plug, Mr. Hill indicated that 30 feet in length would be ample. He thought that the sand blasting of the lining where covered by the tunnel plug was desirable. Mr. Pyle indicated that the specifications required thorough roughening of the concrete, but said nothing about sand blasting.

11. Mr. Hill thought that roughening of the concrete would consist in roughening all concrete surface now exposed so as to present an entirely new surface, and that care should be taken that, prior to placing concrete, the newly exposed surface was thoroughly wet so as to prevent withdrawing of moisture in newly placed concrete.

12. He also indicated that concrete might be placed in the plug up to about elevation of the outlet pipes at as rapid a rate as the contractor deemed proper so long as floating of the pipes was prevented, and thereafter the remainder of the plug could be poured in three pours, allowing about three days between successive vertical pours.

13. The Troiel system of grout pipe was pointed out to Mr. Hill and the intent of laying two complete circular openings around the tunnel, grouting one and leaving the other for future grouting at a time when the tunnel plug had had opportunity to take its shrinkage. This he indicated to be proper.

14. Mr. Holmes offered no objections.

P. Beermann

FB/p

Sept. 24, 1934

From : Hydraulic Engineer

To : City Manager

Subject: San Diego River Project, El Capitan Feature, Tunnel Plug

On September 20, 1934 a field examination was made of the bypass tunnel at El Capitan Dam with Louis C. Hill, City's Consulting Engineer; W. H. Holmes, Assistant Deputy State Engineer, and J. W. Williams, Acting Resident Engineer.

The bypass tunnel is horseshoe shape, 25 feet in diameter, 1173 feet long and is concrete lined. It served to bypass floods during construction of the dam and below the plug will serve for the installation of pipes to connect to the future pipe lines leading from the dam.

The original contract plans provided for a 210 foot plug near the upper end through which were to be installed two 36-inch and two 42-inch cast iron pipes from the outlet control tower. The total cost of such a plug at contract prices is estimated to be about \$81,000.00.

During the construction of the tunnel it was found necessary owing to the material encountered to timber from the inlet end of the tunnel to a point about 80 feet past the axis of the dam.

After the concrete lining was installed, grouting of the excavation back of the timbering was accomplished under a pressure of 60 pounds to the square inch through holes extending to the back of the lining. This grouting extended from the upstream end of the tunnel to about 40 feet below the axis of the dam. Subsequently high pressure grouting through 10 foot drill holes under 100 pounds pressure to the square inch was accomplished over the same area.

The results obtained from the grouting operations and the seepage which still exists indicate that the material through which the tunnel is constructed is porous, and the tunnel lining from the lower end of the tunnel plug to the axis of the dam will be subject to fully hydrostatic head of the water in the reservoir. Below the axis of the dam, seepage will be reduced by the concrete core wall and the grouting beneath the core wall. The small amount of hydrostatic pressure on the tunnel downstream from the core wall may be relieved by drilling weep holes.

The problem was further considered on September 21 in the office by Mr. Hill, Mr. Holmes, Assistant Engineer Paul Beermann and myself. A number of suggested solutions

were considered and the following conclusions reached, subject to the State Engineer's approval:

(a) Reduce the length of the tunnel plug to 30 feet and locate it so as to make use of the two lower keyways now in place for that purpose.

(b) Install an 18 inch circular concrete lining in the tunnel between the lower end of the tunnel plug and the axis of the dam, a distance of about 500 feet. This lining should be placed as soon as possible.

(c) The lower part of the plug containing the outlet pipes connecting with the outlet tower may be placed after the embankment is brought up to elevation about 763, and the remainder of the plug as soon as the State permits.

(d) The estimated cost of the plug and lining is \$45,000.00.

Fred D. Pyle
Hydraulic Engineer.

FDP/T

October 3, 1934

From : Resident Engineer
To : Hydraulic Engineer
Subject : San Diego River Project, El Capitan Feature
Outlet tunnel, innerlining

1. On October 2, 1934 review of the rough draft of the specifications for El Capitan Reservoir Dam Outlet tunnel interlining was made and several suggestions are here offered.

2. The design of the full circular 18" lining was investigated and found that the maximum unit stress using the cylinder formula and considering the section as a thin cylinder with maximum water pressure of 211 feet under the lower end of the bottom portion of the lined section would be 760 pounds per square inch. This unit stress is half that allowed under the Joint Standard Building Code, or, in other words, the plain concrete lining would not be unduly stressed if the entire hydrostatic head were mud instead of water.

3. Reinforcing steel is shown on the plans. It is not seen why this steel is necessary and it is considered a detriment in placing concrete. The 18" thickness will permit men to work inside the forms but if steel is placed, then this would not be possible.

4. On page 23 of the rough draft of the specifications it is thought that the date of completion might be set ahead to January 15, 1935. It is also suggested that the specifications provide that the work be started at the upper end adjacent to the plug and that the progress be in general down grade. Also there is no objection seen for carrying on the work at several places at once.

5. A legal question comes to mind as to whether the City can construct this inner lining without first formally accepting the present tunnel lining from H. W. Kohl and T. E. Connolly. Page 27 of the specifications providing for ingress and egress to the tunnel might also permit the contractor to make and leave a fill in the lower end of the tunnel which would be above the ground water level. This would have a decided advantage of preventing a pond in the lower end of the tunnel.

This part of the specifications also provides that the contractor should provide for ventilation. Ventilation could properly be quite easily affected by removing the dome cover on the top of the tower and opening one or two of the 36" saucer valves in the base of the tower, thus creating a draft from the tunnel up the tower

10-3-34

On page 31 under CONCRETE it is suggested that the contractor be told the size and thickness of the tunnel lining and that he will be paid his bid price per linear foot of tunnel lining in place and then provide in the bid schedule a unit price per cubic yard for additional concrete that may be required.

On page 37, there is no reason seen why there should be "dry" concrete. Also hand mixing should not be permitted. The specifications should also provide for no concrete to be placed in water.

Under the head of FORMS on page 39, it is suggested that only steel forms be permitted and these should be self-supporting and not require wire or rods attached to the present concrete lining.

Under PLACING OF CONCRETE it is suggested that the tunnel lining sections be not greater than ten feet in length poured at any one time and that each section be provided with tight bulkheads set at right angles to the axis of the tunnel and provided with keys on the bulkhead.

It is further suggested under PLACEMENT OF CONCRETE that no concrete, except in the crown segment, be permitted by pneumatic process, and certainly preference should be given to placement by some direct method such as pumping, or even by hand placing.

Harold Wood
Resident Engineer

HW/p

October 5, 1934

M E M O R A N D U M

San Diego River Project, El Capitan Feature
Tunnel Lining

During the discussion on October 4, 1934 in the El Capitan Reservoir Dam bypass tunnel with Consulting Engineer Louis C. Hill and Resident Engineer Harold Wood, it developed that Mr. Hill was not aware of the amount of steel in the present lining when he recommended that the amount of steel shown on Drawing WD-513 be increased.

The following conclusions were reached:

- (a) The use of wooden forms with the lagging carried up as concreted would be preferable to steel forms.
- (b) Use of vibrating machines not necessary, although care should be exercised to obtain good quality of concrete.
- (c) All flows of water should be carried through the lining in pipes.
- (d) All effervescence and lime should be removed from the inside of the present lining with wet sand blast.
- (e) No further work should be required of Contractor H. W. Rohl and T. E. Connolly in the portion of the tunnel to be lined except for such repairs as has heretofore been indicated.

Fred D. Pyle
Hydraulic Engineer

FDP/t

October 5, 1934

Hydraulic Engineer

City Manager

San Diego River Project, El Capitan Feature,
Tunnel Plug

On October 4, 1934 a.m. field examination was made of the upper portion of the inlet end of the bypass tunnel at El Capitan Dam with City's Consulting Engineer Louis C. Hill and Resident Engineer Harold Wood, during which time there was considerable discussion as to the details which should be taken into account in preparing the drawings and specifications for the inner lining.

At a conference in the City's Resident Engineers Camp in the late afternoon with Mr. Hill, Deputy State Engineer Geo. W. Hawley, Assistant Deputy State Engineer W. H. Holmes, Hydraulic Pill Engineer D. W. Albert, Resident Engineer Wood, Acting Resident Engineer J. W. Williams, City Manager Geo. L. Buck and City Attorney C. L. Byers the tunnel plug was discussed.

The State's representatives, after explanation of details, agreed to construction of the plug as indicated on drawing WD-513, and further agreed, in view of the present stage of construction of the dam, to the immediate installation of that portion of the plug containing the outlet pipes and all below the spring line with the understanding that eight new grout holes 10 feet deep would be placed in each of the keyways, spaced between the high pressure grout holes heretofore grouted.

The surface of the present lining in contact with the plug to be treated with wet sand blast or to be removed to a depth of 2 or 3 inches by air tools or other means.

The top of the concrete forming the pipe encasement within the limits of the plug to be 2 feet higher at the lower end of the plug than at the upper end.

The remainder of the plug not to be placed until the additional tunnel lining is nearing completion.

The State's representatives indicated that they had not completed their studies of the 18-inch inner lining, but indicated it would probably be approved with minor changes. They may insist on extending the lining past the timbered section near the axis of the dam which would increase the length to about 570 feet. They were not certain as to the requirement for bonding or not bonding between the new lining.

-2-

Messrs. Rohl and Connolly had previously expressed themselves as not being interested in the installation of the lining as a part of their contract. However, they were very anxious to proceed with the installation of the first portion of the plug and the encasement of the outlet pipes.

In the event that the placing of the upper portion of the tunnel plug is delayed beyond the completion of the other portions of the H. W. Rohl & T. E. Connolly contract it may be desirable to accept the completion of their contract without this work being done and have the contractor on the inner lining place the remainder of the plug.

In view of the restricted area of the tunnel after the first portion of the plug and pipe line encasement are installed and the possibility of floods carrying debris which might become lodged against the lower portion of the plug it may be advisable to have no portion of the plug or pipe encasement installed by H. W. Rohl & T. E. Connolly and to arrange for this work to be done by the contractor placing the inner lining after sufficient inner lining has been placed to justify the installation of the plug.

It is indicated that Council approval should be secured as soon as possible for the inner lining in the El Capitan bypass tunnel, and that drawings and specifications should be issued at an early date in order that the work of installing the inner lining and tunnel plug may be completed in time to impound the runoff from the winter rains.

Fred D. Pyle
Hydraulic Engineer.

FDP/T
cc Consulting Engineer
L. C. Hill

October 6, 1934

2691
COPY

From : Hydraulic Engineer
To : City Manager
Subject: San Diego River Project, El Capitan Feature,
Tunnel Plug and Inner Lining.

During the past thirty days consideration has been given by the City's Consulting Engineer Louis C. Hill, representatives of the State Engineer and the City's Engineering Staff to the installation of the plug in the bypass tunnel at El Capitan Dam.

The bypass tunnel is horseshoe shape, 25 feet in diameter, 1173 feet long, and is concrete lined. It served to bypass floods during construction of the dam, and below the plug will serve for the installation of pipes to connect to the future pipe lines leading from the dam.

The original contract plans provided for a 210 foot plug near the upper end through which were to be installed two 36-inch and two 42-inch cast iron pipes from the outlet control tower. The total cost of such a plug at contract prices is estimated to be about \$81,000.00.

During the construction of the tunnel it was found necessary, owing to the material encountered, to timber from the inlet end of the tunnel to a point about 80 feet past the axis of the dam.

After the concrete lining was installed, grouting of the excavation back of the timbering was accomplished under pressure of 60 pounds to the square inch through holes extending to the back of the lining. This grouting extended from the upstream end of the tunnel to about 40 feet below the axis of the dam. Subsequently high pressure grouting through 10 foot drill holes under 100 pounds pressure to the square inch was accomplished over the same area.

The results obtained from the grouting operations and the seepage which still exists indicate that the material through which the tunnel is constructed is porous, and that the tunnel lining from the lower end of the tunnel plug to the axis of the dam will be subject to full hydrostatic head of the water in the reservoir. Downstream from the axis of the dam, seepage and pressures will be reduced by the concrete core wall and the grouting beneath the core wall.

In view of these conditions it is deemed advisable to reduce the length of the plug to 30 feet and to install an 18-inch

concrete inner lining in the tunnel from the lower end of the tunnel plug to the end of the timbered section below the axis of the dam, a distance of about 570 feet. The estimated combined cost is \$48,000.00. ↓

Drawings for this work have been submitted to the State Engineer's office for approval. 604

The H. W. Rohl & T. E. Connolly contract provides for the construction of the tunnel plug, but not for the inner lining, and it is indicated that the State will not permit the completion of the tunnel plug until the inner lining (is nearing completion.) *was being completed*

It appears advisable that H. W. Rohl & T. E. Connolly be required, in completing their work on the tunnel plug, to construct only the lower portion of the plug containing the outlet pipes and to include the remainder of the plug with the inner lining of the tunnel in a new contract. About sixty days will be required to complete the inner lining and the remainder of the tunnel plug after the contract is awarded.

Drawings and specifications are being prepared and will be submitted to the Council for appropriate action at the earliest possible date.

Fred D. Pyle
Hydraulic Engineer.

FDP/f

October 13, 1934

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

Subject: San Diego River Project, El Capitan Feature,
Bypass Tunnel Inner Lining, Drawings and
Specifications.

Gentlemen:

Submitted herewith is Notice Inviting Bids, Proposal,
Drawings and Specifications for the El Capitan Reservoir Dam
Tunnel Inner Lining which includes the completion of the
installation of the tunnel plug.

Permission has been given H. W. Rohl & T. E. Connolly,
Contractor for the El Capitan Reservoir Dam, to install the
lower portion of the plug in the bypass tunnel.

It is deemed advisable not to complete the plug until at
least 150 feet of the 18-inch concrete inner lining adjacent
to the lower end of the plug has been installed.

The rate of pay indicated for the various types of work
is identical with that established by the Council for the El
Capitan Reservoir Dam Spillway Extension.

It is urgently required that the tunnel plug be com-
pleted at the earliest practicable date, in order to save the
coming winter runoff, if possible, and avoid flood hazards to
the Contractor's work, which will increase materially as
winter approaches, and therefore, the date of opening bids is
set for October 30, 1934, and the completion of the work for
January 15, 1935.

RECOMMENDATION: It is recommended that the drawings and
specifications for the El Capitan Reservoir Dam Tunnel Inner
Lining as submitted herewith be approved; that the Purchasing
Agent be authorized to advertise for bids and that bids be
received until 10:00 o'clock A.M. October 30, 1934 and there-
after opened.

Very respectfully,

Fred D. Pyle
Hydraulic Engineer

FDP/f

B I D S

Tabulation of Bids

I t e m	M. H. Golden		Bodenhamer Construction Company		Kemp Construction Company Ltd.		V. R. Dennis Construction Company		Walter Trepte	
	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1. Concrete inner lining in place 2,920 cubic yards	\$10.05	\$29,346	\$18.00	\$52,560	\$18.60	\$54,312	\$20.00	\$58,400	\$20.00	\$58,400
2. Concrete in tunnel plug 300 cubic yards	12.00	3,600	18.00	5,400	12.00	3,600	20.00	6,000	20.00	6,000
3. Cement in place in the work 4,650 barrels	2.295	10,671. <u>.25</u>	2.36	10,974	3.54	16,461	2.50	11,625	2.50	11,625
4. Reinforcing steel in place in the work 142,000 pounds	.04	5,680	.04	5,680	.053	7,526	.0425	6,035	.035	4,970
5. Cement grout in place in the work 2,000 cubic feet	.90	1,800	2.00	4,000	1.13	2,260	1.00	2,000	1.00	2,000
6. 2" grout and drain pipe in place in the work 500 linear feet	.50	250	.50	250	.30	150	.50	250	1.00	500
7. Drill holes in concrete 100 linear feet	.20	20	2.00	200	1.50	150	2.00	200	1.00	100
8. 2" Troiel, or equal, grout pipe in place in the work 700 linear feet	.75	525	.50	350	.30	210	1.00	700	1.00	700
9. Cement passing 200 mesh sieve in place in the work 5 barrels	5.00	25	10.00	50	6.00	30	6.00	30	5.00	25
10. 2" pipe caps in place in the work 20 each	.50	10	.50	10	.45	9	.25	5	1.00	20
11. Wet sand blasting 25,000 square feet	.05	1,250	.10	2,500	.03	750	.05	1,250	.10	2,500
TOTALS		\$ 53,177.75		\$81,974		\$85,458		\$86,495		\$86,840

October 30, 1934

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

Subject: San Diego River Project, El Capitan
Reservoir Dam Tunnel Inner Lining
Proposals opened October 30, 1934.

Gentlemen:

On October 30, 1934 the City of San Diego, in response to its notice inviting bids for the construction of the El Capitan Reservoir Dam Tunnel Inner Lining, received five bids which were duly opened by the City Clerk and publicly read. Following is brief summary of each of the five proposals:

M. H. GOLDEN
404 California Bank Building
San Diego, California

Proposal accompanied by certified check
for \$5,500.00
Total amount of proposal \$53,177.75
Guaranty of bonds executed by Standard
Surety and Casualty Company of New York

BODENHAMER CONSTRUCTION COMPANY
354 Hobart Street
Oakland, California

Proposal accompanied by certified
check for \$9,000.00
Total amount of proposal \$81,974.00
Guaranty of bonds executed by
Massachusetts Bonding and Insurance Company

KEMPER CONSTRUCTION COMPANY LTD.
3701 Overland Avenue
Los Angeles, California

Proposal accompanied by certified checks for \$11,000.00
Total amount of proposal \$85,458.00
Guaranty of bonds executed by Massachusetts Bonding
and Insurance Company

V. R. DENNIS CONSTRUCTION COMPANY
P. O. Box "F" Station A
San Diego, California

Proposal accompanied by certified check
for \$8,750.00
Total amount of proposal \$86,495.00
Guaranty of bonds executed by Hartford Accident
and Indemnity Company

WALTER TREPTE
1460 J Street
San Diego, California

Proposal accompanied by certified check
for \$9,000.00
Total amount of proposal \$86,840.00
Guaranty of bonds executed by
Columbia Casualty Company of New York

Enclosed is copy of Drawing WD-517 showing the tabulation
of bids.

SUMMARY OF BIDS

M. H. Golden	\$ 53,177.75
Bodenhamer Construction Company	81,974.00
Kemper Construction Company Ltd.	85,458.00
V. R. Dennis Construction Company	86,495.00
Walter Trepte	86,840.00

M. H. Golden's itemized proposal for the sum of \$53,177.75
for the construction of the El Capitan Reservoir Dam Tunnel
Inner Lining is the lowest of the five proposals received and
his bid is \$28,796.25 lower than the next lowest bid. He has
completed a number of public works and investigation discloses
that he is a responsible and reliable bidder.

By reason of the controlling factors, it is of paramount
importance that the construction of the El Capitan Reservoir Dam

-3-

Tunnel Inner Lining be entered upon at the earliest practicable date to insure maximum progress and advancement of the work.

RECOMMENDATION: It is respectfully recommended that the proposal of M. H. Golden be accepted and the work be awarded to him for the construction of the El Capitan Reservoir Dam Tunnel Inner Lining at the unit prices stated in his proposal and that M. H. Golden at the earliest practical date.

Respectfully,

Fred D. Pyle
Hydraulic Engineer

Geo. L. Buck
City Manager

PB/p
Encl. WD-517
cc City Manager
City Attorney

CONTRACT

Document No. 290335
Filed Nov. 22, 1934

CITY OF SAN DIEGO

CALIFORNIA

WATER DEPARTMENT

DIVISION OF DEVELOPMENT AND CONSERVATION

FRED D. PYLE

Hydraulic Engineer

C O N T R A C T

**NOTICE INVITING BIDS, PROPOSAL,
DRAWINGS and SPECIFICATIONS**

M. H. GOLDEN

EL CAPITAN RESERVOIR DAM TUNNEL
INNER LINING

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

October 30, 1934

CITY OF SAN DIEGO

CALIFORNIA

WATER DEPARTMENT

DIVISION OF DEVELOPMENT AND CONSERVATION

FRED D. PYLE

Hydraulic Engineer

**NOTICE INVITING BIDS, PROPOSAL,
DRAWINGS and SPECIFICATIONS**

EL CAPITAN RESERVOIR DAM TUNNEL
INNER LINING

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

October 30, 1934

CONTENTS

Notice Inviting Bids
 Information for Bidders
 Proposal
 Affidavit
 Guaranty of Bonds
 Bidder's Statement of Experience and References
 Bidder's Statement of Equipment
 Schedule
 Form of Contract
 Form of Faithful Performance Bond
 Form of Labor and Materialmen's Bond

SPECIFICATIONS—

General Conditions:

1. Form of Proposal and Signature
2. Proposal
3. Certified check
4. The contract
5. Contractor's bond
6. Transfers
7. Engineer
8. Contractor
9. Samples or specimens
10. Material and workmanship
11. Delays
12. Suspension of contract
13. Changes
14. Extra work or material
15. Delays—no extra compensation
16. Changes at contractor's request
17. Inspection
18. Contractor's financial obligations
19. Experience
20. Specifications and drawings
21. Local conditions
22. Data to be furnished by the contractor
23. Restrictions on disposition of plant, etc.
24. Damages
25. Character of workmen
26. Staking out work
27. Methods and appliances
28. Climatic conditions
29. Quantities and unit prices
30. Removal and rebuilding of defective work.
31. Protection of work and cleaning up
32. Roads and fences

33. Bench marks and survey stakes
34. Right of way
35. Sanitation
36. Subcontractors
37. Infringement of patents
38. Workmen's compensation and indemnity Insurance
39. Compliance with laws

DETAIL SPECIFICATIONS—

40. Requirements
41. List of drawings
42. Commencement, prosecution and completion of work
43. Failure to complete the work in the time agreed upon
44. Meals furnished
45. Water for plant, construction and domestic use
46. Shifts of labor
47. Removal of temporary work
48. Construction program
49. Accessibility
50. Progress estimates and payments

Concrete:

51. Construction General
52. Cement
53. Concrete composition
54. Sand
55. Broken rock and gravel
56. Water
57. Mixing
58. Placing
59. Finishing
60. Forms
61. Supports for forms
62. Reinforcing Steel
63. Preparation of existing surface
64. Water control
65. Construction joints
66. Bonding
67. Curing Concrete
68. Protection of Concrete
69. Tunnel Plug
70. Basis of Payment
71. Payment for concrete
72. Drill holes
73. Cement grout
74. Mixing and placing grout
75. Payment for grout
76. Pipe for grout and drainage
77. Troil grout pipe

NOTICE INVITING BIDS

CITY OF SAN DIEGO

San Diego, California, October 16, 1934.

Sealed proposals will be received at the office of the City Clerk of the City of San Diego, California, until 10:00 o'clock A. M., October 30, 1934, for the construction of El Capitan Reservoir Dam Tunnel Inner Lining involving about 3220 cubic yards of concrete, about 4650 barrels of cement, about 142,000 pounds of reinforcing steel and about 2000 cubic feet grouting and miscellaneous items, all as more particularly and in detail set forth in those certain drawings and specifications contained in Document No. 289826, on file in the office of the City Clerk of said City.

The proposed work is located on the San Diego River, about eight miles northeasterly from the town of Lakeside, which is the terminal of the Lakeside branch of the San Diego and Arizona Railway. The town of Lakeside is about twenty-one miles northeasterly from the City of San Diego.

In accordance with the provisions of Article XII of the Charter of The City of San Diego, the Council of The City of San Diego has ascertained the general prevailing rate of wages applicable to the work to be done to be as follows:

Classification	Per Diem Wage of 8 Hours	Classification	Per Diem Wage of 8 Hours
Auto Mechanics	\$6.40	Flunkeys	\$5.00
Blacksmiths	6.40	General Foremen	9.00
Blacksmith Helpers	5.00	Laborers	5.00
Carpenter Foremen	9.00	Materialmen	5.00
Carpenters	8.00	Mechanics	6.40
Carpenter Apprentices	5.00	Mechanics Helpers	5.00
Clerks	5.00	Mechanic Trouble Shooters	6.00
Cement Finishers	7.00	Pump Men	5.00
Compressor Operators	6.00	Reinforcing Steel Workers	8.00
Concrete Finishers	7.00	Reinforcing Steel Foremen	9.00
Concrete Finisher Helpers	5.00	Superintendents	9.00
Concrete Foremen	6.00	Tractor Operators over 50 H.P.	7.20
Concrete Form Builders	8.00	Tractor Operators under 50 H.P.	6.80
Concrete Spreaders	5.50	Timekeepers	5.00
Concrete Tampers	5.00	Truck Drivers under 15,500 pounds	5.50
Concrete Mixermen	8.00	Truck Drivers over 15,500 and under 25,000 pounds	6.00
Cooks	5.50	Truck Drivers over 25,000 pounds.....	6.50
Crane Operators	7.00	Watchmen	4.50
Drill Sharpeners	6.00	Other classes not less than.....	5.00
Electricians	8.00		
Electrician Helpers	6.50		

For overtime work when the same is permitted by law, one and one-half times the foregoing rates. For work performed on Sundays and legal holidays as set forth in Section 10 of the Political Code of the State of California, one and one-half times the above rates.

No convict labor or aliens shall be directly employed on such work.

In the employment of labor, preference shall be given, when they are qualified, to ex-service men with dependents, and then in the following order (a) to citizens of the United States who are bona fide residents of the City of San Diego or who have filed declaration of intention to become citizens, and (b) to citizens of the United States who are residents of the State of California or who have filed declaration of intention to become citizens.

Except as otherwise provided and subject to the foregoing preferences it is required that all persons employed in the performance of the work shall be bona fide residents of the City of San Diego save and except Superintendents, representatives of the contractor in charge of construction of the work, and skilled workmen who cannot be obtained in said City.

Except in executive, administrative and supervisory positions, as far as practicable and feasible in the opinion of the Engineer, no individual directly employed on the work shall be permitted to work more than forty (40) hours in any one week.

No machinery or materials shall be used or employed in connection with such construction work except such as shall have been produced or manufactured in the United States or its territories.

Work shall be commenced by the contractor within ten (10) days after the execution of the contract on behalf of The City of San Diego and the work must be completed on or before January 15, 1935.

Each proposal must be accompanied by an unconditional certified check for an amount not less than ten per cent of the aggregate sum of the bid payable to the order of the City Clerk, of The City of San Diego, as a guaranty that the bidder will, if successful, promptly execute a satisfactory contract and furnish bonds for the faithful performance of the work as required by paragraph five of these specifications.

All proposals shall be made upon printed forms which will be furnished gratuitously by the Purchasing Agent of said City, or same may be more properly made upon the bid schedule which forms a part of the bound booklet which contains drawings and specifications, and which is referred to in the paragraph immediately following and all such proposals must be accompanied by the affidavit appearing upon said form, and no bid will be considered that does not contain such affidavit. Each bidder is directed to endorse on the envelope containing his bid, his name and the character of work or material upon which the bid enclosed is submitted.

Copies of information for bidders, drawings and specifications, proposal, guaranty of bond, bidding schedule and form of contract may be inspected at the office of the Hydraulic Engineer, Division of Development and Conservation of the Water Department, 524 F Street, San Diego, California. Copies of the drawings and specifications may be obtained at the above office for the sum of ten (\$10.00) dollars which will be returned to the successful bidder, and to all others upon the return by them of the drawings and specifications in good and acceptable condition, within 14 days after opening of bids.

For further particulars address Fred D. Pyle, Hydraulic Engineer, Division of Development and Conservation, of the Water Department, 524 F Street, San Diego, California.

FRED D. PYLE,
Hydraulic Engineer.

H. J. SCHAPER,
Assistant Purchasing Agent.

INFORMATION FOR BIDDERS

The sealed envelope containing the proposal must be endorsed with the bidder's name, marked "Proposal for **EL CAPITAN RESERVOIR DAM TUNNEL INNER LINING**" and addressed "City Clerk, City of San Diego."

No bidder will be permitted to withdraw his proposal after the expiration of the time limit fixed in the notice for receiving bids without rendering his certified check subject to forfeiture to The City of San Diego as liquidated damages as in case of refusal to execute contract and bond after award.

Bidders must present satisfactory evidence as to their responsibility and that they are fully prepared with necessary capital, machinery and material to begin work promptly and to conduct it as required by these specifications.

Bidders must satisfy themselves as to local conditions affecting the work, and no information derived from the maps, plans, specifications, profiles, or drawings, or from the engineer or his assistants will relieve the contractor from any risk or from fulfilling all of the terms of his contract. The accuracy of the interpretation of the facts disclosed by borings or other preliminary investigations is not guaranteed. Each bidder or his representative should visit the site of the work and familiarize himself with local conditions.

The quantities stated in the schedule are estimates and for comparing bids only, and no claim shall be made for 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.

The proposal and schedule submitted must not be detached from the Notice Inviting Bids, drawings and specifications.

The successful bidder will be required to furnish The City of San Diego with a bond, with a satisfactory surety company, in a sum equal to seventy-five per cent of the amount of the contract price conditioned upon the faithful performance of said contract.

The successful bidder will also be required to furnish The City of San Diego with a labor and materialmen's bond with a satisfactory surety company in an amount not less than fifty per cent of the amount of the contract, conditioned upon the payment by said contractor of all material or supplies including teams and transportation furnished in the performance of the work contracted to be done by the terms of the contract, and for any work or labor done thereon of any kind.

All bidders are hereby referred to the drawings and specifications on file in the office of the Hydraulic Engineer, or in the office of the City Clerk of said City, for full details and description of said work.

The right is reserved to reject any and all bids.

INFORMATION FOR BIDDERS
PROPOSAL

To the Council of the
City of San Diego, California.

10/30, 1934.

Sirs:

Pursuant to the foregoing Notice Inviting Bids and Information for Bidders, the undersigned bidder herewith submits proposal on the schedule attached hereto and made part hereof, and binds himself on award by the Council under this proposal to execute in accordance with such award, a contract, with necessary bonds, of which this proposal and the said Notice Inviting Bids and Specifications shall be a part, for performing and completing said contract within the time required and at the prices named in the specifications and in the schedule hereto annexed.

The bidder furthermore agrees that, in case of his default in executing said contract with necessary bonds, the certified check accompanying this proposal and the money payable thereon shall become and remain the property of The City of San Diego.

This proposal is made with a full knowledge of the kind, quantities and quality of the work, and of the materials and plant required; and after complete, careful and independent examination and investigation of the site of the work, local conditions affecting the same, character of formation and materials to be encountered.

Signature M.H. Golden

(Corporate Seal)

Address 404 Calif. Bank Bldg.

Names of individual members of firm
or names and titles of all officers
of corporation and their addresses.

Blank lined area for listing names and addresses of firm members and officers.

Corporation organized under the laws of the State of

Affidavit as required by Section 6 of City Ordinance No. 5051 (Page 10 of printed copy) must be attached hereto.

AFFIDAVIT

State of California
County of San Diego } ss

M.H. Golden, being first
duly sworn, says that he is the bidder under the notice of
the Purchasing Agent hereto attached, inviting sealed proposals for EL CAPITAN RESERVOIR DAM
TUNNEL INNER LINING 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 said
M.H. Golden
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 30th day of October, 1934

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

Gladys Kelsey
Notary Public in and for the
County of San Diego
State of California

Seal

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.

Seal

Signatures and addresses of guarantors of bonds.

Standard Surety and
Casualty Company
of New York
by M.G. White
Attorney in Fact.

Dated
October 29th, 1934

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

SCHEDULE

EL CAPITAN RESERVOIR DAM TUNNEL INNER LINING

Item No.	Work or Material	Quantity and Price	Amount
1.	Concrete inner lining in place 2920 cubic yards at	Ten ⁰⁵ / ₁₀₀ dollars (\$ 10.05) per cubic yard (words)	\$ 29346 ⁰⁰
2.	Concrete in tunnel plug 300 cubic yards at	Twelve dollars (\$ 12 ⁰⁰) per cubic yard (words)	\$ 3600 ⁰⁰
3.	Cement in place in the work 4650 barrels at	Two ^{29 1/2} / ₁₀₀ dollars (\$ 2.295) per barrel (words)	\$ 10671 ⁷⁵
4.	Reinforcing steel in place in the work 142,000 pounds at	Four cents (\$.04) per pound (words)	\$ 5680 ⁰⁰
5.	Cement grout in place in the work 2,000 cubic feet at	Ninety cents (\$.90) per cubic foot (words)	\$ 1800 ⁰⁰
6.	2-inch grout and drain pipe in place in the work 500 linear feet at	Fifty cents (\$.50) per linear foot (words)	\$ 250 ⁰⁰
7.	Drill holes in concrete 100 linear feet at	Twenty cents (\$.20) per linear foot (words)	\$ 20 ⁰⁰
8.	2-inch Troiel, or equal, grout pipe in place in the work 700 linear feet at	Seventy five cents (\$.75) per linear foot (words)	\$ 525 ⁰⁰
9.	Cement passing 200 mesh sieve in place in the work 5 barrels at	Five dollars (\$ 5.00) per barrel (words)	\$ 25 ⁰⁰
10.	2-inch pipe caps in place in the work 20 caps each at	Fifty cents (\$.50) each (words)	\$ 10 ⁰⁰
11.	Wet sand blasting 25,000 square feet at	Five cents (\$.05) per square foot (words)	\$ 1250 ⁰⁰

FORM OF CONTRACT

THIS AGREEMENT, made and entered into at The City of San Diego, County of San Diego, State of California, this 20th day of November, 1934, by and between THE CITY OF SAN DIEGO, a municipal corporation in the County of San Diego, State of California, the party of the first part, acting by and through its Council, hereinafter sometimes designated as the City, and H. H. Golden

party of the second part, and hereinafter sometimes designated as the Contractor, WITNESSETH:

ARTICLE I. That for and in consideration of the covenants and agreements hereinafter contained on the part of the City, and the sums of money hereinafter designated to be paid to the contractor by the City, in manner and form as hereinafter in attached specifications provided, the contractor hereby covenants and agrees to and with the City, to furnish all labor, tools, appliances, equipment, plant and transportation, and any and all other expense necessary or incidental to the performance of certain work hereinafter specified, and to build, erect, construct, complete and install the EL CAPITAN RESERVOIR DAM TUNNEL INNER LINING in the County of San Diego, State of California being and as per Schedule all as more particularly and in detail set forth in those certain plans and specifications filed in the office of the City Clerk of The City of San Diego on the 15th day of October, 1934, marked, "Document No. 25725," and entitled "Notice Inviting Bids, Proposal, Drawings and Specifications,

EL CAPITAN RESERVOIR DAM TUNNEL INNER LINING

said plans consisting of three sheets, and said specifications consisting of sheets; true copies of the notice inviting bids, proposal of contractor, and plans and specifications are hereunto annexed marked "Exhibit A" by reference thereto incorporated herein and made a part hereof as though in this paragraph fully set forth.

ARTICLE II. In consideration of the construction and completion of the work by the contractor herein undertaken, according to the terms of this contract, and the faithful performance of all the obligations and covenants by the contractor herein undertaken and agreed upon, the contractor shall be paid as is provided in the specifications attached hereto.

ARTICLE III. The contractor hereby agrees that he will be bound by each and every part of the plans and specifications, and do and cause to be done all of said work and improvement as specified in the specifications and as shown upon the plans, as the same may be interpreted by the Hydraulic Engineer Division of Development and Conservation of the Water Department of said City, subject to written approval, by the City Manager and by The Council evidenced by Resolution.

ARTICLE IV. No interest in this agreement shall be transferred by the Contractor to any other party, and any such transfer shall cause annulment of this contract, so far as The City of San Diego is concerned. All rights of action, however, for any breach of this contract are reserved to said City.

ARTICLE V. The Contractor shall keep harmless and indemnify The City of San Diego, its officers and agents, from all damage, cost or expense that arises or is set up for infringement of patent rights of any one for use by The City of San Diego its officers or agents, of articles supplied by the Contractor under this contract, of which he is not patentee, or which he is not entitled to use or sell.

ARTICLE VI. The Contractor further agrees and covenants that neither the Contractor, nor any subcontractor doing work or performing labor pursuant to the terms of this contract, who directs or controls the work of any laborer, workman or mechanic upon any of the work provided for in this contract to be done, shall require or permit any such laborer, workman or mechanic to labor more than eight (8) hours during any one calendar day, in violation of the provisions of the Charter of The City of San Diego and that the Contractor shall forfeit as a penalty to the City Ten Dollars (\$10.00) for each laborer, workman or mechanic employed by the Contractor or by any subcontractor upon any of the work by this contract

provided to be done 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 the provisions of said Charter; and that the Contractor will not knowingly employ or cause or allow to be employed upon any of the work provided in this contract to be done by any alien contrary to the provisions of said Charter and/or of the Public Work Alien Employment Act of the State of California (Statutes of 1931, Chapter 398) or contrary to Section 197 of the Charter of the City of San Diego and that the Contractor shall forfeit as a penalty to the City Ten Dollars (\$10.00) for each alien knowingly employed upon any of the work provided in this contract to be done, by the Contractor or any subcontractor, contrary to the provisions of said Charter and/or said statute, for each calendar day, or portion thereof, during which such alien is permitted or required to labor in violation thereof.

ARTICLE VII. The Contractor further agrees and covenants that in the performance of the work contemplated by this contract he will conform to, abide by and observe all of the requirements included in the following specific conditions:

1. **Labor Preferences.**—In the employment of labor, preference shall be given, when they are qualified, to ex-service men with dependents, and then in the following order (a) to citizens of the United States who are bona fide residents of the City of San Diego or who filed declaration of intention to become citizens, and (b) to citizens of the United States who are residents of the State of California or who have filed declaration of intention to become citizens.

2. **Convict Labor.**—No convict labor shall be employed on the work and no materials manufactured or produced by convict labor shall be used on the work.

3. **Forty-Hour Week.**—Except in executive, administrative and supervisory positions, so far as practical and feasible, in the opinion of the engineer, no individual directly employed on the work shall be permitted to work more than forty hours in any one week.

4. **Wages.**—(a) A clear, legible statement of all minimum wage rates to be paid to the several classes of labor, workmen and mechanics to be employed on the work shall be posted in a prominent and easily accessible place at the site of the work, and the contractor and all subcontractors shall keep a true and accurate record of the hours worked each day by each employee, and the wages paid to each employee, and shall furnish the engineer with a sworn statement thereof on demand.

(b) Designated minimum rates of wages shall not be used in discriminating against assistants, helpers, apprentices and serving laborer who work and serve skilled journeymen mechanics and who are not be termed as "laborers."

5. **Human Labor.**—The maximum of human labor shall be used in lieu of machinery wherever practicable and consistent with sound economic and public advantage; and to the extent that the work may be accomplished at no greater expense by human labor than by the use of machinery.

6. **Accident Prevention.**—The contractor shall at all times exercise reasonable precautions for the safety of employees on the work and shall comply with all applicable provisions of the Federal, State and Municipal safety laws and building and construction codes. All machinery and equipment and other physical hazards shall be guarded in accordance with safety codes approved by the American Standards Association, unless such codes are incompatible with Federal, State or Municipal laws or regulations.

7. **Materials.**—No machinery or materials shall be used or employed in connection with such construction work except such as shall have been produced or manufactured in the United States or its territories.

8. **Local Preference.**—So far as practicable, preference shall be given to the use of locally produced materials if such does not involve higher cost, inferior quality or insufficient quantities, subject to the determination of the engineer.

ARTICLE VIII. The contractor further agrees that in the performance of the work contemplated by this contract, he will conform to and abide by all the requirements and provisions of the Charter of The City of San Diego relating to the rate of wages to be paid on public work and that not less than the prevailing rate of per diem wages hereinafter specified shall be paid to all laborers, workmen and mechanics employed by the Contractor, or any subcontractor, in the performance of the work contemplated by this contract; and that the contractor shall forfeit as a penalty to the City ten dollars (\$10.00) for each laborer, workman or mechanic employed, for each calendar day, or portion thereof, such laborer workman or mechanic is paid less than the following specified rate for any work done under this contract by the contractor, or by any subcontractor:

Classification	Per Diem Wage of 8 Hours
Auto Mechanics	\$6.40
Blacksmiths	6.40
Blacksmith Helpers	5.00
Carpenter Foremen	9.00
Carpenters	8.00
Carpenter Apprentices	5.00
Clerks	5.00
Cement Finishers	7.00
Compressor Operators	6.00
Concrete Finishers	7.00
Concrete Finisher Helpers	5.00
Concrete Foremen	6.00
Concrete Form Builders	8.00
Concrete Spreaders	5.50
Concrete Tampers	5.00
Concrete Mixermen	8.00
Cooks	5.50
Crane Operators	7.00
Drill Sharpeners	6.00
Electricians	8.00
Electrician Helpers	6.50

Classification	Per Diem Wage of 8 Hours
Flunkeys	\$5.00
General Foremen	9.00
Laborers	5.00
Materialmen	5.00
Mechanics	6.40
Mechanics Helpers	5.00
Mechanic Trouble Shooters	6.00
Pump Men	5.00
Reinforcing Steel Workers	8.00
Reinforcing Steel Foremen	9.00
Superintendents	9.00
Tractor Operators over 50 H.P.	7.20
Tractor Operators under 50 H.P.	6.80
Timekeepers	5.00
Truck Drivers under 15,500 pounds	5.50
Truck Drivers over 15,500 and under 25,000 pounds	6.00
Truck Drivers over 25,000 pounds	6.50
Watchmen	4.50
Other classes not less than	5.00

For over time work when the same is permitted by law, one and one-half times the foregoing rates. For work performed on Sundays and legal holidays as set forth in Section 10 of the Political Code of the State of California, one and one-half times the above rates.

ARTICLE IX. It is mutually agreed between the parties hereto that in no case unauthorized by the Charter of The City of San Diego or the general laws in effect in said City, shall said City, or any department, board or officer thereof be liable for any portion of the contract price.

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.

Rutherford B. Irons

By.....

Will H. Cameron

Harry Warburton

Dan Rossi

Members of the Council.

H. H. Golden

Contractor.

ATTEST:

(SEAL)

Allen H. Wright

City Clerk.

ATTEST:

20th

(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 day of....., 19.....

C. L. Byers

City Attorney of The City of San Diego.

CERTIFICATE OF COMPLIANCE WITH EXECUTIVE ORDER
OF THE PRESIDENT OF THE UNITED STATES, DATED
MARCH 14, 1934, AND ENTITLED, "GOVERNMENT CON-
TRACTS AND CONTRACTS INVOLVING THE USE OF GOV-
ERNMENT FUNDS".

IT IS HEREBY CERTIFIED that the undersigned is comply-
ing with and will continue to comply with each approved code
of fair competition to which he is, or may become, subject;
and that The City of San Diego shall have the right to cancel
this contract for failure to comply with this provision
thereof, and thereafter make open market purchases or have
the work called for by the contract otherwise performed, at
the expense of the contractor.

THE UNDERSIGNED FURTHER CERTIFIES that he will not
accept or purchase for the performance of this work or enter
into any subcontracts for any articles, materials or supplies,
in whole or in part produced or furnished by any person who
shall not have certified that he is complying with and will
continue to comply with each code of fair competition which
relates to such articles, materials or supplies; or in case
there is no approved code for the whole or any portion thereof,
then, to that extent, with an agreement with the President
under Section(a) of the National Industrial Recovery Act.

WE HEREBY FURTHER AGREE that whenever a dispute shall
arise, between The City of San Diego and the undersigned,
supplier of materials, or other person, as to compliance with
any code of fair competition or with an agreement with the
president under Section 4(a) of the National Industrial Re-
covery Act in connection with this contract, subcontract or
purchase order mentioned herein, the Administrator for Indus-
trial Recovery or such agency as he shall designate shall
decide such dispute; and for the purposes of action under
this executive order it is agreed that such decision shall be
final and conclusive; and it is further agreed that the de-
termination of such agency of the United States shall be
effective for all purposes, pending such final decision.

Dated 10/30, 1934.

(Signed) M. H. GOLDEN

STATE OF CALIFORNIA }
COUNTY OF SAN DIEGO }

S.S. On this 20th day of November in the year one thousand nine hundred and thirty-four, before me HELEN C. WALLACE, a Notary Public in and for the said San Diego County, State aforesaid, residing therein, duly commissioned and sworn personally appeared M. G. WHITE known to me to be the Attorney in Fact of STANDARD SURETY & CASUALTY COMPANY OF NEW YORK, the company described in and that executed the within and foregoing instrument and known to me to be the person who executed the said instrument on behalf of the said company, and he duly acknowledged to me that such company executed the same.

(SEAL)

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

Helen C. Wallace
Notary Public in and for the County of San Diego
State of California.
My commission expires March 12, 1938

FORM OF FAITHFUL PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, That M. H. Golden

as principal, and Standard Surety & Casualty Company

a corporation organized and existing under and by virtue of the laws of the State of New York

as surety, are held and firmly bound unto The City of San Diego, a municipal corporation in the County of San Diego, State of California, in the sum of thirty five thousand eight hundred and eighty three and 11/100 Dollars

(\$ 39,883.11) (not less than seventy-five per cent of estimated contract price), lawful money of the United States of America, to be paid to The City of San Diego, for the payment of which, well and truly to be made, we hereby bind ourselves, our heirs, administrators, executors, successors and assigns, jointly and severally firmly by these presents.

Signed by us and dated this 20th day of November 19 36

The condition of the above and foregoing obligation is such that whereas, the said principal has entered into the annexed contract with The City of San Diego to furnish all materials, and all labor, tools, appliances, transportation and other expenses necessary or incidental to the construction, completion and instal-

lation of El Capitan Reservoir Dam Tunnel Inner Lining in the County of San Deigo, State of California, all as more particularly and in detail shown upon those certain plans and specifications filed in the office of the City Clerk of The City of San Diego on the 15

day of October, 19 34, marked Document No. 209826 and endorsed Notice Inviting Bids, Proposal, Drawings and Specifications El Capitan Reservoir Dam Tunnel Inner Lining; said plans consisting of three sheets,

and said specifications consisting of forty two sheets, copies of which plans and specifications are attached to said contract and made a part thereof as in said contract provided; and reference is hereby made to said contract and to said plans and specifications for a particular description of the work to be done.

Now, therefore, if the said principal shall faithfully perform the said contract, then the above obligation to be void, otherwise to remain in full force and effect.

IN WITNESS WHEREOF the said principal and surety have caused these presents to be executed and their corporate names and seals to be hereunto attached by their proper officers, thereunto duly authorized, the day and year first hereinabove written.

M. H. Golden

Principal.

ATTEST:

By Standard Surety & Casualty

Company of New York

(SEAL)
ATTEST:

Surety.

H. O. White Attorney in Fact

By

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 20th day of November, 1934

C. L. Myers

City Attorney of The City of San Diego.

By H. B. Daniel, Deputy

Approved by a majority of the members of the Council of The City of San Diego this 22

day of November, 1934

Rutherford B. Irons

Will H. Cameron

Harry Harburton

Don Rossi

Members of the Council.

FORM OF LABOR AND MATERIALMEN'S BOND

KNOW ALL MEN BY THESE PRESENTS, That H. H. Golden

as principal, and Standard Surety & Casualty Company of New York

a corporation organized and existing under and by virtue of the laws of the State of New York,

as surety, are held and firmly bound unto The City of San Diego, a municipal corporation in the County of San Diego, State of California, in the sum of Twenty six Thousand Five Hundred Eighty eight & 07/100 Dollars (\$ 26508.87)

(not less than fifty per cent of estimated contract price), lawful money of the United States of America, to be paid to The City of San Diego for the payment of which, well and truly to be made, we hereby bind ourselves, our heirs, administrators, executors, successors and assigns jointly and severally, firmly by these presents.

Signed by us and dated this 20th day of November, 1934.

The condition of the above and foregoing obligation is such that Whereas, the said principal has entered into the annexed contract with The City of San Diego to furnish all materials, and all labor, tools, appliances, transportation and other expenses necessary or incidental to the construction, completion and installation of El Capitan Reservoir Dam Tunnel Inner Lining in the County of San Diego, State of California, all as more particularly and in detail shown upon those certain plans and specifications

filed in the office of the City Clerk of said The City of San Diego on the 15 day of October,

1934, marked Document No. 209826, and endorsed Notice Inviting Bids, Proposal Drawings and Specifications El Capitan Reservoir Dam Tunnel Inner Lining

said plans consisting of Three sheets and said specifications consisting of Twenty six sheets, copies of which plans and specifications are attached to said contract and made a part thereof as in said Contract provided; and reference is hereby made to said contract and to said plans and specifications for a particular description of the work to be done.

And whereas, the aforesaid penal sum of Twenty six thousand Five Hundred Eighty eight & 07/100 Dollars (\$ 26508.87), being not less than one-half of the total amount payable by the terms of said contract, is intended and is hereby made to inure to and for the use of any and all persons, companies or corporations who perform labor on or furnish materials to be used in the said work;

NOW, THEREFORE, should the above bounden principal well and truly pay or cause to be paid all claims against H. H. Golden

for such labor or materials, supplies, teams, or transportation, or either, or both, so performed or furnished, as the case may be then this obligation to be null and void; otherwise to be and remain in full force and effect and the same is hereby expressly made to inure to the benefit of any and all persons who perform labor upon or furnish materials, supplies, teams or transportation to be used in the work described in said contract, or in any modification thereof; and any and all such persons shall have and are given a right of action to recover upon this bond against the said principal and Surety, or either of them, in any suit brought to foreclose mechanics' liens, which may be filed by such persons or either of them, upon the property mentioned in said contract, or in a separate suit brought upon this bond, and may recover in such action or actions, the value of such labor done or materials, supplies, teams or transportation furnished, or both, together with a reasonable attorney's fee to be fixed by the Court, not exceeding, however, in the aggregate of said recoveries, the amount of this bond as above specified.

IN WITNESS WHEREOF, the said principal and surety have caused these presents to be executed and their corporate names and seals to be hereunto attached by their proper officers thereunto duly authorized, the day and year first hereinabove written.

H. H. Golden

ATTEST: _____ Principal.

By **Standard Surety &**

ATTEST: **(SEAL)** _____ **Casualty Company**

Surety.

By **H. G. White**
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 **20th** day of **November**, 19**34**

C. L. Byers

City Attorney of The City of San Diego.

By **H. D. Daniel, Deputy**

Approved by a majority of the members of the Council of The City of San Diego this **22** day of **November**, 19**34**

THE CITY OF SAN DIEGO.

Rutherford B. Irons

By _____

Will H. Cameron

Harry Warburton

Dan Rossel

Members of the Council.

STATE OF CALIFORNIA }
COUNTY OF SAN DIEGO }

S.S. On this 20th day of November in the year one thousand nine hundred and thirty-four, before me HELEN C. WALLACE, a Notary Public in and for the said San Diego County, State aforesaid, residing therein, duly commissioned and sworn, personally appeared M.G.WHITE known to me to be the Attorney in Fact of STANDARD SURETY & CASUALTY COMPANY OF NEW YORK, the company described in and that executed the within and foregoing instrument, and known to me to be the person who executed the said instrument on behalf of the said company, and he duly acknowledged to me that such company executed the same. IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, at my office in the said County of San Diego, the day and year in this certificate first above written.

(SEAL)

Helen C. Wallace
Notary Public in and for the County of San Diego,
State of California.
My commission expires March 12, 1938

SPECIFICATIONS

GENERAL CONDITIONS

1. **Form of Proposal and Signature.**—The proposal shall be made on the form provided therefor and shall be enclosed in a sealed envelope marked and addressed as required in the Information for Bidders. The bidder shall state in words and figures the unit prices or the specified sums, as the case may be, for which he proposes to supply the materials or machinery and perform the work required by these specifications. If the proposal is made by an individual it shall be signed with his full name, and his address shall be given; if it is made by a firm it shall be signed with the copartnership name by a member of the firm, who shall also sign his own name, and the name and address of each member and the address of the firm shall be given; and if it is made by a corporation, it shall be signed by an officer with the corporate name attested by the corporate seal, and the names, addresses and titles of all officers of the corporation and the address of the corporation shall be given. No telegraphic proposal or telegraphic modification of a proposal will be considered.

2. **Proposal.**—Blank spaces in the proposal should be properly filled. The phraseology of the proposal must not be changed, and no additions should be made to the items mentioned therein. Unauthorized conditions, limitations, or provisos attached to a proposal will render it informal and may cause its rejection. Alterations by erasure or interlineation must be explained or noted in the proposal over the signature of the bidder. If the unit price and the total amount named by a bidder for any item do not agree, the unit price alone will be considered as representing the bidder's intention. A bidder may withdraw his proposal before the expiration of the time during which proposals may be submitted, without prejudice to himself, by submitting a written request for its withdrawal to the officer who holds it. No proposals received after said time or at any place other than the place of opening as stated in the Notice Inviting Bids will be considered. Bidders, their representatives, and other 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 Inviting Bids, 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 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. This form may be examined at the offices of the City Clerk, or copies will be furnished on request to parties proposing to bid. 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 Notice Inviting Bids, Information for Bidders, Proposal, General Conditions, and Detail Specifications will be incorporated in the contract. A corporation to which an award is made will be required, before the contract is finally executed, to furnish evidence of its corporate existence and evidence that the officer signing the contract and bond for the corporation is duly authorized to do so.

5. **Contractor's Bonds.**—Unless another sum is specified in the Information for Bidders, the contractor shall furnish a labor 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.

The contractor shall also furnish a faithful performance bond in an amount not less than seventy-five 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 die, or, 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.**—No interest in this agreement shall be transferred to any other party, and any such transfer shall cause annulment of the contract so far as The City of San Diego is concerned; all rights of action, however, for breach of this contract are reserved to The City of San Diego.

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. Work, material, or machinery not in accordance with these specifications, in the opinion of the engineer, shall be made to conform thereto. Unsatisfactory material will be rejected, and, if so ordered by the engineer, shall, at the contractor's expense, be immediately removed from the vicinity of the work.

11. **Delays.**—If any delay is caused the contractor by specific orders of the engineer to stop work, or by the performance of extra work ordered by the engineer, or by the failure of 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 of the contract period no liquidated damages shall accrue for a period equivalent to such delay.

12. **Suspension of Contract.**—If the contractor fails to begin the delivery of the material, or to commence work as provided in the contract, or fails to make delivery of material promptly as ordered, or to maintain the rate of delivery of material or progress of the work in such manner as in the opinion of the engineer will insure a full compliance with the contract within the time limit, or if in the opinion of the engineer the contractor is not carrying out the provisions of the contract in their true intent and meaning,

written notice will be served on him to provide within a specified time for a satisfactory compliance with the contract, and if he neglects or refuses to comply with such notice the engineer may with the written consent of the City Manager and consent of the Council evidenced by resolution, suspend the operation of all or any part of the contract, or he may in his discretion after such notice perform any part of the work or purchase any or all of the material included in the contract or required for the completion thereof without suspending the contract. Upon suspension of contract by the engineer, he may, in his discretion, take possession of all or any part of the machinery, tools, appliances, animals, materials, and supplies used in the work covered by the contract or that have been delivered by or on account of the contractor for use in connection therewith, and the same may be used either directly by The City of San Diego or by other parties for it, in the completion of the work suspended; or The City of San Diego may employ other parties to perform the work, or may substitute other machinery or materials purchase the materials contracted for in such manner as it may deem proper or hire such force and buy such machinery, tools, appliances, animals, materials and supplies at the contractor's expense as may be necessary for the proper conduct and completion of the work. Any cost to The City of San Diego in excess of the contract price arising from the suspension of the contract, or from work performed or purchases made by The City of San Diego either before or after suspension, and required on account of the failure of the contractor to comply with his contract or the orders of the engineer issued in pursuance thereof, will be charged to the contractor and his sureties, who shall be liable therefor. A special lien to secure the claims of The City of San Diego in the event of suspension of the contract is hereby created against any property of the contractor taken into the possession of The City of San Diego under the terms hereof, and such lien may be enforced by a sale of such property under the direction of the Council of The City of San Diego, and the proceeds of the sale, after deducting all expenses thereof, and connected therewith, shall be credited to the contractor. If the net credits shall be in excess of the claims of The City of San Diego against the contractor the balance will be paid to the contractor or his legal representatives. If, in the opinion of the engineer, an emergency exists for the furnishing of certain material or the performance of certain work in order to insure compliance with the terms of the contract and if the contractor fails to furnish such material or to perform such work within a reasonable time fixed by written notice from the engineer to the contractor, then the engineer shall have the power to furnish such material or to perform such work at the expense of the contractor and his sureties, who shall be liable therefor. In the determination of the question whether there has been such non-compliance with the contract as to warrant its suspension or the furnishing of material or the performance of work by The City of San Diego as herein provided, the decision of the engineer when approved by the City Manager and by the Council evidenced by resolution, shall be final and binding upon both parties. Suspension of the contract, or any part thereof, shall operate only to terminate the right of the contractor to proceed with the work covered by the contract or the suspended portions thereof. The provisions of the contract permitting The City of San Diego to make changes and to make proper adjustment of accounts to cover any increase or decrease of cost on account of such changes, and all other stipulations of the contract except those giving the contractor the right to proceed with work on the items covered by the suspension, shall be and remain in full force and effect after such suspension and until the contract shall have been completed and final payment or final adjustment of accounts made.

13. **Changes.**—The engineer may, without notice to the sureties on the contractor's bonds, make changes: (a) in the designs or 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 canals, dams and other 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 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.

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 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.

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 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 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 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, shall have at all times access to all parts of the shop where such material under his inspection is being manufactured. Work or material that does not conform to the specifications, although accepted through oversight or otherwise, may be rejected at any state of the work. Whenever the contractor on installation or construction is permitted or directed to do night work or to vary the period during which work is carried on each day, he shall give the engineer due notice so that inspection may be provided. Such work shall be done without extra compensation and under regulations to be furnished in writing by the engineer.

18. **Contractor's Financial Obligations.**—The contractor shall promptly make payments to all persons supplying labor and materials in the execution of the contract, and a condition to this effect shall be incorporated in the contractor's bond.

19. **Experience.**—Bidders, if required, shall present satisfactory evidence as to their responsibility and that they are fully prepared with necessary capital, machinery and material to begin the work promptly and to conduct it as required by these specifications.

20. **Specifications and Drawings.**—The contractor shall keep on the work a copy of the specifications and drawings and shall at all times give the engineer access thereto. Any drawings or plans listed in the detail specifications shall be regarded as part thereof and of the contract. Anything mentioned in these specifications and not shown on the drawings or shown on the drawings and not mentioned in these specifications shall be of like effect as though shown or mentioned in both. The engineer will furnish from time to time such detail drawings, plans, profiles, and information as he may consider necessary for the contractor's guidance, unless otherwise provided in the 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 of the terms of his contract. The accuracy of the interpretation of the facts disclosed by borings or other preliminary investigations is not guaranteed. Each bidder or his representative should visit the site of the work and familiarize himself with local conditions.

22. **Data To Be Furnished By The Contractor.**—The contractor shall furnish the engineer reasonable facilities for obtaining such information as he may desire respecting the character of the materials and the progress and manner of the work, including all information necessary to determine its cost, such as the number of men employed, their pay, the time during which they worked on the various classes of construction, etc. 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.

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 Indemnity Insurance.**—The contractor shall furnish The City of San Diego with a certificate of the insurance carrier with whom said contractor is carrying a policy of insurance, acknowledging full liability, and covering all employees connected with the work specified in this contract, and insuring said contractor against loss or liability by reason of the Workmen's Compensation Insurance and Safety Act of 1917 and amendments thereto, said certificate of the insurance carrier to bear the date of the expiration of said policy.

39. **Compliance With Laws.**—The contractor shall conduct the work in compliance with all laws and regulations of the United States, 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.

DETAIL SPECIFICATIONS

Special Conditions

40. REQUIREMENTS.- It is required that there be constructed and completed in accordance with the drawings herein below listed and these specifications the El Capitan Reservoir Dam Outlet Tunnel Inner Lining from tunnel station 1+31 to 7+00. The work is located on the San Diego River about eight miles north-easterly from the town of Lakeside. The latter is about 21 miles northeast from the City of San Diego and is the terminal of the Lakeside branch of the San Diego & Arizona Railway.

41. LIST OF DRAWINGS.-

WD-285 Geography

WD-512 Plan and Section of Outlet Tunnel

WD-513 Tunnel Plug and Inner Lining.

42. COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK.-

Work shall be commenced by the contractor within ten (10) days after the execution of the contract on behalf of the City of San Diego and shall be completed on or before January 15, 1935. If the City of San Diego occupies more than fifteen days time after the opening of bids in awarding and executing contract, exclusive of the time occupied in transmitting contract and bonds to and from the contractor and in the execution of such papers by him, the contractor will be entitled to an extension of time for a period equivalent to the excess time so used by the City of San Diego. The contractor shall at all times during the continuance of this contract prosecute the work with such force and equipment as, in the judgment of the engineer, are sufficient to complete it within the specified time.

43. 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 one hundred dollars per day will be made for each and every day, including Sundays and holidays, that such work remains uncompleted after the date required for completion. The said amount is 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 employees after the expiration of the time for completion, and on account of the values 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.

44. 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 employees, and officials, and official guests of the City of San Diego, single meals at not more than fifty cents per meal. 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.

45. WATER FOR PLANT, CONSTRUCTION AND DOMESTIC USE.- Water for all of the mechanical, construction and domestic requirements of the work in so far as it is available in the river channel or bed, shall be obtained therefrom, and there shall be pumped and stored a sufficient quantity at an elevation which will insure at all times a continuous adequate supply under ample pressure for the work.

46. SHIFTS OF LABOR.- There shall be employed upon the work three daily shifts of labor when required by the engineer.

47. REMOVAL OF TEMPORARY WORK.- All temporary structure shall be removed from the work at the contractor's own expense whenever they have served their purpose or upon completion of the work but not until permitted by the engineer. Any ramp or filling constructed at the approach of the lower end/tunnel shall be completely removed by the contractor at his own expense and he shall leave the work in neat workmanlike order.

48. CONSTRUCTION PROGRAM.- The construction progress shall at all times be subject to the approval of the engineer. The capacity of the construction plant, sequence of operation and method of operation shall be such as will insure the completion of the work in the time specified. The contractor shall not interfere in any way with other contractors on the work. The work shall be commenced at the upstream end and in general shall progress toward the downstream end. Work may be carried on in several places at the same time. There shall be provided by the contractor an ample number of electric lights to effectively illuminate all work. The contractor shall at his own expense provide all necessary protection to his work on account of water entering the tunnel from any source whatsoever. Dependent upon

conditions, permission may be given by the engineer to begin concreting on the tunnel plug when at least 150 feet of completed lining has been constructed adjacent to the tunnel plug, but in no case shall concreting operations on the tunnel plug be started until express permission is given by the engineer. The contractor shall clean up the entire length of the tunnel upon completion of work.

49. ACCESSIBILITY.- The lower half of the tunnel plug near the upstream end may be completed to about the spring line by dam contractor H.W. Mohl and T.E. Connelly before this contract for the inner lining and completion of plug is commenced. This will necessitate the use of the downstream end of the tunnel to gain ingress and egress for all labor, materials and necessary equipment. It may be necessary, when the tunnel plug is completed to its full height, for the contractor to provide the necessary ventilation. Conditions permitting, assistance may be given by the engineer in allowing the opening of the valves in the outlet tower, thus creating a draft from the outlet pipes up the tower. Any expense in connection with the ventilation or providing ingress or egress to the tunnel shall be included in the unit price bid for the concrete in place.

50. 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. 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 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.

CONCRETE

UNDER THIS HEAD IS INCLUDED ALL CONCRETE WORK INVOLVED AND INCLUDED IN THE CONSTRUCTION OF INNER LINING AND COMPLETION OF TUNNEL PLUG.

51. CONSTRUCTION GENERAL. - The order of the construction of the several portions of the inner lining and completion of tunnel plug shall be subject to the approval of the engineer. All concrete shall be carefully finished to the lines and dimensions shown on the drawings or as prescribed by the engineer. It is the intention under these specifications to provide for an inner lining in the present outlet tunnel lining which will be to the dimensions shown on the drawings. The minimum thickness of inner lining shall be 18" and variations in the inside diameter of the innerlining may be necessary to accomplish this minimum thickness of lining required by these specifications. The beginning of concreting operations at any stage of the work will not be permitted unless the machinery and all work is in proper order to complete the unit of pour. Aggregates must be on hand and properly graded and comply with the specifications before concreting may start. Aggregates which do not comply with the specifications will be rejected and the contractor will not be entitled to compensation on account thereof or on account of time wasted while waiting for proper materials to be made available.

CEMENT. - All cement used on this work shall be of a standard brand Portland cement which has been successfully used in similar construction for not less than three years. It must conform to the Standard Specifications and Test for

Portland Cement, Serial Designation: C 9-30, with subsequent amendments, of the American Society for Testing Materials, and shall be delivered in good order in suitable sacks or barrels with the brand and name of the manufacturer plainly marked thereon. All cement proposed for use will be tested by the engineer and the contractor shall make ample time allowance for such testing in planning deliveries. Any cement failing to meet the requirements of the tests provided by these specifications or which has hardened due to exposure or other causes, or which has been otherwise damaged from any cause, will be rejected and must be immediately removed from the site of the work. One sack of cement shall be considered equivalent to one cubic foot by volume. The contractor shall furnish and maintain at the work suitable weatherproof warehousing for storing cement 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. When emptying sacks they shall be thoroughly shaken so as to obtain therefrom the maximum amount of cement. Cement in place in the work will be paid for in accordance with the unit price bid, which price shall include hauling to the work and all handling and protection. Cement sacks or barrels may be retained by the contractor.

53. CONCRETE COMPOSITION.- Concrete shall be composed of cement sand and broken rock or clean gravel graduated as to size as hereinafter provided and 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 to about two parts of sand and about four parts of broken stone or gravel. These proportions will be modified by the engineer as the character of the requirements and 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.

54. SAND.- Sand used for concrete shall produce a 1:3 mortar having a strength about equal to the strength of a 1:3 mortar made with Standard Ottawa sand. Sand, if satisfactory for concrete shall be obtained from natural deposits and the particles shall be hard, dense, 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. The cost of all operations connected with furnishing and using of sand in the work shall be included in the price bid for concrete.

55. BROKEN ROCK AND GRAVEL.- Broken rock or gravel for concrete must be hard, dense, strong, durable rock fragments or pebbles and shall conform in all respects to Standard Specifications edited to May 1931 of the California Division of Highways. The sizes shall be as follows:

- (1) Rock passing a one and one-half inch ring and retained on a three-quarters inch ring.
- (2) Rock passing a three-quarters inch ring and retained on a three 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 Standard Specifications edited to May 1931 of the California

Division of Highways. Each of the aggregate sizes shall be predominantly round rock. The engineer will, from time to time, determine the exact proportions of each of the various sizes of assembly in a batch to be mixed into concrete, the object being to secure the densest practicable mixture. In case there is a shortage of any one size, it shall be promptly supplied by the contractor and he shall not be entitled to payment for surplus of any graded size of material. Rock shall be obtained from gravel pits to be approved by the engineer. The cost of all sites, material and operations connected with the furnishing and using of rock or gravel aggregate for concrete required in the work shall be included in the price bid per cubic yard for concrete in place.

56. WATER.- The water used in mixing concrete must be 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.

57. MIXING.- Cement, sand 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. 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 means which will secure exact results. Proper means shall be provided to make adjustments required on account of

variation in grading or moisture content of the 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 give the concrete a consistency ordinarily designated as "workable". Care shall be taken that a uniform mixture of the concrete is at all times maintained. The contractor shall have a responsible foreman continuously in charge of each concrete gang who shall see that all instructions issued by the engineer as to the matter of proportioning, mixing, handling and placing concrete are carried out.

58. PLACING.- Concrete shall be placed in the work before the cement takes its initial set. No concrete shall be placed in water. Surfaces on or against which concrete is to be placed must be scrupulously clean and shall have been thoroughly wetted and kept wet for two hours prior to placing concrete against them. 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 new concrete surfaces upon which or against which concrete is to be placed and to which new concrete is to adhere, shall be roughened, laitance removed, thoroughly cleaned and wet before the concrete is deposited. On account of the necessity for a dense, strong concrete, it shall be placed in sections as indicated on the drawings. Thorough tamping and

ramming by means of suitable tools so as to secure a dense mass will be required and all necessary provisions for operation and equipment to obtain such results shall be made by the contractor and shall be satisfactory to the engineer. The concrete shall be deposited as closely as possible to its final location in the lining. Depositing of concrete and permitting it to drop around the forms will not be permitted. Pneumatic placement will not be permitted except in the arch crown section. 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. Placing and tamping shall be done with a special view to obtaining the densest concrete and smoothest surfaces practicable. No concrete shall be placed except in the presence of a duly authorized inspector. No concrete will be permitted to be placed unless properly proportioned aggregates are available and the contractor is ready in all respects to proceed. The addition of water over and above that required for the mix will not be permitted. Concrete shall be deposited continuously and as rapidly as practicable until the unit of operation approved by the engineer is complete.

59. FINISHING.- The surface of concrete finished against forms must be smooth, free from projections and thoroughly filled with mortar. Immediately upon the removal of forms all voids shall be neatly filled with cement mortar, irregularities in exposed surfaces shall be removed and minor imperfections of finish shall be smoothed to the satisfaction of the engineer. The cost of the work shall be included in the unit price bid for concrete.

60. FORMS.- Forms to confine the concrete and shape it to the required lines shall be used and shall be sufficiently tight to prevent leakage of mortar and of sufficient strength and rigidity to hold the concrete and to withstand the necessary pressure and tamping without deflection from the prescribed lines. The contractor shall provide steel or timber circular inside ribs for supporting the lagging of the forms. The lagging of the forms must be surfaced, sized or matched and oiled and shall be squared at the ends of the lagging. It is the intention under these specifications that the lagging will be installed immediately in advance and only a few inches above where the concrete is being placed so that proper inspection and tamping of the concrete may be had. All forms shall be removed by the contractor but not until the engineer gives permission. Forms may be used repeatedly provided they are maintained in serviceable condition and thoroughly cleaned and painted with lubricating oil before being used again. The cost of all forms, their use and removal from the work shall be included in the unit price bid for concrete.

61. SUPPORTS FOR FORMS.- The contractor shall provide and install the necessary shores and supports to properly hold the inside arched rib forms to the lines and grades directed by the engineer, and suitable cone washers or other means satisfactory to the engineers shall be provided to hold forms rigidly in place to specified line, thickness of wall and grade. 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 conditions to be finished as required. Supports for forms may not extend thru the tunnel

lining nor to steel. The cost of supporting forms shall be included in the unit price bid for concrete.

62. REINFORCING STEEL.- Reinforcing steel shall be deformed or plain bars from new billet stock of structural grade in accordance with Standard Specifications for Billet-steel concrete reinforcement bars, Serial Designation: A 15-14 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 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.

63. PREPARATION OF EXISTING SURFACE.- The existing surface of tunnel lining where new concrete is to be placed against it shall be thoroughly cleaned by means of wire brushes and water

and all laitance, lime and deposits of foreign material of any kind shall be removed by means of wet sand blast. The top of tunnel plug where new concrete is to be placed shall have all laitance removed and be scrupulously clean. The entire surface of present lining against which tunnel plug concrete is to be placed shall be wet sand blasted. The cost of all work in preparing the surface against which concrete is to be placed shall be included in the unit price bid for concrete, excepting wet sandblasting which will be paid for as a separate item.

64. WATER CONTROL.- The contractor shall take all necessary precautions and at his own expense control all back water, seepage or water from any source whatsoever. All water shall be kept from contact with new concrete until it is at least forty-eight hours old. All seepage and running water within the limits of the inner lining under this contract shall be piped out through the forms in a manner satisfactory to the engineer. It should be particularly noted that the ground water level at the exit portal of the tunnel and the water level in the reservoir may influence the amount of water now in evidence in the tunnel and elsewhere.

65. CONSTRUCTION JOINTS.- Wherever shown on the drawings or directed by the engineer, vertical or horizontal construction joints shall be formed in the concrete lining. Suitable leak tight vertical bulkheads shall be provided, set at right angles to the axis of the tunnel between each section of concrete inner lining to be placed. Continuous keyways 2" deep by 6" wide shall be left in all construction joints. The entire face of each vertical construction joint shall be painted with one coat of asphaltic paint before the adjacent concrete is placed

against it. The length of these sections between bulk heads shall be such that a continuous operation of placing concrete may be had between them and between horizontal construction joints shown on the drawings. Sloping construction joints with two 6" x 24" keyways transverse to tunnel axis shall be constructed ^{in the plug} /as shown on the drawing or as directed by the eningeer. All cost in connection with construction joints shall be included in the unit price bid for concrete.

66. BONDING.- The surface of new concrete shall be kept free from deleterious material and shall be thoroughly cleaned by jets of water and compressed air, both under relatively high pressure, and metal brushes or other approved methods before pouring concrete thereon. Horizontal or sloping surfaces of the concrete wherever required by the engineer shall be flushed with cement grout immediately before depositing new concrete. All cost in connection with bonding shall be included in the unit price bid for concrete.

67. CURING CONCRETE.- Concrete shall be kept moist to the satisfaction of the engineer and the cost thereof shall be included in the unit price bid for concrete.

68. PROTECTION OF CONCRETE.- Until a sufficient time has elapsed for the setting of concrete, it will not be permitted to truck over the invert nor to build forms thereon nor to land or store heavy objects on such surfaces. All damage to the concrete shall be repaired by the contractor at his own expense and to the satisfaction of the engineer.

69. TUNNEL PLUG.- The remainder of the tunnel plug shall be concreted as shown on the drawings or as directed by the engineer. The surface of the concrete lining against which the concrete in the plug is to be placed shall be wet sand blasted to remove the entire present face so as to provide perfect bond between the concrete of the lining and the plug. All laitance on top of lower part of tunnel plug shall be completely removed prior to placing wet concrete thereon. A system of semi-circular troiel grout pipes shall be set as shown on the drawings and as directed by the engineer in the surface of contact between the plug and the tunnel lining and after the concrete has hardened shall be pressure grouted under 100 pounds pressure to insure a water-tight connection. "Troiel Grout Pipe" shall be furnished by the contractor for grouting around the circumference of the keyways and the cost of installation shall be included in the unit prices bid.

Concrete shall be placed in the plug in layers not to exceed four feet and three days shall elapse between successive pours. Concrete shall be thoroughly tamped and rammed to insure a complete falling. Grouting will be done in the top of the plug by means of troiel pipe as indicated on the drawings or as directed by the engineer, but the contractor shall take all necessary precautions so that a minimum of grout will be required.

The contractor shall place a 4 inch pipe in the plug as shown on the drawings or as directed by the engineer. Pipe will be furnished by the City and the cost of placing shall be included in the unit price bid for tunnel plug concrete.

Payment for concrete in tunnel plug will be made at the unit price bid which shall include the cost of all necessary labor, materials and operations in connection with the tunnel plug, except cement, steel grout pipe, wet sandblasting ^{and} grouting

70. BASIS OF PAYMENT.- The amount of concrete in the inner lining shown on the drawing will be taken as 5.1 cubic yards per lineal foot. The lining shall have a minimum thickness of 18" and any additional concrete required to produce such minimum thickness on account of variation from theoretical dimensions of the present tunnel shall be placed by the contractor and included in the unit price bid for Inner Lining. No payment for cement or concrete will be made for concrete outside the prescribed lines. In case any cavities resulting from carelessness of the contractor are required to be filled with concrete it shall be done by the contractor at his own expense.

71. PAYMENT FOR CONCRETE.- Payment for concrete will be made at the unit price bid for concrete per cubic yard in place which shall include the cost of all power, machinery, labor and materials involved in furnishing the concrete aggregates to the job and mixing and placing the concrete, preparing surfaces, removing water, providing and removing runways and platforms, forms and supports, finishing, curing and protecting the surfaces and shall include the cost of all other labor, and materials and operations entering into the construction of concrete, except cement, steel reinforcement and wet sandblasting which will be paid for as separate items.

72. DRILL HOLES.- Where and as directed by the engineer the contractor shall drill, drain or grout holes in the existing lining or in the new inner lining. The holes shall be sufficiently large to provide for insertion and sealing of 2" drain or grout pipes. Payment will be made for the actual number of lineal feet of hole drilled at the unit price bid which shall include the cost of all labor, materials and operations.

73. CEMENT GROUT.- The contractor shall force grout composed of cement, sand and water or cement and water in proportions to be prescribed by the engineer into the grout pipe, trial pipe and drain pipe where and as directed by the engineer. Cement used for grouting the contact joint between tunnel plug concrete and tunnel lining shall be screened through a 200 mesh sieve and only the portion passing the 200 mesh shall be used in this grout. For grouting elsewhere than in the contact joint, regular cement may be used without screening.

74. MIXING AND PLACING GROUT.- The apparatus for mixing and placing grout shall be of an acceptable type, equal in efficiency to a machine having for its essential part an air tight chamber in which the grout is effectivly stirred and from which it is forced into the grout and drain pipes by air under any required pressure up to 100-pounds per square inch. Grouting shall be so conducted that the engineer will be satisfied that the desired filling has taken place. Grout holes shall be grouted in the order directed by the engineer. Grout holes left ungrouted in tunnel plug under the Road-Connolly contract shall be grouted as directed. If it is discovered that any voids have not been thoroughly filled by the final application of grout, the process shall be repeated until satisfactory results are obtained. The order in which holes are grouted shall be satisfactory to the engineer. It may be required that air pressure be applied to the work several hours before grouting is begun. Grouting operations shall not be rushed as the result expected can only be obtained by the use of such time.

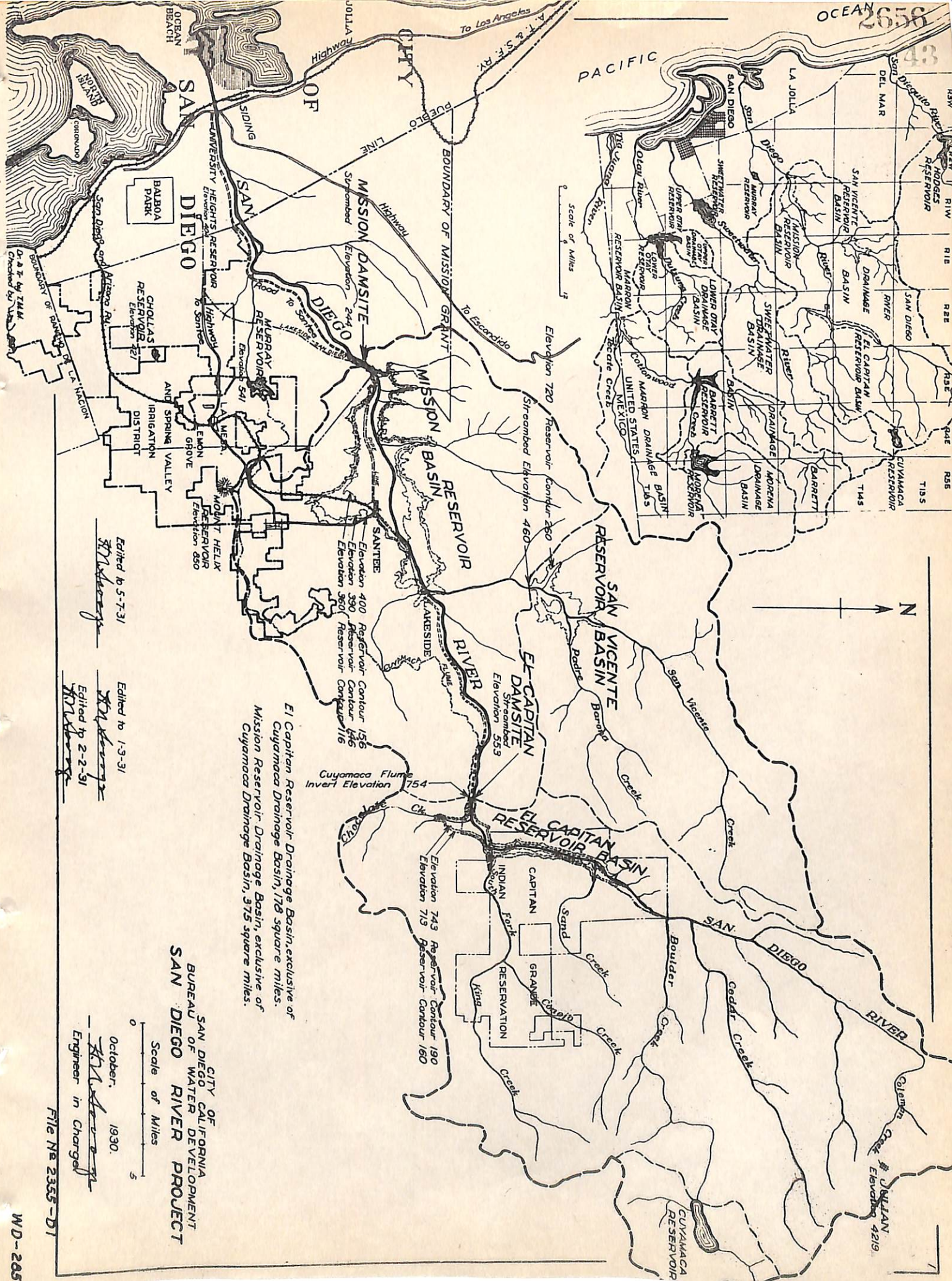
75. PAYMENT FOR GROUT.- The quantity of grout to be paid for

shall be the actual number of cubic feet used in accordance with directions, measured in its liquid state before being forced into the work. The contractor shall provide suitable means for convenient measuring. Payment will be made at the unit price bid, which shall include the cost of all necessary equipment and operations, all labor and material necessary for doing the grouting as directed, except that cement and pipe will be paid for at the respective unit prices bid in the schedule.

76. PIPE FOR GROUT AND DRAINAGE.- The contractor shall set new 2" standard steel grout pipe into holes drilled into the lining or where directed by the engineer. The contractor shall thoroughly anchor them in the holes to prevent blow outs when pressure is applied. The contractor shall also set 2" pipe for drains in drill holes in the existing concrete lining in such manner as to conduct seepage water through the forms as directed by the engineer. All pipe shall be threaded at the exposed ends. Payment for grout and drain pipe will be made at the unit price bid which shall include the cost of all labor, materials and operations complete in place. All pipe not grouted shall be capped upon completion of work.

77. TROIEL GROUT PIPE.- Around the circumference of the tunnel plug where indicated on the drawing or where directed by the engineer, "Troiel" semi-circular grout pipe, or equal in the opinion of the engineer, capable of being bent to the radii of the tunnel to permit proper contact, shall be placed by the contractor in the manner directed by the engineer. Straight troiel pipe of similar shape shall be used to grout the top

and back of the tunnel inner lining and the top of the tunnel plug as and where directed by the engineer. Payment for trciel pipe will be made at the unit price bid which shall include the cost of pipe with all necessary connections for 2" pipe, labor and operations complete in place.



Edited to 5-7-31
H. M. ...

Edited to 1-3-31
H. M. ...

Edited to 2-2-31
H. M. ...

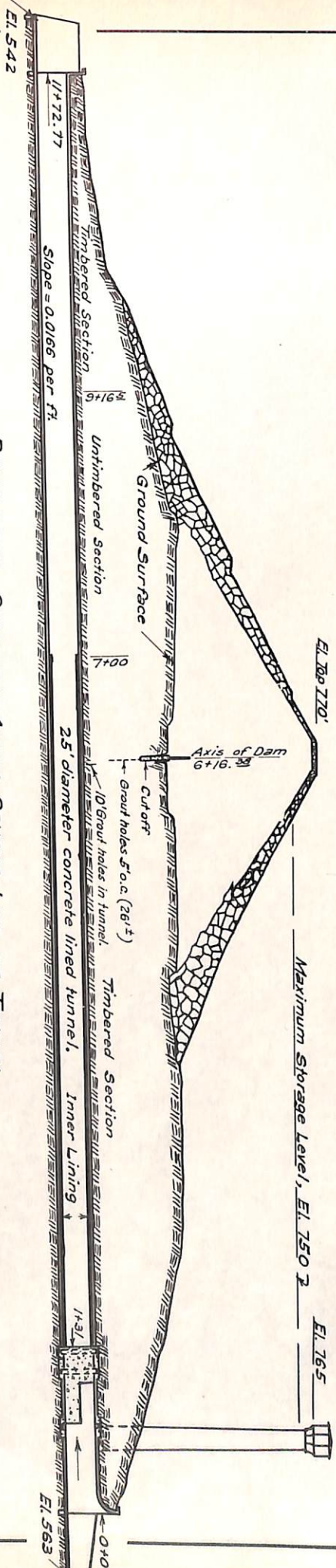
El Capitan Reservoir Drainage Basin, exclusive of
 Cuyamaca Drainage Basin, 178 square miles.
 Mission Reservoir Drainage Basin, 375 square miles.

CITY OF
 SAN DIEGO CALIFORNIA
 BUREAU OF WATER DEVELOPMENT
SAN DIEGO RIVER PROJECT

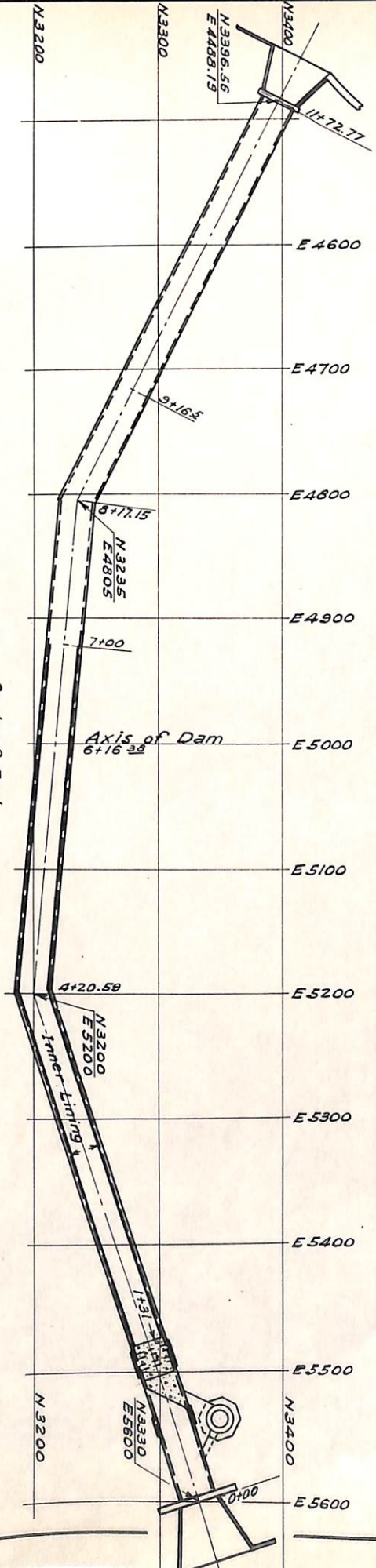
Scale of Miles
 0 5

October, 1930.
H. M. ...
 Engineer in Charge

File No 2355-D1



DEVELOPED SECTION ALONG CENTER LINE OF TUNNEL SHOWING SECTION CONSTRUCTION PROGRESS

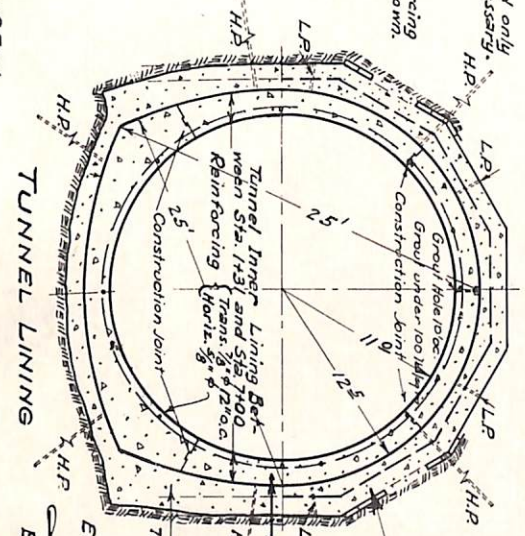
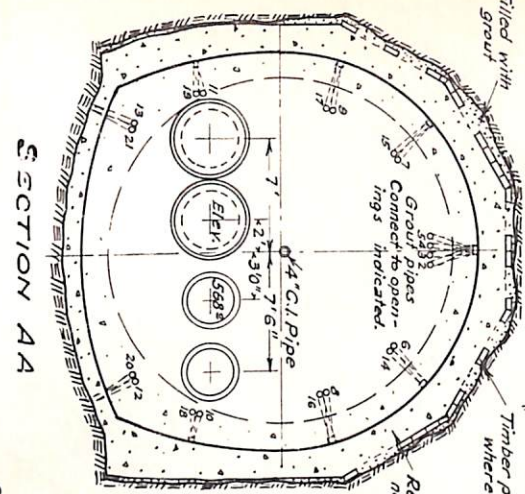
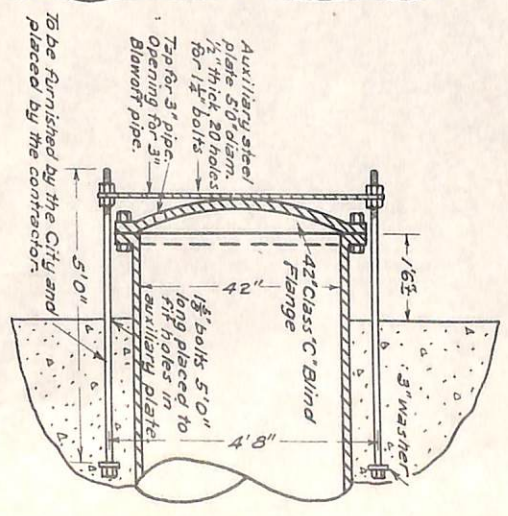
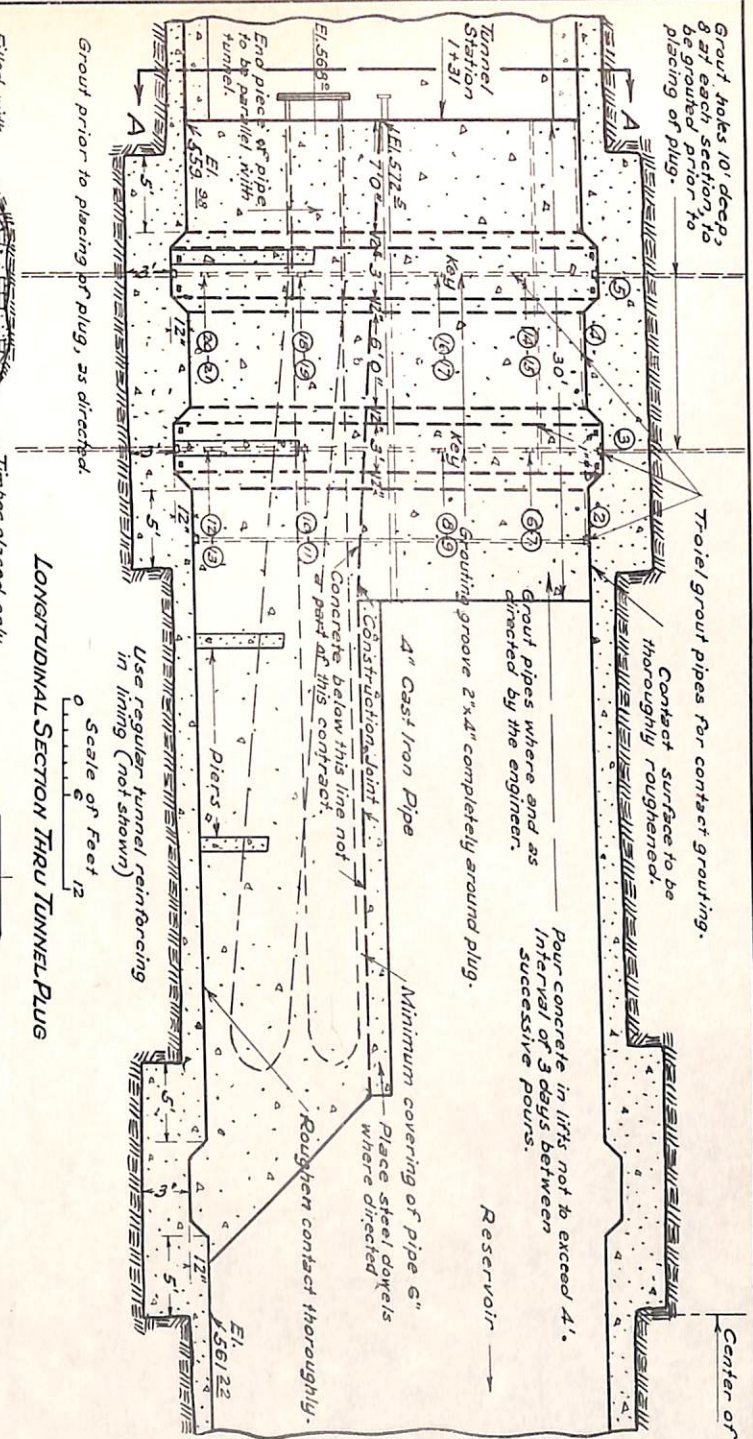


Drawn by JMW & NC.
Traced by AG.
Checked by RB.

Edited to 10-15-34
Frank R. Pyle

CITY OF
SAN DIEGO CALIFORNIA
WATER DEPARTMENT
DIVISION OF DEVELOPMENT AND CONSERVATION
SAN DIEGO RIVER PROJECT
EL CAPITAN RESERVOIR FEATURE
HYDRAULIC FILL AND ROCK EMBANKMENT DAM
OUTLET TUNNEL

Frank R. Pyle
Hydraulic Engineer
Scales as Shown
August 1934



Flanged end on 36" pipes.
Blind Flange on 42" pipes.

Scale of Feet
0 6 12

Completed
LP = Low pressure grout hole, 60" dia.
20' o.c. Grouted with 60# air.
HP = High pressure grout hole 10' long
20" o.c. (alternate with low pressure holes). Grouted with 100# air.

CITY OF
SAN DIEGO CALIFORNIA
WATER DEPARTMENT
DIVISION OF DEVELOPMENT AND CONSERVATION
SAN DIEGO RIVER PROJECT
EL CAPITAN RESERVOIR FEATURE
HYDRAULIC FILL AND ROCK EMBANKMENT DAM
TUNNEL PLUG

Hydraulic Engineer

Reinforcing:
Horiz. 3/4" x 9" @ 22' o.c.
Trans. 1" x 8" @ 12" o.c.

Scale of Inches
0 10 20

3-14-35
copy/p

M. H. GOLDEN

404 California Bank Building
San Diego, California

November 13, 1934

C
O
P
Y

To the Honorable, Common Council
of the City of San Diego,

Gentlemen:

I have been awarded a contract by the City of San Diego wherein I agree to build, erect, construct, complete and install at the El Capitan Reservoir Dam the Tunnel Inner Lining.

As I construe the contract, the City is obligated to forthwith make the tunnel in which the lining is to be installed available so that work can be commenced upon signing of the contract and is further obligated to see that said tunnel is at all times kept open so that work can be continuously carried on, and in that connection to prevent obstructions which would interfere with the work. Unless this is done, it will be impossible for me to complete the work before the rains of the winter come, which will probably result in a flow of water which would greatly delay the work and result in great damage and material financial loss to the undersigned.

While my relations with Mohl & Connolly, contractors for El Capitan Dam, are amicable, yet it has been intimated to me that they will not yield access to the tunnel so that the work on the inner lining may be prosecuted until all their differences with the City are adjusted. It is very important that I be given access to the tunnel at the earliest possible date after the execution of the contract for the reason that one day's time now may be worth several days' time later in the season. I shall consider the failure upon the part of the City to make the tunnel accessible a breach of the terms and conditions of the contract. I shall also expect any delay in the work by reason of the tunnel not being accessible as provided in the contract to be compensated by an extension of such additional time as may be reasonably necessary to complete the work.

Very truly yours,

M. H. GOLDEN (Signed)

3-13-35
copy/P

2661

November 19, 1934

From : George L. Buck, City Manager
To : Mr. Fred D. Pyle, Hydraulic Engineer
Subject : M. H. Golden communication re operations - El Capitan

The City Council at its last meeting referred to us communication from M. H. Golden, copy of which is attached hereto, with reference to the attitude of Mohl & Connolly in not allowing him to have access to the tunnel to do the work that his contract calls for.

We would appreciate your reply with reference to the same so that we may advise the Council of the status of this matter.

George L. Buck

GLB/dk
enc.

November 19, 1934

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

Subject: San Diego River Project, El Capitan Reservoir
Dam Tunnel Inner Lining. Request for funds.

Gentlemen:

Attached is form of 31-day ordinance appropriating the sum of \$58,500.00 from the El Capitan Dam Bond Fund for the purpose of providing funds for payment in connection with the construction of the El Capitan Reservoir Dam Tunnel Inner Lining.

RECOMMENDATION: It is recommended that the attached form of ordinance be adopted.

Respectfully,

Fred D. Fyle
Hydraulic Engineer.

FDF/f
Encl.

November 30, 1934

From : Hydraulic Engineer
To : City Manager
Subject : San Diego River Project, El Capitan Feature
Tunnel Inner Lining, access to work

Receipt is acknowledged of your letter dated November 19, 1934 enclosing copy of letter dated November 13, 1934 from M. H. Golden, who was, on November 13, 1934 awarded contract for the El Capitan Reservoir Dam Tunnel Inner Lining.

Mr. Golden's contract was executed and bonds accepted on November 22, 1934 and he commenced work in the tunnel November 28, 1934.

Since the award of contract Mr. Golden has been doing considerable preparatory work, installing a pump for unwatering the outlet portion of the tunnel, installing concrete mixing plant and delivering concrete aggregate.

Fred D. Pyle
Hydraulic Engineer

FDP/f

H. H. GOLDEN

San Diego, California

January 11, 1935

City of San Diego
San Diego, Calif.

Attention: Fred D. Pyle, Hydraulic Engineer

Re: El Capitan Reservoir Dam Tunnel Inner
Lining, Contract No. 290333, Filed Nov. 22, 1934.

Gentlemen:-

It will be impossible for me to complete the contract for the El Capitan Reservoir Dam Tunnel Inner Lining by January 15, 1935, the time limit contained in the contract.

Due to the delay of H.W. Rohl & T.E. Connolly in completing a part of the tunnel work under their contract with the City of San Diego, I was prevented from entering upon this work until November 28, 1934.

Additional time was required on account of the increase in the area sand blasted, from 25,000 square feet to about 37,000 square feet, requested by the State Engineer.

Also the increase of 2" holes drilled from 100 lineal feet to 200 lineal feet required extra time.

As a result of the above the time of completion of the work has been delayed at least thirty days and I respectfully request that an extension of time of thirty days on my contract be granted.

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,

H. H. GOLDEN (Signature)

HCH: A

STANDARD SURETY & CASUALTY COMPANY OF NEW YORK

Los Angeles, Cal.

January 11, 1935

City of San Diego,
San Diego, California.

Attention: Mr. Fred B. Pyle

Gentlemen:

In connection with the request of Mr. M. H. Golden for a thirty-day extension of time, for the completion of the tunnel lining for the Conversion Tunnel at the El Capitan Dam, I wish to advise that such an extension of time is entirely agreeable to this Company.

Yours very truly,

STANDARD SURETY & CASUALTY COMPANY

MERLE D. SMITH (signature)

MERLE D. SMITH, MANAGER

MDS:KB

January 14, 1935

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

Subject: San Diego River Project, El Capitan
Reservoir Dam Tunnel Inner Lining,
Application of M. H. Golden for
Extension of time

Gentlemen:

Enclosed, for your consideration, is application of
M. H. Golden, contractor, dated January 11, 1935, accompanied
by formal consent of the sureties, applying for an extension
of time of thirty days in which to complete his contract work
on the El Capitan Reservoir Dam Tunnel Inner Lining.

Contractors H. W. Rohl and T. E. Connolly did not com-
plete their contract for the El Capitan Dam until November
27, 1934 and M. H. Golden was prevented from entering upon
his work until November 28, 1934.

When the specifications were prepared it was anticipated
that only 25,000 square feet of the existing tunnel would re-
quire sand blasting. The State Engineer required the sand
blasting of the entire length of the tunnel inner lining and
of all that portion above the invert, thus increasing the area
sand blasted to about 37,000 square feet.

The application of M. H. Golden for an extension of time
in which to complete his contract work on the El Capitan Reservoir
Dam Tunnel Inner Lining is hereby approved and it is recommended
that an extension of time to February 14, 1935 be granted.

Very respectfully,

Fred D. Pyle
Hydraulic Engineer

FDP/f

APPROVED: George L. Buck
City Manager

January 17, 1935

Mr. M. H. Golden, Contractor
El Capitan Dam Tunnel Inner Lining
404 California Bank Building
San Diego, California

G-7

Subject: San Diego River Project, El Capitan
Feature, M. H. Golden contract
Extension of time

Dear Sir:

Receipt is acknowledged of your letter dated January 11, 1935 requesting an extension of time of thirty days in which to complete your contract for the construction of the El Capitan Reservoir Dam Tunnel Inner Lining; also

Letter from Standard Surety & Casualty Company, dated January 11, 1935, cooperating with you in the request for extension of time.

Enclosed is copy of Resolution No. 62545 adopted by the Council of the City of San Diego January 15, 1935, granting your request for extension of time to February 14, 1935.

Very truly yours,

Fred D. Pyle
Hydraulic Engineer

FDP/f
Encl. Resolution 62545
cc City Manager
City Attorney
Resident Engineer

2/18/35
copy /f

2668

M. H. GOLDEN
General Contractor
San Diego, California

February 16, 1935

City of San Diego,
San Diego, Calif.

Attention: Fred D. Pyle, Hydraulic Engineer,

Re: El Capitan Reservoir Dam Tunnel Inner
Lining Contract No. 890335, Filed
November 28, 1934.

Gentlemen:-

Application is hereby made for an additional extension of time of twelve (12) days from February 15th, 1935, in which to complete subject contract.

The work except grouting and extra work orders #2 and #3 was completed February 8th, 1935. At that time we had secured the use of an air compressor adequate for our grouting needs. The subsequent stormy weather however, required the use of this compressor on other City work. We were then obliged to use another machine which proved to be inadequate for the work. We have since been obliged to obtain a compressor from Los Angeles which is performing satisfactorily. Due to these reasons which were beyond our control, we request six days extension of time.

Extra order #2 which is for the construction of a board walk into the tunnel cannot be undertaken until the grouting equipment is out of the tunnel. For the completion of this extra work we respectfully request an additional six days extension of time, or a total of twelve (12) days.

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

MHO:A

R A D I O G R A M

10 LA HL 11

NK LOSANGELES CALIF 920AM FEB 18

FRED B PYLE

CITY ENGINEERS OFFICE SANDIEGO CALIF

APPROVE TWELVE DAY EXTENSION CONTRACTOR GOLDEN ON ELCAPITAN
DAM TUNNEL JOB

STANDARD SURETY AND CASUALTY CO OF NEWYORK

944AM

Fred D. Fyle

February 18, 1935

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

Subject: San Diego River Project, El Capitan Reservoir
Dam Tunnel Inner Lining. Application of
H. H. Golden for additional extension of time.

Gentlemen:

Enclosed, for your consideration, is application of H. H. Golden dated February 16, 1935 accompanied by consent of the sureties applying for an additional extension of time from February 14, 1935 to February 26, 1935 in which to complete his contract work on the El Capitan Reservoir Dam Tunnel Inner Lining.

Mr. Golden completed all work in connection with his contract on February 8, 1935 except for grouting and an extra work order for the construction of a board walkway into the tunnel, which cannot be undertaken until the completion of the work under schedule items.

The Contractor made arrangements for renting an adequate air compressor for the grouting operations from a local owner, but because of the wet weather prevailing from February 8 to 15, the City work that this compressor was being used on was delayed and the compressor is still not available. The Contractor secured another compressor which has proven inadequate and it has become necessary for him to obtain one from Los Angeles. Under the circumstances it is indicated that he was delayed six days by unforeseen causes beyond his control within the meaning of paragraph 11 of the contract specifications.

Extra Work Order No. 2 issued to the Contractor provides for the construction of a board walkway into the tunnel above the natural water level after the Contractor discontinues the use of his large pump. This walkway cannot be constructed until after the grouting operations are completed and the

To the Honorable, the Mayor
and Council

--2

2/18/35

equipment removed from the tunnel and must be installed before his pump is removed. This work will require about six days.

The application of H. H. Golden for an additional extension of time in which to complete his contract work on the El Capitan Reservoir Dam Tunnel Inner Lining is hereby approved and it is recommended that an extension of time to February 26, 1935 be granted.

Very respectfully,

Fred B. Fyle
Hydraulic Engineer

APPROVED:

George L. Zook
City Manager

FDF/T
Encls.
cc City Manager

February 21, 1935

Mr. M. H. Golden, Contractor
El Capitan Reservoir Dam Tunnel Inner Lining
404 California Bank Building
San Diego, California

G-10

Subject: San Diego River Project, El Capitan
Feature, M. H. Golden Contract
Additional Extension of Time

Dear Sir:

Receipt is acknowledged of your letter dated February 16, 1935 requesting an additional extension of time for the completion of your contract work on the El Capitan Reservoir Dam Tunnel Inner Lining; also

Telegram and confirmation letter dated February 18, 1935 from Standard Surety and Casualty Company of New York, co-operating with you in the request for extension of time.

Enclosed is copy of Resolution No. 62690 adopted by the Council of the City of San Diego February 19, 1935, granting your request for extension of time to February 26, 1936.

Very truly yours,

Fred D. Pyle
Hydraulic Engineer

F/F
Encl. Resolution 26290
cc City Manager
City Attorney
Resident Engineer

February 23, 1935

Mr. H. H. Golden, Contractor
El Capitan Reservoir Dam Tunnel
Inner Lining
404 California Bank Building
San Diego, California.

C-11

Subject: San Diego River Project, El Capitan
Reservoir Dam Tunnel Inner Lining
Completion of work

Dear Sir:

Final inspection of the work performed by you in connection with the erection, construction and completion of the El Capitan Reservoir Dam Tunnel Inner Lining, pursuant to the provisions of that certain contract entered into between The City of San Diego and yourself, dated November 20, 1934, has been made.

Subject to the provisions of Paragraph 31 of the Contract Specifications and the performance of the clean-up work required thereunder, you are hereby advised that all of the work to be performed by you in the erection, construction and completion of the El Capitan Reservoir Dam Tunnel Inner Lining has been completed to the satisfaction of the Engineer.

Very truly yours,

Fred D. Fyle,
Hydraulic Engineer.

FDF/p
cc-M. H. Golden, Lakeside, California
Resident Engineer

February 23, 1935

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

Subject: San Diego River Project, El Capitan Reservoir
Dam Tunnel Inner Lining, completion of work
under contract by N. H. Golden

Gentlemen:

The work under contract with N. H. Golden of the El Capitan Reservoir Dam Tunnel Inner Lining, Contract Document No. 290335 dated November 20, 1934, has, except for date of completion, been fully completed in compliance with the plans, drawings and specifications therefor and to the satisfaction of the Engineer.

Under the terms of the contract the work was to have been completed on or before January 15, 1935.

The date for completion of the work, after consideration of an application by the Contractor, was extended by Resolution No. 62545 of the Council from January 15, 1935 to February 14, 1935.

The date for completion of the work, after consideration of an application by the Contractor, was further extended by Resolution No. 62690 of the Council from February 14, 1935 to February 26, 1935.

The work was completed on February 23, 1935.

RECOMMENDATION: It is recommended that the materials furnished and work performed in the erection, construction and completion of the El Capitan Reservoir Dam Tunnel Inner Lining by N. H. Golden be officially accepted and paid for by the City of San Diego, subject to the provisions of Paragraph 50 of the contract specifications.

APPROVED:

respectfully,

George L. Buck
City Manager

Fred D. Pyle
Hydraulic Engineer

April 8, 1935

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

Subject: San Diego River Project, El Capitan
Feature, M. H. Golden Contract,
Acceptance of final estimate and
Delivery of release

Gentlemen:

Contractor M. H. Golden completed the contract work on the El Capitan Reservoir Dam Tunnel Inner Lining February 23, 1935, and the work was officially accepted by the Council by Resolution No. 62703 adopted February 26, 1935 and filed for record with County Recorder February 28, 1935.

The final estimate as prepared and checked by the Hydraulic Engineer has been accepted by M. H. Golden and a release of all claims against the City of San Diego under and by virtue of the contract has been executed by the contractor and delivered to the City.

Very respectfully,

Fred D. Pyle
Hydraulic Engineer.

F/f
cc City Manager
City Attorney

RELEASE OF CLAIMS

WHEREAS, heretofore, on to wit, the 20th day of November, 1934, the undersigned entered into and executed a certain contract with the City of San Diego, California, a municipal corporation, whereby the undersigned, as Contractor, agreed to build, erect and construct for the defendant a certain public work commonly known and referred to as the El Capitan Reservoir Dam Tunnel Inner Lining, a true copy of said contract being on file in the office of the City Clerk of said City of San Diego, marked Document No. 290335; 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 of San Diego by its Council, such acceptance being evidenced by resolution of said Council dated February 26, 1935, numbered 62703; and

WHEREAS, under the terms of said contract (Document No. 290335) and particularly under the provisions of Specification 50 thereof, it is provided as follows:

"50. 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. 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 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 has prepared and filed, or is about to file, the final estimate as provided for in said Paragraph 50 of said contract, which said final estimate (inclusive of amounts deducted from prior estimates) is in the sum of \$13,852.36; and

WHEREAS, the Contractor has assigned unto the Security Trust and Savings Bank of San Diego all of the moneys due and to become due to said Contractor under or by virtue of said contract;

NOW, THEREFORE, in consideration of the payment to said Contractor of the said sum of \$13,852.36, and in consideration of the payment heretofore of various progress estimates heretofore approved and filed by the Hydraulic Engineer of the 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, and his assignee, Security Trust and Savings Bank of San Diego, under said contract (Document No. 290335), do hereby release said 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 of said contract, or any one or more thereof, either express or implied, of that certain contract dated November 20, 1934 between The City of San Diego, a municipal corporation, and M. H. Golden, for the building, erection, construction, completion and installation of the El Capitan Reservoir Dam Tunnel Inner Lining, a copy of which is on file in the office of the City Clerk of said City, marked Document No. 290335.

Dated this 8 day of April, 1935.

M. H. GOLDEN

SECURITY TRUST AND SAVINGS BANK
OF SAN DIEGO

By A. J. Sutherland
Vice-Pres.

P. C. Kelley

Secy.

STATE OF CALIFORNIA, }
COUNTY OF SAN DIEGO. } ss

On this 8 day of April, A. D. Nineteen Hundred and Thirty-five, before me James J. Breckenridge 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 within 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.

James J. Breckenridge
Notary Public in and for the County
of San Diego, State of California.

(SEAL)

STATE OF CALIFORNIA, }
COUNTY OF SAN DIEGO. } ss

On this 8th day of April, A. D. Nineteen Hundred and Thirty-five, before me Emma Geradehand a Notary Public in and for said County and State, residing therein, duly commissioned and sworn, personally appeared A. J. Sutherland known to me to be the Vice President and P. C. Kelley known to me to be the Secretary of the SECURITY TRUST AND SAVINGS BANK OF SAN DIEGO, the Corporation which executed the within and annexed instrument, and acknowledged to me that such Corporation 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.

Emma Geradehand
Notary Public in and for the County
of San Diego, State of California.

(SEAL)

I hereby approve the form of the foregoing Release of Claims this 8th day of April, 1935.

C. L. BYERS, City Attorney

By Gilmore Tillman
Assistant City Attorney.

ORDINANCES AND RESOLUTIONS

ORDINANCE NO. 549
(New Series)

AN ORDINANCE APPROPRIATING THE SUM OF \$58,500.00 FROM THE EL CAPITAN DAM BOND FUND OF THE CITY OF SAN DIEGO, FOR THE PURPOSE ONLY AND EXCLUSIVELY OF PROVIDING FUNDS FOR PAYMENT FROM TIME TO TIME TO M. H. GOLDEN OF AMOUNTS ACCRUING AND PAYABLE TO HIM UNDER HIS CONTRACT WITH THE CITY OF SAN DIEGO FOR THE CONSTRUCTION OF THE EL CAPITAN RESERVOIR DAM TUNNEL INNER LINING.

WHEREAS, there are now in the City Treasury of The City of San Diego certain funds held in the El Capitan Dam Bond Fund, applicable exclusively to the purpose of constructing a dam at the City's El Capitan Dam and Reservoir Site, which said funds were authorized to be expended exclusively for said purpose by the electors of the city at an election held on the 18th day of November, 1924, and at an election held on the 15th day of December, 1931; and

WHEREAS, the Council has heretofore, to-wit, on the 15th day of November, 1934, awarded to M. H. Golden, as the lowest responsible and reliable bidder a contract for the construction of the El Capitan Reservoir Dam Tunnel Inner Lining; and

WHEREAS, it is at this time desirable and convenient to allocate to certain appropriate accounts in the office of the Auditor and Comptroller of the City, for the purpose hereinbefore mentioned, definite proportions of the moneys in said El Capitan Dam Bond Fund, which said moneys have been heretofore and now are authorized to be used and expended for the said El Capitan Dam and Reservoir Project; NOW, THEREFORE,

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

Section 1. That the sum of fifty-eight thousand five hundred dollars (\$58,500.00), or so much thereof as may be necessary, be, and the same is hereby set aside and appropriated out of the El Capitan Dam Bond Fund of The City of San Diego, for the purpose only and exclusively of payment from time to time to M. H. Golden of amounts accruing and payable to said M. H. Golden under his contract with the City for the construction of the El Capitan Reservoir Dam Tunnel Inner Lining.

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

I HEREBY CERTIFY that the above and foregoing is a full, true and correct copy of Ordinance No. 549, of the ordinances of the City of San Diego, California, as adopted by the Council of said City November 20, 1934.

ALLEN H. WRIGHT, City Clerk

By CLARK H. FOOPE, JR. Deputy

RESOLUTION NO. 62276

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

That the bid of M. H. Golden, as contained in Document No. 290041, on file in the office of the City Clerk of The City of San Diego, for the construction of El Capitan Reservoir Dam Tunnel Inner Lining involving about 3220 cubic yards of concrete, about 4650 barrels of cement, about 142,000 pounds of reinforcing steel and about 2000 cubic feet grouting and miscellaneous items, all as more particularly and in detail set forth in those certain drawings and specifications contained in Document No. 289826, on file in the office of the City Clerk of said City, being the lowest bid submitted for said work, be, and the same is hereby accepted; and that the contract for such work be, and the same is hereby awarded to said M. H. Golden.

BE IT FURTHER RESOLVED, 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 said M. H. Golden for the construction of said El Capitan Reservoir Dam Tunnel Inner Lining, in accordance with said bid and at the prices specified therein, and upon the terms and conditions and specifications set forth in Document No. 289826, on file in the office of the City Clerk of said City.

CERTIFICATE OF AUDITOR AND COMPTROLLER

I HEREBY CERTIFY that the indebtedness and obligation to be incurred by the contract for the construction of El Capitan Reservoir Dam Tunnel Inner Lining, authorized to be entered into by the hereto attached resolution, can be incurred without the violation of any of the provisions of the Charter of The City of San Diego; and I do hereby further certify, in conformity with the requirements of Section 80 of the Charter of The City of San Diego, that sufficient moneys to meet the obligations of said contract are actually in the Treasury, or are anticipated to come into the Treasury, to the credit of the appropriation from which the same are to be drawn, and that the said moneys now actually in the Treasury, together with the moneys anticipated to come into the Treasury, to the credit of said appropriation, are otherwise unencumbered.

Dated November _____, 1934.

Auditor and Comptroller of The
City of San Diego, California.

I HEREBY CERTIFY the above to be a full, true and correct

copy of Resolution No. 62276 of the Council of the City of San
Diego, California, as adopted by said Council November 13, 1934.

ALLEN H. WRIGHT
City Clerk

By CLARK M. FOOTE, JR.
Ceputy

EQUIPMENT

3-14-35
copy/p

November 26, 1934

Mr. M. H. Golden, Contractor
El Capitan Dam Tunnel Inner Lining
404 California Bank Building
San Diego, California

G-3

Subject: San Diego River Project, El
Capitan Feature, Tunnel Inner
Lining, Removal of temporary dams

Dear Sir:

In connection with your contract for the construction of the El Capitan Reservoir Dam Tunnel Inner Lining, your attention is called to the two low dams which have been constructed upstream from the intake portal of the bypass tunnel by H. W. Rohl and T. E. Connolly to store water for their use in the construction of the El Capitan Reservoir Dam.

Please advise immediately if you desire these dams left as they are or cut through and drained.

Very truly yours,

Fred D. Pyle
Hydraulic Engineer

FDP/f

cc City Attorney

3-14-35
copy/P

2685

M. H. GOLDEN

November 26, 1934

Fred D. Fyle
Hydraulic Engineer
City of San Diego

SUBJECT: San Diego river Project;
El Capitan Feature, Tunnel
Inner Lining, Contract.
REMOVAL OF TEMPORARY DAMS

Dear Sir:-

In answer to your letter of November 26th, 1934,
we desire to have the two low dams at the intake portal of
the by-pass tunnel of El Capitan Dam remain for our protect-
ion during construction of tunnel inner lining.

Very truly yours,

M. H. Golden

MHG:A

~~3-14-35~~
copy/p

November 27, 1934

Mr. M. H. Golden, Contractor
El Capitan Dam Tunnel Inner Lining
404 California Bank Building
San Diego, California

G-4

Subject: San Diego River Project, El Capitan
Feature, Tunnel Inner Lining
Removal of temporary dams

Dear Sir:

Receipt is acknowledged of your letter dated November 26, 1934 requesting that the two low dams constructed upstream from the intake portal of the bypass tunnel at El Capitan Reservoir Dam by H. W. Rohl and T. E. Connolly be allowed to remain.

You are hereby advised that H. W. Rohl and T. E. Connolly have been directed by letter dated November 27, 1934 (S-141) copy attached, to leave the two low dams intact.

You may take over the operation and maintenance of these dams at your own risk and expense provided you assume full responsibility insofar as your work in the bypass tunnel is concerned.

Very truly yours,

Fred D. Pyle
Hydraulic Engineer

FDP/f
cc City Attorney
City's Resident Engineer

3-14-35
copy/p

2687

November 27, 1934

Messrs. H. W. Kohl & T. E. Connolly
Contractors El Capitan Dam
4351 Alhambra Avenue
Los Angeles, California

S-141

Subject: San Diego River Project, El Capitan Feature
Contractor's dams, control of

Gentlemen:

Two low dams have been constructed by you upstream from the intake portal of the bypass tunnel to store water for your use in the construction of El Capitan Dam; also you have installed several outlets, consisting of pipe and control gates, through these dams, as well as certain pipe lines and pumps in the vicinity of the dams.

You are hereby directed to leave these two dams and the outlet works intact.

You may continue to take such water from the reservoir above these dams as you may require for your construction purposes.

At your convenience you may remove all your pumps, pipe lines and other equipment, except such pipe and gates as may be in place under or in the dams as a part of your control works.

For such pipe and control gates as may be left in place as directed by the engineer a reasonable salvage value will be paid.

Very truly yours,

Fred D. Pyle
Hydraulic Engineer

FDP/f

cc H.W.Kohl & T.E.Connolly, El Capitan Dam
Contractor's Resident Representative
City's Resident Engineer
City Manager
City Attorney
Special Water Counsel
Contractor M. H. Olden

December 21, 1934

Mr. M. H. Golden, Contractor
El Capitan Dam Tunnel Inner Lining
404 California Bank Building
San Diego, California

G-5

Subject: San Diego River Project, El Capitan
Feature, Tunnel Inner Lining,
Equipment and Supplies.

Dear Sir:

Please furnish this office copies of all invoices for cement, steel and other materials used in connection with your contract for the tunnel inner lining at the El Capitan Reservoir Dam;

Also list of equipment being used on the work;

All in accordance with Paragraph 22 of the contract specifications.

Very truly yours,

Fred D. Pyle
Hydraulic Engineer

FDP/f

M. H. GOLDEN
General Contractor

January 4, 1935

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

SUBJECT: San Diego River Project,
El Capitan Feature,
Tunnel Inner Lining
EQUIPMENT AND SUPPLIES

Dear Sir:-

In compliance with your request I submit herewith a list of equipment and supplies in use on subject contract;

- 1 Rex Single Pumpcrete Machine complete with pipeline
- 2 Jaeger 10 s concrete mixers
- 1 15 H.P. Gasoline hoist
- 1 Jaeger 10 s concrete mixer (in reserve)
- 1 10" - 25 H.P. Centrifugal Pump (electric)
- 1 3½ Ton Moreland Truck
- 1 1½ Ford Truck
- 1 3½ Ton Dodge dump truck
- 1 110 foot air compressor
- 1 25 H.P. Pressure Pump (electric)
- 1 4" Diaphragm Pump gas driven
- 1 360 foot air compressor mounted on truck complete with sandblasting equipment. (This item has now been removed from job as work is complete)

There are also many items of small equipment, a list of which will be furnished on request.

Very truly yours,

M. H. Golden

MHG:A

CONSTRUCTION POLICIES AND METHODS

November 21, 1934

MEMORANDUM

Subject: San Diego River Project, El Capitan
Feature, Tunnel Inner Lining, conference

On November 20, 1934, Mr. M. H. Golden, Contractor for the El Capitan Reservoir Dam Tunnel Inner Lining, in consultation, stated that he desired to use chain made of reinforcing steel to support the reinforcing steel in the tunnel inner lining. He was advised that this was agreeable.

Mr. Golden stated that it was his desire to place one length of steel in the invert and one shorter length on each side of the arch, making it necessary to have three laps. He was advised that this was satisfactory and that the lap should be 40 times the diameter.

Mr. Golden was advised that each 16-foot section of Troiel pipe in the roof should be separated from the next 16-foot section by 2 feet to prevent grout running from one section of Troiel pipe to the next, and that there should be a connection for grouting at the middle of each 16-foot section. On this basis about 510 feet of Troiel pipe would be required for the roof and about 90 feet for the completion of the 3 lengths in the tunnel plug. About 38 connections would be required for grouting.

Mr. Golden stated that an 8" pump was now being set up to pump water out of the tunnel exit portal;

The sand blast outfit would soon be on the ground;

He expected the concrete pump to arrive on November 26, 1934;

He desired to place the bottom portion of the invert without forms, but to carry it up within 3 or 4 feet of the spring line on each side at the same time the invert was being poured;

He expected to make the first 150 feet of invert pour practically continuous.

Mr. Golden asked that the 5" pipe placed by H. W. Rohl and T. E. Connolly through the bottom portion of the tunnel plug be plugged, which request was changed by him on November 21 when he requested that the pipe be left open.

Fred D. Pyle
Hydraulic Engineer

FDP/f

M. H. GOLDEN
General Contractor
San Diego, California

November 27, 1934

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

SUBJECT: Contract for El Capitan Dam
Tunnel Inner Lining
CONCRETE POURING SCHEDULE

Dear Sir:-

In connection with subject contract I submit herewith for your approval a schedule of concrete pouring operations which we would prefer to carry out in order to obtain as much protection as possible from flood waters.

First - To pour one four foot lift on the tunnel plug, thus bringing the plug level to within 1'6" of the present water level of storage reservoir.

Second - To pour invert of tunnel lining for a distance of 75 feet. This pour to be made up to a point one foot below spring line of tunnel.

Third - To pour next four foot lift of tunnel plug.

Fourth - To pour invert to a distance of 150 feet from face of plug.

Fifth - To pour balance of tunnel plug and 60 feet of top arch section as a continuous pour, or if construction joint between plug and lining is essential, to wait not more than 24 hours between completion of plug and pouring of first arch section.

Sixth - To continue pouring invert in 75 foot sections and top arch in 20 foot sections until completion.

We feel that the foregoing program will work out to the best advantage and that it can be accomplished with safety to the structure. The pouring of the top section of the tunnel plug after the lining is in place cannot be accomplished satisfactory to the attainment of a first class job.

As you know admittance to the tunnel has been denied us until today. This delay throws us nearer the rainy season, and we therefore realize a greater hazard as the season advances.

Your cooperation in assisting us to carry out this schedule will be greatly appreciated, as well an early reply to this letter.

Please be assured that we are organized to push the project to completion in the shortest possible time. We also pledge full cooperation with you and your force on the job.

Very truly yours,
M. H. Golden

MHG:A

November 30, 1934

From : P. Beermann
To : Hydraulic Engineer
Subject : San Diego River Project, El Capitan Reservoir Dam
Tunnel Inner Lining, concrete forms, conference
with M. H. Golden

A conference was held at El Capitan Dam with M. H. Golden contractor El Capitan Reservoir Dam Tunnel Inner Lining, and Resident Engineer J. W. Williams, on November 28, 1934.

Mr. Golden outlined the procedure he contemplates using for the form work of the tunnel inner lining.

He plans to pour the invert and the sides of the lining up to within one foot of the spring line in one operation. The form work for this would extend from a point 6 feet on each side of the center line of the invert to a point one foot below the spring line, leaving the invert to be screeded while the concrete is being poured in from the spring line and settles down into place.

For the proper fastening of the forms cone washers, attached to dowels drilled into the existing concrete lining, will be used.

He contemplates pouring the entire top section of the arch in one operation, if permitted by the Hydraulic Engineer. Mr. Williams preferred that the top half of the arch be poured with the crown section separately as indicated in the specification drawing.

Throughout it is contemplated to use about 2'x5' tongue groove lagging sections which will be placed in directly ahead of concreting.

Mr. Golden contemplates the use of the pumped concrete, the pipe line delivering concrete for the top arch of the section to be placed near the crown of the tunnel, and if necessary, dumping into the flat sections of elephant trunk to convey the concrete to its final placing in the lining.

It is indicated to him that construction joints should be made in a vertical plane where possible. He inquired if he might use sawdust sacks for the construction joint. I indicated that it should be taken up with Mr. Pyle for his decision.

It was indicated by Mr. Golden that if for the first concrete he were not permitted to raise the concrete plug, his first operation would be the sequence as required by the Hydraulic Engineer.

P. Beermann

PROGRESS ESTIMATES FOR PAYMENT

CITY OF SAN DIEGO

Water Department

Division of Development and Conservation

El Capitan Reservoir Dam Tunnel Inner Lining

The City of San Diego, California

To M. H. Golden, 404 California Bank Building
San Diego, California

Contract Document No. 290446, dated November 20, 1934, for
construction of El Capitan Reservoir Dam Tunnel Inner Lining

Estimate for February 1935, Estimate No. 3 FINAL

For work, material or services
as stated in detail following.

Ordinance No. 549

\$ 6,403.98

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

M. H. GOLDEN
Contractor

Computed by J. W. WILLIAMS

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. 3 FINAL

Item No.	Work or Material	Quantity and Price	Amount
1.	Concrete inner lining in place 2,905.4 cubic yards at \$10.05 per cubic yard		\$ 29,199.27
2.	Concrete in tunnel plug 353.9 cubic yards at \$12.00 per cubic yard		4,246.80
3.	Cement in place in the work 5,251 barrels at \$2.295 per barrel		12,051.05
4.	Reinforcing steel in place in the work 115,737 pounds at \$0.04 per pound		4,629.48
5.	Cement grout in place in the work 2,037 cubic feet at \$0.90 per cubic foot		1,833.30
6.	2-inch grout and drain pipe in place in the work 492 linear feet at \$0.50 per linear foot		246.00
7.	Drill holes in concrete 291 linear feet at \$0.20 per linear foot		58.20
8.	2-inch Troiel, or equal, grout pipe in place in the work 642 linear feet at \$0.75 per linear foot		481.50
9.	Cement passing 200 mesh sieve in place in the work 5 barrels at \$5.00 per barrel		25.00
10.	2-inch pipe caps in place in the work 44 caps at \$0.50 each		22.00
11.	Wet sand blasting 35,772 square feet at \$0.05 per square foot		<u>1,788.60</u>
		Total	54,581.20
EXTRA WORK ORDERS			
1.	Suction manifold		379.96
2.	Construction of walkway and tunnel closure		243.56
3.	Cutoff grout pipes		<u>96.67</u>
			<u>7720.19</u>
	Plus 15% paragraph 14		<u>108.03</u>
	Total extra work orders		838.22

Estimate No. 3 FINAL

Ordinance 549

Gross earnings to date	\$ 55,409.42
Less retained 25 per cent	13,852.36
Net earnings to date	41,557.06
Less previous payments	35,153.08
Balance due by this claim	6,403.98

Correct as to quantities delivered, prices, deductions and computations.

J. W. WILLIAMS

Checked by P. BEERMANN

EXTRA WORK ORDERS

January 14, 1935

Mr. M. H. Golden, Contractor
El Capitan Reservoir Dam Tunnel Inner Lining
4040 California Bank Building
San Diego, California

G-6

Subject: San Diego River Project, El Capitan
Feature, Extra Work Order No. 1
Suction Manifold

Dear Sir:

In accordance with the provisions of Paragraph 14 of the drawings and specifications for El Capitan Reservoir Dam Tunnel Inner Lining, authorization is hereby given to you for the following work and the furnishing of the necessary material to be accomplished as extra work within the meaning of the specifications:

Install and operate a suction manifold to remove water from under the floor of the tunnel invert, all to be to the satisfaction of the Engineer; cost not to exceed \$385.00.

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

Very truly yours,

Fred D. Pyle
Hydraulic Engineer

FDP/p

February 7, 1935

Mr. H. H. Golden, Contractor
El Capitan Reservoir Dam Tunnel Inner Lining
404 California Bank Building
San Diego, California

c-3

Subject: San Diego River Project, El Capitan
Feature, Extra work Order No. 2
Construct walkway and tunnel
closure

Dear Sir:

In accordance with the provisions of paragraph 14 of the drawings and specifications for El Capitan Reservoir Dam Tunnel Inner Lining, authorization is hereby given to you for the furnishing of the necessary materials and the performance of the following work, to be accomplished as extra work within the meaning of the specifications:

Construct walkway at exit end of tunnel and tunnel closure, all as directed by the Hydraulic Engineer.

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

Very truly yours,

Fred D. Fyle
Hydraulic Engineer

FR/p
cc Resident Engineer
Accountant F.H. Stanley

February 14, 1935

Mr. W. H. Golden, Contractor
El Capitan Reservoir Dam Tunnel Inner Lining
404 California Bank Building
San Diego California

G-9

Subject: San Diego River Project, El Capitan
Feature, Extra Work Order No. 3
Cut off grout pipes

Dear Sir:

In accordance with the provisions of Paragraph 14 of the drawings and specifications for El Capitan Reservoir Dam Tunnel Inner Lining, authorization is hereby given to you for the following work to be accomplished as extra work within the meaning of the specifications:

After completion of grouting operations, cut off grout pipes, excepting for trial pipe, at concrete line as directed by the Engineer.

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

Very truly yours,

Fred D. Fyle
Hydraulic Engineer.

FB/p
cc Resident Engineer

CONTRACTOR'S COSTS

EL CAPITAN RESERVOIR DAM TUNNEL INNER LINING

Contractor's Costs

Item	Estimated cost
Bond premium	\$ 750.00
Labor	15,823.00
Compensation insurance	815.00
Lumber - hardware, etc.	1,483.50
Power, gas, oil, etc.	1,278.38
Cement	10,745.00
Rock	5,786.00
Sand	1,912.88
Trolley pipe	210.00
2-inch pipe	81.90
Pipe caps	7.92
Reinforcing steel and placing	4,295.18
Equipment rentals (x)	3,940.00
Sand blasting, sub-contract	1,609.74
Interest on holdback and bond	<u>169.83</u>
Total	\$ 48,908.33

(x) No allowance made for use of contractor's own equipment used on the job.

PROGRESS

TUNNEL INNER LINING CONCRETE PROGRESS

Date	Location	Station	Batches	Sacks Cement
1934				
December				
17	Tunnel plug El. 577-572	0+83 to 1+31	472	960
18	Invert to spring line	1+31 2+11	643.5	1,291
20	Plug El. 577-581	1+01 1+31	330	660
22	Plug El. 581 to crown	1+01 1+31	206	421
26	Invert to spring line	2+11 2+91	645	1,298
27	Arch to 5' above " "	1+31 2+02	253	525
29	Arch above spring line	1+31 2+02	89	199
29	Crown	1+31 2+02	130	260
1935				
January				
3	Invert to spring line	2+91 3+47	445	890
4	Arch above spring line	2+01 2+73	276	556
6	Crown section	2+01 2+73	184	372
9	Invert to spring line	3+47 4+20.6	478	960
10	Invert to spring line	3+47 4+20.6	93	193
10	Arch to 9' above " "	2+73 3+43	240	480
12	Crown section	2+73 3+43	184	371
16	Invert to spring line	4+20.6 5+00	700.5	1,401
17	Arch to 1/4 points	3+43 4+13	315.5	631
18	Crown section	3+43 4+13	187	377
22	Invert to spring line	5+00 5+61	510.5	1,033
23	Arch to 9' above " "	4+13 4+79	258	519
24	Crown section	4+13 4+79	183	369
26	Invert to spring line	5+61 6+33	594	1,188
28	Arch to 10' above " "	4+79 5+54	323	650
29	Crown section	4+79 5+54	176	355
31	Invert to spring line	6+33 7+00	561	1,125
February				
1	Arch to 1/4 points	5+54 6+29	289	581
2	Crown section	line 5+54 6+29	224	452
6	Arch to 10' above spring	6+29 7+10	290	583
7	Crown section	6+29 7+00	199	401
Totals			9,479	19,101

NOTE: Grouting was done by means of a 7 cubic foot grouting machine attached to a 220 foot air compressor. Grout was hand mixed generally of thin peaseoup consistency.

STATE INSPECTION

September 25, 1934

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

Subject: San Diego River Project, El Capitan
Feature, Outlet tunnel plug, and
additional lining

Dear Mr. Hyatt:

In accordance with the verbal request of Assistant
Deputy State Engineer W. H. Holmes, enclosed for your in-
formation are:

(a) Copy of report of Resident Engineer Harold Wood
to the Hydraulic Engineer on outlet tunnel grouting dated
August 23, 1934, giving tunnel grouting data in detail.

(b) Print of working drawing showing profile of cut-
off wall in relation to the bypass tunnel, grout holes and
the amount of grout in cubic feet taken by the holes.

(c) Print of working drawing No. 2647 showing location
of the bypass tunnel relative to the surface of the ground
after abutment stripping completed.

(d) Copy of report by Assistant Engineer P. Beermann
giving stresses that may occur in event of full hydrostatic
pressure on tunnel lining from full reservoir and stresses
for various methods of strengthening the lining which were
considered.

Enclosed, also, for your consideration and approval if
deemed proper, are prints in duplicate of Drawing WD-513
showing details of 30-foot tunnel plug proposed to be in-
stalled in the tunnel section of El Capitan Dam with downstream
end at Station 1+31; and

Showing additional 18-inch circular lining to be placed
inside the existing tunnel lining between the lower end of
the tunnel plug and station 6+31.

As soon as your approval is obtained, duplicate original
of the tracing will be sent you for your signature.

Your early attention is requested as it may become neces-
sary to have the lining constructed under separate contract.

Very truly yours,

Fred D. Pyle
Hydraulic Engineer.

FDP/P
Encls. (6)

11/23/34
copy /f

2709

WESTERN UNION TELEGRAM

SAN DIEGO, CALIFORNIA
OCTOBER 9, 1934

MR. EDWARD HYATT, STATE ENGINEER
FOUR NAUGHT ONE PUBLIC WORKS BUILDING
SACRAMENTO, CALIFORNIA

NO REPLY RECEIVED TO LETTER OF SEPTEMBER TWENTYFIFTH
REQUESTING APPROVAL EL CAPITAN TUNNEL PLUG AND LINING
PLEASE EXPEDITE AND WIRE WHEN APPROVED.

FRED D. PYLE
HYDRAULIC ENGINEER

POSTAL TELEGRAM

1934 OCT 9 PM 5 04

S157 43-SC SACRAMENTO CALIF 9 435P

FRED D PYLE HYDRAULIC ENGINEER-
CITY OF SANDIEGO 524 F ST SANDIEGO CALIF-

REFER YOUR TELEGRAM OCTOBER NINE STOP THIS WILL CONFIRM
AUTHORIZATION TO POUR LOWER PORTION OF TUNNEL PLUG GIVEN ON
OCTOBER FOURTH STOP AUTHORIZATION TO POUR BALANCE OF PLUG
DEPENDENT UPON PROGRESS AND STATUS OF FILL STOP WILL REVIEW
TUNNEL LINING AND ADVISE SHORTLY-

GEO W HAWLEY

10/15/34
copy /f

COPY

2711

POSTAL TELEGRAPH

366 93-SC SACRAMENTO CALIF 13 1130A 1934 OCT 13 AM 11 53

FRED D PYLE-

HYDRAULIC ENGINEER CITY OF SAN DIEGO 524 F ST SAN DIEGO CALIF-

REFER YOUR LETTER SEPTEMBER TWENTY FIFTH AND TELEGRAM OCTOBER
NINTH STOP AUTHORIZATION GIVEN TO INSTALL REINFORCED CONCRETE
LINING ELCAPIAN TUNNEL AS SHOWN ON YOUR DRAWINGS W D FIVE
THIRTEEN AND TWENTY SIX FORTY SEVEN PROVIDED THAT LINING BE
PLACED FROM DOWNSTREAM FACE OF PLUG TO TUNNEL STATION SEVEN
PLUS NAUGHT NAUGHT AND PROVIDED FURTHER THAT SATISFACTORY BOND
BE OBTAINED BETWEEN NEW AND PRESENT LINING THAT SKEPAGE BE
PROPERLY CARED FOR AND THAT SUITABLE PROVISION BE MADE FOR
GROUTING STOP ALL SUBJECT TO FIELD INSPECTION AND APPROVAL
AND SUCH CHANGES AS MAY BE FOUND NECESSARY DURING PROGRESS OF
WORK-

GEO W HAWLEY

October 18, 1934

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

Subject: San Diego River Project,
El Capitan Reservoir Dam
Tunnel Plug

Dear Mr. Hyatt:

In compliance with the approval given in telegrams
of Deputy State Engineer Geo. W. Hawley dated October
9 and 13, 1934;

Enclosed, for your official approval, is mercury
print of Drawing WD-512 indicating the El Capitan
Reservoir Dam Outlet Tunnel inner lining; and

Mercury print of Drawing WD-513, El Capitan
Reservoir Dam Outlet Tunnel Plug.

Very truly yours,

Fred D. Pyle
Hydraulic Engineer

/p

encls.(2)

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SACRAMENTO

October 30, 1934

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

SUBJECT: EL CAPITAN DAM #8-7

Dear Mr. Pyle:

We are sending you under separate cover tracings
No. WD-512 and WD-513.

These tracings were approved by the State Engineer
on October 29, 1934.

Very truly yours,

GEO. W. HAWLEY (Signature)
Deputy in Charge of Dams

cc-W.H.Holmes

January 3, 1935

From : P. Beermann

To : Hydraulic Engineer

Subject: San Diego River Project, El Capitan Feature
Inspection by Assistant Deputy State Engineer
W. H. Holmes, January 2, 1935

1. Mr. W. H. Holmes, Assistant Deputy State Engineer, called at the office at 4 P.M. January 2, 1935 and indicated his desire to visit the El Capitan tunnel inner lining work in progress. The Hydraulic Engineer requested that I go out with Mr. Holmes to inspect the work.

2. Resident Engineer J. W. Williams looked over the work with us and Mr. Holmes pointed out rock pockets in the upper part of the concrete lining and about 10 feet downstream from the lower end of the tunnel plug.

3. He inquired about the difficulty, if any, of placing the top portion of the tunnel plug and suggested that to cool the concrete it might be possible to pump water thru the Troiel grout pipe openings. This would allow the concrete to shrink in the shortest possible time.

4. He inquired what the procedure of grouting the Troiel pipe might be and I indicated that it might be well to grout the furthest upstream first and then the next downstream one leaving the furthest downstream Troiel pipe to be grouted at some later date after the success in grouting of the upper two pipes became known.

5. Mr. Holmes inquired if it would be possible to drill a hole in the top part of the dam and drive down a 40 foot deformed steel reinforcing bar in order to observe the settlement of the core and separation, if any, from the top of the dam. I indicated that there were many other things at the present time which had to be attended to first but it would be called to the attention of the Hydraulic Engineer.

6. We returned to the City about 7:30 P.M. when Mr. Holmes indicated that he would proceed to Barrett dam January 3 to see if any effect of the earthquake was noticeable.

P. Beermann

PA/P

January 3, 1935

M E M O R A N D U M

I inspected El Capitan dam and have the following comments:

I was out to El Capitan last night with Mr. Beermann. Two thoughts occurred to me. One was the contractor is apparently not using any set line of contact between succeeding lifts in pouring the lining. These joints should be approximately normal to the face.

Mr. Williams stated that the contractor is operating suction pumps several hours prior to placing a new section of concrete lining and this is preventing any seepage from immediately destroying the bond between the old and new lining. I see no objection to such a procedure but it would occur to me that possibly the old concrete was not sprinkled enough prior to placing the new concrete. I did suggest to Williams and Beermann that circulating water through the grout stop pipes would assist in cooling the plug and thereby permitting an earlier date for grouting of the same.

I was a little surprised to find that you had poured the final section of the plug as when we were together on the last inspection I required that you notify me prior to placing the final section.

WHH/f

W. H. Holmes,
Assistant Deputy State Engineer.

(dictated but not read)

RECONSTRUCTION FINANCE CORPORATION

November 5, 1934

Mr. W. L. Drager, Engineer
Self Liquidating Division
Reconstruction Finance Corporation
Washington, D. C.

Subject: San Diego River Project, El Capitan
Reservoir Dam Tunnel Inner Lining
Tabulation of bids

Dear Sir:

Enclosed is print of Drawing WD-517 being tabulation of bids opened October 30, 1934 for the construction of the City of San Diego's San Diego River Project, El Capitan Reservoir Dam Tunnel Inner Lining, R.F.C. Docket 119, San Diego, California.

As soon as contract has been awarded and executed for this work, you will be furnished with a copy of the document thru the regular channels.

Very truly yours,

Fred D. Pyle
Hydraulic Engineer

FB/p
encl.

cc-James H. Roper, Supervising Engineer R.F.C.
1022 Pacific National Building
Los Angeles, California.

11/23/34
copy /f

2718

WESTERN UNION TELEGRAM

SAN DIEGO, CALIFORNIA
NOVEMBER 5, 1934

W. L. DRAGER
RECONSTRUCTION FINANCE CORPORATION
WASHINGTON, D. C.

RE EL CAPITAN DOCKET ONE ONE NINE STOP TABULATION BIDS TUNNEL
INNER LINING OPENED OCTOBER THIRTIETH FURNISHED YOU WITH LETTER
TODAY STOP AM RECOMMENDING CITY COUNCIL AWARD TO LOW BIDDER
M H GOLDEN FOUR NAUGHT FOUR CALIFORNIA BANK BUILDING SAN DIEGO
CALIFORNIA FOR FIFTY THREE THOUSAND ONE HUNDRED SEVENTY SEVEN
DOLLARS AND SEVENTY FIVE CENTS STOP TO EXPEDITE CONSTRUCTION
PRIOR TO WINTER RAINS YOUR IMMEDIATE TELEGRAPHIC APPROVAL TO
PERMIT AWARD OF CONTRACT WEDNESDAY MORNING IS URGENTLY REQUESTED.

FRED D. PYLE

11/23/34
copy /f

2719

WESTERN UNION TELEGRAM

1934 NOV 6 AM 10 00

FAL40 9 GOVT-TX WASHINGTON DC 6 1225P

FRED D PYLE HYDRAULIC ENGINEER-

AN ANSWER NL 5 SANDIEGO CALIF-

AWARD TUNNEL LINING CONTRACT TO M H GOLDEN S-TISFACTORY-

MORTON MACARTNEY ACTING CHIEF ENGINEER RECONSTRUCTION

FINANCE CORPN.

CONSULTANTS

L. C. HILL

September 24, 1934

Mr. Louis C. Hill, Consulting Engineer
712 Standard Oil Building
Los Angeles, California.

Subject: San Diego River Project, El Capitan
Feature, tunnel plug.

Dear Mr. Hill:

Enclosed for your information are:

(a) Copy of report of Resident Engineer Harold Wood to the Hydraulic Engineer on outlet tunnel grouting dated August 23, 1934, giving tunnel grouting data in detail.

(b) Print of working drawing showing profile of cutoff wall in relation to the bypass tunnel, grout holes and the amount of grout in cubic feet taken by the holes.

(c) Print of working drawing showing location of the bypass tunnel relative to the surface of the ground after abutment stripping completed.

(d) Copy of report by Assistant Engineer P. Beermann, giving stresses that may occur in event of full hydrostatic pressure on tunnel lining from full reservoir and stresses for various methods of strengthening the lining which were considered.

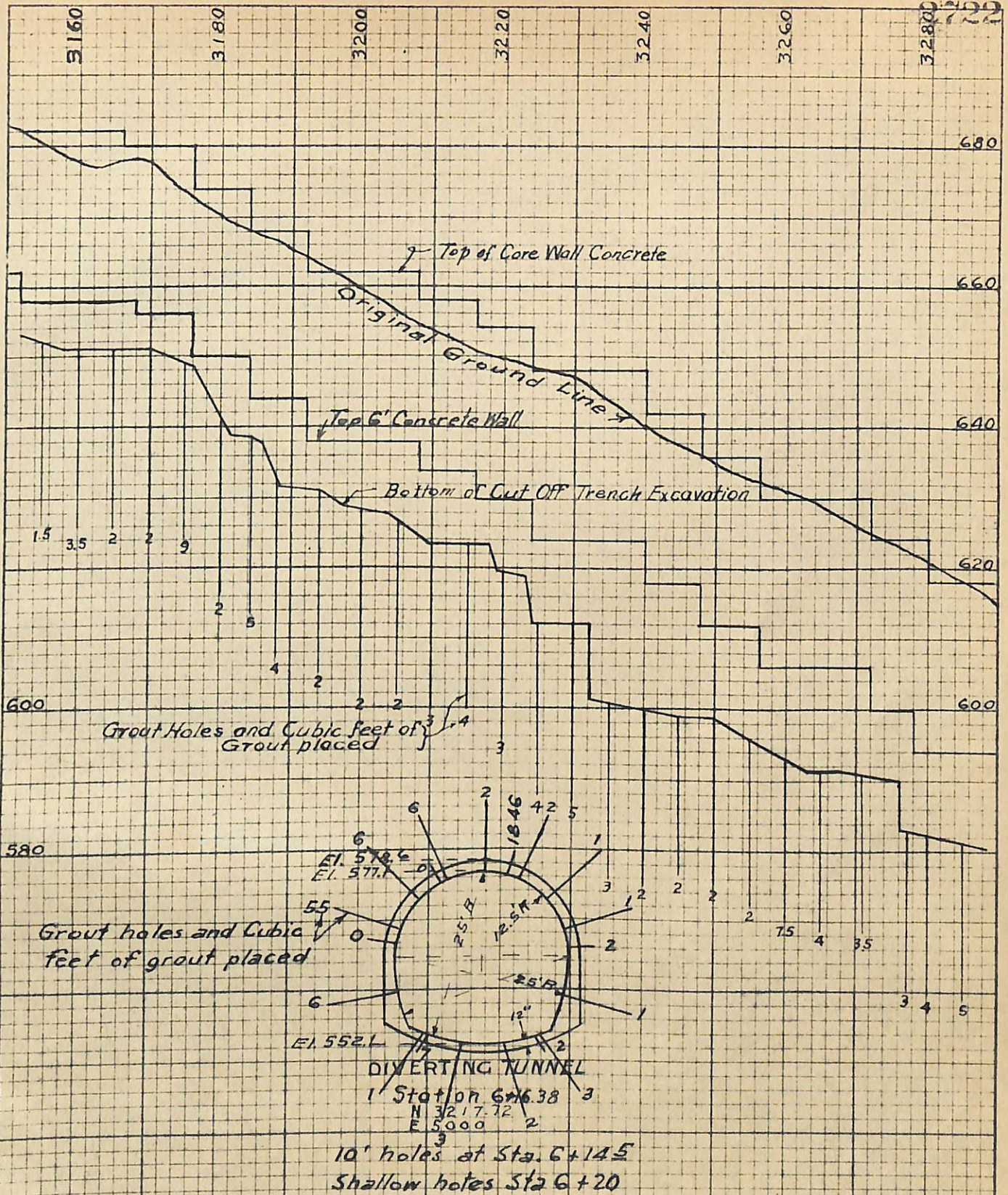
(e) Copy of my report of September 24, 1934 to the City Manager.

Confirmation of your conclusions as to what should be done in order to increase the permanent safety of the bypass tunnel at El Capitan Reservoir Dam, taking into account your personal inspection of the tunnel, the discussion which took place on September 21, 1934, and the above data will be appreciated.

Very truly yours,

Fred D. Pyle
Hydraulic Engineer

FDP/f
encls.



EL CAPITAN DAM

PROFILE OF CUTOFF TRENCH & CORE WALL
 IN RELATION TO DIVERTING TUNNEL
 Scales as shown
 September 18-1934

Note: 770 Elev. Top Completed Dam
 See Resident Engineers Letter
 of Aug. 23, 1934 for complete
 data on tunnel grouting.

QUINTON, CODE AND HILL-LEEDS AND BARNARD
Engineers Consolidated
Los Angeles

September 27, 1934

Mr. F. D. Pyle
City of San Diego
San Diego, Calif.

Dear Mr. Pyle:

I have gone over the design for the new lining of the tunnel to be put inside the present one. There is a great uncertainty, of course, as to how much of the overburden, in addition to the full hydrostatic pressure, will have to be taken care of, but after having Mr. Baumann check up the possible stresses, we believe that the new lining, as suggested by you, will be safe, provided one-inch square steel rings placed 12 inches center to center and 6 inches from the outside face of the dam, and one-half inch square longitudinal steel placed 12 inches center to center be added, and that this would take care of possible increase of pressure due to the load from water and from the rock and fill overburden. We believe that, if this steel is added, you would be safe against collapse of any kind.

It is also suggested as a possibility that instead of using forms you could make this concrete lining of gunite at possibly a reduced expense and with better safety. Whatever method is used, however, the present face of the lining of the tunnel should be cleaned by sandblasting, thoroughly washed down and dampened before the new concrete is placed. The length of this lining should be enough to pass the axis of the dam and well into the rock, which is so firm that no timbering was needed.

In all probability it may be necessary to do some more grouting in the immediate neighborhood of the cutoff wall, besides, of course, the ordinary grouting along the top of the new lining, so as to fill in the space between it and the old lining.

I will take up these matters in detail with you when I come down the next time. I am only writing this at the present time so as to tell you what our present ideas are.

Very truly yours,

LGH/LH

Louis C. Hill.

10/2/34
copy /f

QUINTON, CODE AND HILL-- LERDS AND BARNABD
LOS ANGELES, CALIFORNIA

2724
COPY

October 1, 1934

Mr. F. D. Pyle
Hydraulic Engineer
524 F Street
San Diego, Calif.

Dear Mr. Pyle:

Before the new lining is placed in the tunnel it will be necessary to drill through the present lining, at least wherever moisture appears, and insert drain pipes, which pipes should be longer than the thickness of the new lining. This should be started as soon as possible, so as to have no water getting in between the new concrete and the old. While doing it, it would be to the advantage of the City to extend the distance over which these grout pipes are to be placed, until they reach the lower end of the concrete. Pipes should be inserted in the part that is not going to be covered with concrete and need not stick beyond the surface of the present concrete but a few inches, if at all. If the ends are left threaded, it would be possible in the future to grout and to plug. I suggest this be done without waiting for the main work to be finished. Whether the new lining is put on by gunite or by ordinary concrete methods would make no difference in the installation of these pipes.

Very truly yours,

LOUIS C. HILL (Signature)

LOUIS C. HILL

LCH/LH

QUINTON, CODE AND HILL-LEEDS AND BARNARD
Engineers Consolidated

October 9, 1934

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

Dear Mr. Pyle:

Since talking to you yesterday, I have got the results of the computations of having the tunnel plug built up to springing line. Assuming that we would start with the reservoir filled to 10,000 acre feet at the beginning of Wing's 1000-year flood, and that this opening through the plug be left open until the flood is over, the maximum accumulation in the reservoir would be approximately 75,000 acre feet 36 hours after the beginning of the flood, corresponding to a maximum elevation of water surface at the reservoir of about 720, which is 30 feet below spillway elevation. The reservoir capacity at elevation 750 is 118,000. Therefore, as I said over the phone, there doesn't seem to be the slightest danger of anything happening to the dam by putting in this part of the plug. It is barely possible that the State may raise objections, but I don't think so.

Very truly yours,

LOUIS C. HILL

LCH/AM