Chapter XI

THE ALL-AMERICAN CANAL CONTRACTS

The contracts relating to the All-American Canal, although water-storage contracts within the contemplation of section 5 of the Project Act, are also repayment contracts governed by a number of provisions of the Project Act not applicable to water-storage contracts in general.

The canal is delineated on a map appearing as part of appendix 1106, following page A619.

A. Historical Background

(1) *Construction of Alamo Canal, 1901; Mexican concession, 1904.*—Although appropriations for irrigation of the Colorado River had been initiated in 1895,[1] and water had first been delivered in 1901 via the Alamo Canal built through Mexico,[2] a concession from the Mexican Government was first obtained on May 17, 1904, by execution of a contract between that Government and Sociedad de Irrigacion y Terrenos de la Baja California, S. A. (appendix 1101).[3] This agreement authorized the Sociedad to carry, through the canal which it had built in Mexican territory and through other canals which it might build, water to an amount of 284 cubic meters per second from the waters taken from the Colorado River and territory of the United States by the California Development Co. The concession authorized the Mexican company to carry such water to the lands of the United States, with the exception that—

> From the water mentioned in the foregoing article, enough shall be used to irrigate the lands susceptible of irrigation in Lower California with the water carried through the canal or canals, without in any case the amount of water used exceeding one-half of the volume of water passing through said canals.

[1] See tabulation of filings in S. Doc. 142 (67th Cong., 2d sess.), p. 74. For the earlier history of irrigation plans for this area, see id., p. 71; Report of the All-American Canal Board, 1919 (Government Printing Office, 1920), p. 17 et seq.; Tout, "The First Thirty Years" (1931), p. 25 et seq.; chronology in "Colorado River and Boulder Canyon Project" (Colorado River Commission of California, 1931), p. 225 et seq.; Bull. No. 21, "Irrigation Districts in California" (California Department of Public Works, 1929), p. 334; Sykes, "The Colorado Delta" (1937), p. 108 et seq.

[2] Tout, "The First Thirty Years" (1931), p. 48; Freeman, "The Colorado River," p. 390.

[3] For the full text of this concession, see "Colorado River and the Boulder Canyon Project" (Colorado River Commission of California, 1931), p. 319. Cf. report of the All-American Canal Board (1920), p. 19 et seq.

(2) *Break of 1905.*—The near disaster occasioned by the 1905 sweep of the Colorado River into the Alamo Canal, which took place on Mexican soil, emphasized the dangers of that route.[4] This was aggravated by difficulties with Mexican laws which impeded adequate levee and canal maintenance.

(3) *Early legislation and reports.*—The act of April 28, 1904,[5] directed the Secretary of the Interior to institute investigations of the use of the waters of the lower Colorado River for irrigation, with the view of determining the extent to which its waters might be made available "through works under the National Irrigation Act and by private enterprise," and as to what legislation, if any, was necessary. A report was made, but no action followed.

On January 12, 1907, President Theodore Roosevelt, in his message to the Senate describing the disastrous flood in the Imperial Valley, outlined a rough plan of development under Federal control.[6] No legislation resulted.

On May 9, 1914, Commissioner of Reclamation A. P. Davis addressed a memorandum to Secretary of Interior Lane, on the importance of a secure water supply for the Imperial Irrigation District, emphasizing the danger of interruption of the water supply via the canal which led through Mexico. He said:

> It is imperative that in some way arrangements be made to give the United States jurisdiction over this canal through some allocable arrangement with the Mexican Government. It is believed that the permanent safety of Imperial Valley depends on such an arrangement.

(4) *Temporary weir; injunctions.*—The alternate scouring and silting at the intake of the Imperial Irrigation District's canal in the United States created conditions making it impossible during certain portions of the year to divert enough water to supply the demand, and it was found necessary to use some device to raise the water level in the river in order to permit adequate diversions. To accomplish this, a temporary weir was constructed in 1910, and annually thereafter.[7]

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[4] For the history of the 1905 break, see Sykes, "The Colorado Delta" (Carnegie Institution of Washington, 1937), p. 57 et seq.; id., p. 114 et seq.; S. Doc. 212 (59th Cong., 2d sess.), "Imperial Valley or Salton Sink Region" (1907); Kleinsorge, "The Boulder Canyon Project" (1941), p. 40 et seq.; Tout, "The First Thirty Years" (1931), p. 98 et seq.; report of the All-American Canal Board (1920), p. 26 et seq.; Report of the Senate Committee on Irrigation and Reclamation on S. 728 (S. Rept. 592, 70th Cong., 1st sess. (1928), pp. 16–20).

[5] 32 Stat. 591; report was rendered thereunder January 6, 1905; H. Doc. 204 (58th Cong., 3d sess.).

[6] Congressional Record, 59th Cong., 2d sess., pp. 1028–1029.

[7] "Colorado River and Boulder Canyon Project" (Colorado River Commission of California, 1931), p. 237; Sykes, "The Colorado River" (1937), p. 116 (photograph opposite).

The report of the Senate Committee on Irrigation and Reclamation (S. Rept. 592, 70th Cong., 1st Sess.) on the Swing-Johnson bill (S. 728), said (p. 24):

> On account of the low-lying banks of silt material, it has been found impossible to construct and maintain a permanent diversion weir or dam without flooding the Yuma Valley, now highly productive, under the Yuma reclamation project of the United States. About 1915 it was found, by reason of changes in river channel, that water could not be diverted into the Imperial system without some artificial works in the river. The people of the Yuma Valley obtained an injunction against the construction of such works.[8] The necessity of the case was such, however, that since that time temporary works have been put in the river annually by the Imperial irrigation district under a contract with the Yuma County Water Users' Association [9] by the terms of which the Imperial irrigation district assumes full responsibility for any damages which may result to the Yuma County Water Users' Association, or anyone else on the Yuma project, by reason of such construction, and to guarantee payment the district is required to have executed annually and maintain a surety bond in the amount of $500,000. In addition to this the district agrees to, with all possible dispatch, change its point of diversion to the Laguna Dam, and is required to make bimonthly reports to the War Department as to progress being made.

In connection with the annual construction of the weir, it was necessary to obtain a permit from the War Department.[10]

(5) *Construction of Rockwood heading.*—In 1917, the Imperial Irrigation District constructed Rockwood heading, about a mile and a half above the American border, and a canal 6,000 feet long to connect Rockwood intake with Hanlon heading, at the upper end of the Alamo Canal.[11] The district had also undertaken heavy expenditures in Mexico in levees, dredging, etc.[12]

It was obvious that all these measures were temporary, until such time as construction of storage works should eliminate the flood danger, and the construction of an all-American canal should eliminate the dangers of Mexican control over the water supply. The river had ceased to maintain a continuous outlet to the sea, and was depositing silt in one channel, then another, at the rate of nearly 150,000 acre-feet a year, and building up its bed in places at a rate of several feet

[8] "Colorado River and Boulder Canyon Project," supra, p. 237.

[9] For text of such an agreement, see id., p. 243.

[10] Id., p. 238.

[11] H. Doc. 359 (71st Cong., 2d sess.), pp. 21, 28, 116; Sykes, "The Colorado Delta" (1937), p. 116 (photograph opposite).

[12] For a description of the levee system, see report of the All-American Canal Board, p. 30. See also id., p. 14, citing report rendered March 5, 1917, to the Secretary of the Interior by Messrs. Elwood Mead, D. C. Henny, and Joseph Jacobs. For later data, and a chronological summary of work done 1892–1927; see H. Doc. 359 (71st Cong., 2d sess.), p. 121 (1930). See also S. Rept. 592, 70th Cong., pp. 18–20.

annually. This situation, however, was to continue for nearly twenty years more, until Hoover Dam began to store water in 1934.[13]

(6) *Laguna Dam contract of October 23, 1918.*[14]—Primarily as a result of the difficulties summarized above, the Imperial Irrigation District entered into a contract with the United States on October 23, 1918, under which the survey and early construction of an all-American canal diverting at Laguna Dam was contemplated. For the right to use the Laguna Dam, the district undertook to pay $1,600,000 of its costs, or substantially the whole cost of the main structure, in 20 installments. This provision of the 1918 contract is reprinted herein as appendix 1103, the balance of the 1918 contract having been canceled, but this particular article specifically preserved, by the All-American Canal contract of December 1, 1932 (appendix 1106 herein).

The district agreed to build an all-American canal at as early a date as possible, and within a reasonable time. This contract was ratified by the electors of the Imperial Irrigation District January 21, 1919, although the report of the All-American Canal Board (which had been created in February 1918), infra, had not as yet been made. Subsequently, Secretary of the Interior Lane determined that it was not practicable for the district to build a canal without Federal assistance. Nevertheless, the district was required to make, and did make, payments until the entire $1,600,000 was paid.

(7) *The All-American Canal Board.*—By contract[15] dated February 16, 1918, between the Secretary of the Interior and Imperial Irrigation District, the All-American Canal Board was appointed, consisting of Dr. Elwood Mead (later Commissioner of Reclamation), W. W. Schlecht, and C. E. Grunsky. This Board was asked to submit "specific conclusions and recommendations as to the future policy." On July 22, 1919, it submitted a report,[16] accompanied

[13] For a graphic history of this area, and the losing battle against silt prior to construction of Hoover Dam, see Sykes, "The Colorado Delta" (Carnegie Institution of Washington, 1937). He divides his study into the following periods: (1) The period of relative stability, 1890–1900; (2) the decade of the great diversion, 1900–10; (3) the trend southward to a blind outlet, 1910–20; (4) artificial deflection to the south-south-east, 1920–30; (5) prospects of stability and a tide-water outlet, 1930-35. A supplementary study by the same author, "Delta, Estuary, and Lower Portion of the Channel of the Colorado River 1933 to 1935" records the initial effects of the closure of Hoover Dam, which was effected February 1, 1934.

[14] For the full text of this contract, see Report of the All-American Canal Board (1920), p. 67.

[15] Id., p. 65.

[16] Report of the All-American Canal Board (Government Printing Office, 1920).

by a report of Porter J. Preston, engineer in charge of surveys and examinations. The Board's nine recommendations (appendix 101 herein) included construction of an all-American canal and the construction of large storage reservoirs as a part of the comprehensive development of the Colorado River.

(8) *The Kinkaid Act.*—Following the introduction of the Kettner bills authorizing an all-American canal,[17] but on which Congress did not act, the Kinkaid Act (appendix 102), approved May 18, 1920,[18] directed the Secretary of the Interior to make an investigation and report.

(9) *The Fall-Davis report.*[19]—This report (appendix 103), rendered February 28, 1922, specifically included in its recommendations the construction of an all-American canal.

(10) *The Weymouth report.*—This report (unpublished), representing 2 years' additional work under the Kinkaid Act, made under the direction of Chief Engineer F. E. Weymouth of the Bureau of Reclamation, February 28, 1924, likewise recommended immediate construction of an all-American canal, as well as a storage dam at Boulder or Black Canyon.

Legislation authorizing the construction of the canal did not materialize, however, until enactment of the Boulder Canyon Project Act. The provisions of this act are summarized in chapter IV, and the provisions thereof bearing directly on the All-American Canal are referred to briefly below.

(11) *Coachella Valley.*—This area, which is served by its own branch of the All-American Canal, more than 100 miles long, was described as follows in the Senate committee report on the Swing-Johnson bill (S. Rept. 592, 70th Cong., p. 24):

> Special mention should be made of the conditions of the Coachella Valley, lying at the northern end of Imperial Valley. This valley, like Imperial Valley proper is below the channel of the river and is subject to the river's flood menace. It is not served by the present Imperial system nor can it be served by this system being above the level of the main canal. It secures its water supply from wells fed by waters from the mountains lying to the west and north. The drainage area being small, water levels are constantly going down and people of that section see facing them, in the very near future, the necessity of letting their highly productive ranches go back to desert.

[17] See ch. I (G).

[18] Act of May 18, 1920 (41 Stat. 600).

[19] "Problems of Imperial Valley and Vicinity" (S. Doc. 142, 67th Cong., 2d sess., 1922). See also the report preliminary to this: A. P. Davis, "Preliminary Report on Imperial Valley and Vicinity," published Jan. 1921 for use of the House Committee on Irrigation of Arid Lands (66th Cong., 3d sess.).

B. Provisions of the Boulder Canyon Project Act Relating to the All-American Canal

Section 1 of the Project Act named as one of the purposes of the legislation:

> * * * providing for storage and for the delivery of the stored waters thereof for reclamation of public lands and other beneficial uses exclusively within the United States.

The same section required that the cost of the canal be—

> * * * reimbursable, as provided in the reclamation law, and shall not be paid out of revenues derived from the sale or disposal of water power or electric energy at the dam * * * or for water for potable purposes outside of the Imperial and Coachella Valleys: *Provided, however,* That no charge shall be made for water or for the use, storage, or delivery of water for irrigation or water for potable purposes in the Imperial or Coachella Valleys—

that is to say, the All-American Canal was not to benefit by Hoover Dam revenues but was to be paid for by the lands served. Conversely, these lands were not to bear any part of the cost of construction of Hoover Dam for storage purposes, inasmuch as they had vested rights to the natural flow of the river.

Section 5 of the act, a general provision, authorized the Secretary to contract for the storage of water in the reservoir—

> * * * and for the delivery thereof at such points on the river and on said canal as may be agreed upon.

Section 7 authorized the Secretary, when repayments to the United States of all money advanced for the canal had been made, to—

> * * * transfer the title to the said canal and appurtenant structures, except the Laguna Dam and the main canal and appurtenant structures down to and including Syphon Drop, to the districts or other agencies of the United States having a beneficial interest therein in proportion to their respective capital investments.

Section 7 also provided that—

> * * * The said districts or other agencies shall have the privilege at any time of utilizing by contract or otherwise such power possibilities as may exist upon said canal, in proportion to their respective contributions or obligations toward the capital cost of said canal.

In more detail section 7 stipulated that—

> * * * The net proceeds from any power development on said canal shall be paid into the fund (Colorado River Dam fund) and credited to said districts or other agencies under said contracts, in proportion to their rights to develop power, until the districts or other agencies using said canal shall have paid thereby and under any contract or otherwise an amount of money equivalent to the operation and maintenance expense and cost of construction thereof.

Section 9 directed the withdrawal from public entry of all public lands of the United States found by the Secretary to be practicable

of irrigation, and their subsequent reopening for entry in tracts not exceeding 160 acres, giving preference to veterans.

C. *All-American Canal Contract of Imperial Irrigation District (Appendix 1106)*

(1) *Negotiation* of the All-American Canal repayment contract was initiated in 1930. On November 5, 1930, Secretary Wilbur called on the State (appendix 1002) to recommend an allocation among California water claimants. (See ch. X (D), supra.) This was effected through a seven-party agreement approved by the State August 18, 1931 (appendix 1003).[20]

Following conclusion of the seven-party water agreement, the All-American Canal contract was drafted, being reduced to final form October 3, 1931.

On October 22, 1931, a hearing was held, upon objections which had been filed against execution of the contract. On November 4, the Secretary signed an opinion (appendix 41, first edition), disposing of these objections, and approved the contract as to form.

This contract contemplated the merger of the Imperial and Coachella areas into one district, retaining a borough form of government for each of the two merged districts.

The contract was approved by the electors of the Imperial Irrigation District, but the Coachella landowners decided not to petition for inclusion. Negotiations were resumed in Washington in November 1932, and changes were ultimately approved by the Secretary resulting in elimination of the requirement that the Coachella lands be included as a condition precedent, and substituting an undertaking by Imperial to include these lands on petition within 30 days after the contract was confirmed in judicial proceedings. The contract was executed by the Imperial Irrigation District and the Secretary of the Interior as of December 1, 1932.

(2) *Terms.*—In general, this contract, the major All-American Canal agreement, provided that the United States should build Imperial Dam and the All-American Canal to the Imperial and Coachella Valleys, at a total cost not to exceed $38,500,000 (art. 7). Capacities of various portions of the canal were stipulated (art. 7); these are tabulated in chapter XI (H), table 5, infra. The district agreed to repay its portion of this investment (art. 10 (a)), determined in general by the ratio of capacities provided for various users (art. 21) in 40 annual installments (art. 12), and to operate and maintain the

[20] In *Greeson*, et al. v. *Imperial Irrigation District*, 59 F. (2d) 529 (C. C. A. 9, 1932), affirming 55 F. (2d) 321 (D. C. Cal., 1931), an injunction was refused against consummation by Imperial Irrigation District of the seven-party agreement of California water agencies of August 18, 1931 (appendix 1003 herein).

works (art. 8), subject to a proration of such costs on a basis of capacities (art. 13). The district was granted the right (accorded by section 7 of the project act) to develop power possibilities on the canal (art. 14), except that the United States reserved the right to use for power purposes the water carried in the All-American Canal to Syphon Drop for the Yuma project (art. 15). The district was required to pay for an added 2,000 second-feet of capacity from Imperial Dam to Syphon Drop, to transport this water for the Yuma project (art. 15), and to continue to pay (art. 16) a total of $1,600,000 toward the cost of Laguna Dam (substantially the whole cost of that dam, built in 1909 for the Yuma project), as the district's 1918 contract with the Government (appendix 1103) had required it to do, notwithstanding that the district had never, in fact, utilized Laguna Dam, and was herein obligating itself to pay for a different diversion structure, Imperial Dam. The United States agreed to deliver water at Imperial Dam (art. 17) in accordance with the seven-party California priority agreement (appendix 1003). The Government reserved the right to contract with other users prior to transfer of operation and maintenance, and increase the capacity of the canal, prorating the financial obligations (art. 21). Title was to remain in the United States except that, as provided in section 7 of the project act, the Secretary may transfer title to the works below Syphon Drop to the beneficiaries after completion of repayment (art. 22). The district was required to enlarge its boundaries to add about 300,000 acres of public lands on the East and West Mesas adjoining Imperial Valley (art. 35). The agreement, of course, was subject to the Colorado River Compact (art. 29).

(3) *Validation.*—The contract of December 1, 1932, was approved in validation proceedings by the Superior Court of Imperial County on May 24, 1933.[21] An appeal was taken to the Supreme Court of California by the Coachella Valley County Water District. By stipulation of the parties, the appeal was dismissed by the supreme court on February 14, 1934, an agreement of compromise having been entered into between the two districts (appendix 1107, infra).

D. Agreement of Compromise, Imperial and Coachella Districts, 1934 (Appendix 1107)

By this agreement, dated February 14, 1934, the two districts agreed that Coachella should execute an independent All-American Canal contract with the United States instead of merging with Imperial Irrigation District; that Coachella would dismiss an appeal then pend-

[21] *"In the Matter of the Validation of a Contract Dated December 1, 1932"* (No. 15460), and *Molan* v. *Imperial Irrigation District* (No. 15454), Superior Court, Imperial County, Calif., opinion dated May 24, 1933 (unreported).

ing from the decree validating Imperial's All-American Canal contract (supra); that Imperial should have the prior right to all waters allocated in the third and sixth priorities set out in the recommendation of the Chief of the Division of Water Resources (appendix 1003), and Coachella the next right. The relative interests of the two districts in power operations on the canal were defined.

This agreement opened the way to a separate All-American Canal contract by the Coachella district, referred to below.

E. All-American Canal Contracts of Coachella Valley County Water District (Appendix 1108)

On October 15, 1934, the Coachella Valley County Water District and the Secretary of the Interior entered into an agreement (appendix 1108) constituting a repayment agreement for a portion of the cost of the All-American Canal chargeable to the lands within the Coachella Valley County Water District, and providing for the delivery of water via the All-American Canal and the Coachella branch to that area.

Subsequently, the Reclamation Bureau undertook the construction of distribution works for the Coachella project. To facilitate this, the act of June 26, 1947 [22] (appendix 1104), authorized such construction, the Secretary made a finding of feasibility July 24, 1947 (appendix 1109), allocating part of the investment in the Coachella Canal embankment to flood control, making some $4,500,000 nonreimbursable, and the United States and the district entered into a contract on December 22, 1947 (appendix 1110), for the repayment of the cost of the distribution works.

F. All-American Canal Contract: City of San Diego (Appendix 1111)

On February 15, 1933, the Secretary had entered into an agreement with the City of San Diego (appendix 1009), providing for the storage and delivery of water to that city, and reciting that the parties proposed to enter into an agreement for the utilization of the All-American Canal for that purpose.

On October 2, 1934, the same parties entered into a contract (appendix 1111), obligating San Diego to pay a pro rata proportion of the investment in the All-American Canal, and entitling the city to utilize 155 second-feet of capacity to take delivery of the water (up to 112,000 acre-feet annually), provided for in its agreement with the Secretary of February 15, 1933 (appendix 1009).

[22] Public Law 121 (80th Cong.).

The designs for the canal were accordingly amended to provide for an increased capacity, to serve San Diego, and the canal as constructed provides that capacity.

Later, however, as indicated in chapter XII, San Diego elected to join the Metropolitan Water District and take water via an extension of that district's aqueduct, from the junction at San Jacinto to the City of San Diego reservoir at San Vicente. The city remains obligated for its proportionate part of the All-American Canal costs, notwithstanding.

G. Construction of the All-American Canal

Construction of the main All-American Canal commenced August 8, 1934. Imperial Dam was begun in January 1936. The branch canal to Coachella Valley was started in August 1938. Imperial Dam and the All-American Canal head works were dedicated by the Secretary of the Interior October 18, 1938. The main All-American Canal was dedicated by Commissioner of Reclamation John C. Page on October 12, 1940. The first official delivery of water through the All-American Canal to Imperial Irrigation District occurred October 13, 1940. The entire supply for the Imperial Irrigation District has been furnished through the All-American Canal since March 1942. The Coachella branch canal is scheduled for completion in 1950.

Imperial Dam [23] is a concrete structure in the main stream of the Colorado, about 18 miles above Yuma. In general, the dam and appurtenant structures, having an over-all length of 3,485 feet, may be divided into six divisions: the California abutment, the All-American Canal headworks (which are a part of the canal but built into the dam structure), the sluiceway, the overflow weir, the Gila headworks (which are a part of the Gila main canal but built into the dam structure), the Arizona abutment and dike. The overflow weir constitutes the central portion, 1,197.5 feet long and rising about 43 feet above the stream bed. The dam provides the diversion point for the All-American Canal on the California side and the Gila Canal on the Arizona side. Laguna Dam, about 4 miles downstream, is now in effect a tailwater control for the upper dam. Imperial Dam created a reservoir with an initial capacity of 85,000 acre-feet, but not for storage purposes, as it began to fill rapidly with silt, as anticipated.

The All-American Canal [24] headworks at the western end of Imperial Dam, 386 feet long, provide a diversion of 15,155 cubic feet per second. Four desilting basins (three now in operation) are provided

[23] For a description of Imperial Dam in more detail, see 29 Reclamation Era 28 (1939).

[24] For a description of the All-American Canal, see hearings, House Committee on Appropriations, on the Interior Department appropriation bill for the fiscal year 1949, p. 1597 et seq. The route and design were based on a report by H. J. Gault (1931).

at the headworks. The canal follows the river for the first 22 miles. The initial capacity is maintained for 15 miles to Syphon Drop, at which point 2,000 second-feet, carried for the Yuma project, is delivered to the Syphon Drop power plant. This plant, although located on the California side, is operated by the United States for and as a part of the Yuma project, Arizona. A portion (approximately 800 cubic feet per second) of this is carried under the river through a siphon to the Yuma Canal system, and the balance is discharged into the river through the Syphon Drop power plant.

A capacity of 13,155 cubic feet per second is maintained for the next 7 miles, to Pilot Knob. At this point, water may be discharged into the river either through the projected Pilot Knob power plant, or the Pilot Knob wasteway. In either event, it reaches the river above the Mexican boundary and above the works controlling the heading of the Alamo Canal. These works are in the United States. They comprise Rockwood Gate, which controls the amount diverted from the river into the headworks of the Alamo, and Hanlon Heading, which controls the amount thereof passing from the headworks into Mexico. These control works are to be operated and maintained by the International Boundary and Water Commission under the terms of the Mexican water treaty (appendix 1405). No part of the water carried by the All-American Canal can be physically diverted into Mexico except through structures (Rockwood Gate and Hanlon Heading) controlled by the International Boundary and Water Commission.

The All-American Canal turns west at Pilot Knob, roughly paralleling the border, with a capacity of 10,155 cubic feet per second for 14 miles to drop No. 1. At that point the Coachella branch takes out, with a capacity of 2,500 second-feet. This branch is 119 miles long, carrying water to the Coachella Valley. (See ch. XI (E) above.) Of this 2,500 cubic feet per second, 1,000 is carried for Imperial Irrigation District, for use on the East Mesa, which this branch traverses for 49 miles. Beyond that point, the capacity, now reduced to 1,500 cubic feet per second, is maintained to the boundary of the Coachella district, where it gradually tapers off to 425 cubic feet per second.

The main canal from the junction of the Coachella branch (drop No. 1) continues west 44 miles, gradually reducing in capacity from 7,655 to 2,655 cubic feet per second.

The main All-American Canal is thus 80 miles long, and the Coachella branch 119; water is carried for Coachella a total of 155 miles, including the common sections.

The Gila Canal (referred to in ch. XII (H)) takes off from the headworks at the eastern end of Imperial Dam to serve lands of the Gila project, Arizona.[25]

[25] For a description of the Gila project, see hearings, House Committee on Appropriations, or the Interior Department Appropriation Act for Fiscal Year 1949, p. 1156.

H. Summary of Interests in All-American Canal

In general, the various All-American Canal contracts provide that costs shall be allocated on the basis of capacities assigned to each agency, except that the capacity for the Yuma project is to be provided without cost to that project or the United States, save for turn-out structures. The share of the Gila project in the cost of Imperial Dam and certain portions of the All-American Canal has not been determined as of the date of publication. The Reclamation Bureau to date has not published tables setting up either the allocation of costs nor basis for determining allocations. The assignment of capacities in various portions of the canal is shown on the following table:

TABLE 5.—*All-American Canal: Assignment of capacities*

Section of canal	Length in miles	Capacity in cubic feet per second				
		Total	Imperial Irrigation District	City of San Diego	Coachella Valley County Water District	Yuma project
Main All-American Canal:						
Head works and canal to Siphon Drop	15	15,155	11,500	155	1,500	[1] 2,000
Siphon Drop to Pilot Knob	7	13,155	11,500	155	1,500	----------
Pilot Knob to drop No. 1 (Coachella Canal turn-out)	14	10,155	8,500	155	1,500	----------
Drop No. 1 to end of canal	44	7,655–2,655	7,500–2,500	155	----------	----------
Total	80	----------	----------	----------	----------	----------
Branch canal to Coachella:						
Head (drop No. 1) to north end of Imperial Irrigation District	49	2,500–1,500	1,000–0	----------	1,500	----------
North end of Imperial Irrigation District to end of canal	70	1,500–425	----------	----------	1,500–425	----------
Total	119	----------	----------	----------	----------	----------

[1] Cost of capacity for Yuma project is charged to other contractors. Yuma project pays cost of turn-out structures only.

NOTE.—Imperial Dam is a part of the All-American Canal and also serves the Gila project in Arizona (2,400 cubic feet per second).

I. Effect of the Mexican Water Treaty on the All-American Canal

The treaty with Mexico, February 3, 1944 (appendix 1405), contained a number of provisions relating specifically to the All-American Canal. Article 11 (c) of the treaty provides that after Davis Dam and Reservoir are placed in operation (see appendix 1214, re Davis Dam) until January 1, 1980, the United States shall deliver 500,000 acre-feet annually, and after January 1, 1980, 375,000 acre-feet annually, at the international boundary line by means of the All-American Canal. Article 12 (b) obligates the United States to construct Davis storage dam and reservoir within 5 years from the date of the entry into force of the treaty (which was November 8, 1945).

Article 12 (c) obligates the United States to construct or acquire works necessary to convey a part of the waters allotted to Mexico to the Mexican diversion points on the international land boundary. Article 14 provides that in consideration for the use of the All-American Canal for the delivery of water to Mexico as provided in articles 11 to 15, Mexico shall pay to the United States its proportion of the cost incurred in the construction of Imperial Dam and the section of the All-American Canal from Imperial Dam to Pilot Knob, and a proportionate part of the annual cost of operation and maintenance of these facilities. Article 14 (b) provides that in the event revenues from the sale of hydroelectric power generated at Pilot Knob become available for the amortization of part or all of the cost of the facilities named in article 14 (a), the part that Mexico shall pay of the cost of these facilities shall be reduced or repaid in the same proportion. Such revenues shall not become available until the cost of any works constructed for the generation of power are fully amortized from revenues derived therefrom. Article 15 provides for the setting up of an annual schedule to cover the delivery of water at the boundary line by means of the All-American Canal, the schedule to be formulated by the International Boundary and Water Commission, subject to certain limitations. By article 15 (d), the United States declared its intention to cooperate with Mexico in attempting to supply additional quantities of water under certain circumstances through the All-American Canal, if such use of the canal and facilities will not be detrimental to the United States, provided that such deliveries shall not have the effect of increasing the total schedule of deliveries to Mexico.

These provisions are at variance with the stipulation in section 1 of the Boulder Canyon Project Act [26] that the Hoover Dam and All-American Canal should be constructed—

> for storage and for the delivery of the stored waters thereof for reclamation of public lands and other beneficial uses exclusively within the United States—

and the authorization in that section for construction of—

> a main canal and appurtenant structures located entirely within the United States, connecting * * * with the Imperial and Coachella Valleys in California—

as well as the provisions in section 7 granting to American districts and agencies the right to develop power and apply the net proceeds as stipulated in that section. So also with section 7, providing for the transfer of title of certain parts of the canal to the American districts interested.

As of this writing, negotiations between the affected districts and the United States to accomplish the adjustments made necessary by the treaty are under way, but have not been consummated. [27]

[26] Act of December 21, 1928 (45 Stat. 1057) (appendix 401 herein).

[27] See further references in ch. XIV.

J. Transfer of Operation and Maintenance of the All-American Canal

On February 28, 1947, the Secretary of the Interior transferred to the Imperial Irrigation District operation and maintenance of the main All-American Canal west of engineer station 1098 (Pilot Knob). As of this writing the operation and maintenance of Imperial Dam, the portion of the main canal from Imperial Dam to Pilot Knob, and the Coachella branch, have not been transferred.[28]

[28] See hearings, House Committee on Appropriations, Interior Department appropriation bill for fiscal year 1949, pp. 1597–1614.