62D CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { DOCUMENT No. 95.

BRAZOS RIVER, TEX.

LETTER

FROM

THE ACTING SECRETARY OF WAR,

TRANSMITTING,

WITH A LETTER FROM THE ACTING CHIEF OF ENGINEERS, REPORTS ON PRELIMINARY EXAMINATION AND SURVEY OF BRAZOS RIVER, TEX., WITH A VIEW TO THE SELECTION OF SITES FOR THE ADDITIONAL LOCKS AND DAMS BETWEEN OLD WASHINGTON AND WACO.

JULY 22, 1911.—Referred to the Committee on Rivers and Harbors and ordered to be printed, with illustration.

WAR DEPARTMENT,
Washington, July 19, 1911.

SIR: I have the honor to transmit herewith a letter from the Acting Chief of Engineers, United States Army, of this date, together with copies of reports from Capt. A. E. Waldron, Corps of Engineers, dated June 5, 1909, and December 23, 1910, with map, on preliminary examination and survey, respectively, of Brazos River, Tex., made by him in compliance with the provisions of the river and harbor act of March 3, 1909.

Very respectfully,

ROBERT SHAW OLIVER,
Acting Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, July 19, 1911.

SIR: I have the honor to submit herewith, for transmission to Congress, reports dated June 5, 1909, and December 23, 1910, with map, by Capt. A. E. Waldron, Corps of Engineers, on preliminary examination and survey, respectively, called for by the river and harbor act approved March 3, 1909, of Brazos River, Tex., with a view to the selection of sites for the additional locks and dams between Old Washington and Waco.

The existing project for improvement of Brazos River is printed in House Document No. 705, Fifty-ninth Congress, first session, and provides for securing, mainly by means of locks and dams, a navigable depth of 4 feet for four months and a depth of 3½ feet for six months each year up to Waco. Under this project Lock and Dam No. 1, at Hidalgo Falls, near Navasota, Tex. (mile 260), is under construction, and an appropriation has been made by Congress for beginning construction of No. 8.

The item providing for this examination has been interpreted in this office to require that investigations thereunder be restricted to securing the definite information stated in the law, namely, sites for the additional locks and dams; and the scope of the present investigation has been confined to that object without any discussion of the merits of the improvement.

The district officer recommends approximate locations for the seven additional locks and dams and states that these locations have been selected with the idea of interpolating eight other locks and dams, as shown in the profile on the index sheet herewith, which would with full pools provide at least 6-foot depth over all shoals from Lock and Dam No. 1 to Waco. It is understood that sufficient land for all Government requirements at each lock site will be provided free of cost to the United States.

After reviewing these reports, as required by law, the Board of Engineers for Rivers and Harbors concurs with the division engineer in the opinion that, under the interpretation stated above, the sites indicated appear to be as satisfactory as any that could be selected, and recommends their adoption subject to such modifications as more detailed investigations at the time of construction indicate to be desirable.

I concur in the opinion of the district officer, division engineer, and Board of Engineers for Rivers and Harbors, as stated above.

Very respectfully,

EDW. BURR,
Acting Chief of Engineers.

The SECRETARY OF WAR.

PRELIMINARY EXAMINATION OF BRAZOS RIVER, TEX., BETWEEN OLD WASHINGTON AND WACO.

WAR DEPARTMENT,
UNITED STATES ENGINEER OFFICE,
Dallas, Tex., June 5, 1909.

SIR: Section 13 of the river and harbor act approved March 3, 1909, the last two lines of paragraph headed "Texas," reads:

Brazos River, with a view to the selection of sites for the additional locks and dams between Old Washington and Waco.

I have the honor to make the following preliminary report on this item:

In paragraph 3 of letter from the Chief of Engineers dated March 22, 1909, appears the following:

The preliminary examination will approximately locate the locks and dams and the survey, if ordered, carefully test the foundations, etc., and lay out and describe the lands necessary to be acquired, with an estimate of the cost of such lands, etc., only.

To comply with these instructions, an office location was made of the seven additional dams, and an examination of the sites selected made. As a result of this examination and from other information available (consisting principally of records of a survey made in 1900, while this river was in the Galveston district) the following remarks are appropriate to each location:

Dam No. 2 was provisionally located at mile 303¾. This is a site selected by Maj. Jadwin and is in the vicinity of Lock No. 17, as selected by Col. Riché. This location seems to be about the best that can be selected in view of the present data.

Dam No. 3 was provisionally located at mile 339¾, just below Port Sullivan shoals and rapids. Maj. Jadwin proposed a dam between miles 336 and 340. Col. Riché had his nineteenth dam approximately at mile 330. The only change that the field examination has suggested in this location is to move the site above the Port Sullivan highway bridge, as in that case it would be unnecessary to raise the bridge as high as if the dam was located below it, although it is believed that the best site is below the bridge, or the one provisionally located. Locating No. 3 at this point will back the water up to the provisional location of No. 4.

Dam No. 4 was provisionally located at mile 348½. This is at the foot of a stretch of the river containing many shoals. Maj. Jadwin proposed to cross these shoals with 2 locks, which called for a total of 7 locks, but it is thought necessary to use 3 locks in this stretch of the river. This would be in conformity with the project calling for 7 additional locks and dams. This is in the near vicinity of the point where Col. Riché's dam No. 21 would be located. The field examination shows that there has been considerable change in the river at this point. At the selected location was found a rapidly caving bank, which indicated that a better location would be about 3,000 feet farther down the river in a comparatively straight reach, near the vicinity of Wildcat Bridge, a bridge which has been placed across the river since the survey of 1900.

Dam No. 5 was provisionally located at mile 352. The field examination indicates that a shorter length of dam might be used if the location was moved down to the foot of the shoals. Moving it down would lower the pool level of No. 5, and as this occurs in a stretch of the river with comparatively little fall it would reduce somewhat the pool length, but on the other hand the pool level of Dam No. 4 would be lowered. The best location can only be decided after more definite information in regard to foundations has been collected. Maj. Jadwin suggested a dam at the location of Col. Riché's dam, No. 23. This would fall approximately at mile 367, and would back waters over shoals and rapids 4 miles above. But the character of the river as indicated by profile is such that it is thought best to dredge these shoals and locate the dam farther up where the slope is steeper.

Dam No. 6 was provisionally located at mile 376, but field examination indicates that it would be advisable to move it down to mile 375. But in doing this a levee might be required, as the survey of 1900 indicates the left bank at a height of 8 feet. There are no contours upon this map to indicate what land would be flooded by the various pools.

Dam No. 7 was provisionally located at mile 382$\frac{1}{10}$, or at the point where No. 6 would back water 6 feet deep over the lower sill of its lock. Here the field examination also indicated that it might be advisable to move the dam down to mile 382. The left bank is very low, and a levee or levees, of considerable length, might be required. The Falls of the Brazos have considerable drop and would require a lock with a 15-foot lift to carry boats over them. If satisfactory foundations can be found it would be more advisable to locate this dam as near the foot of the falls as possible. But the river at this present date differs considerably from that shown by the map, the left bank having cut away to a great extent. People living in this vicinity say that the changes since 1900 have been so great that it would hardly be recognized as the same river.

Dams Nos. 6 and 7 are located in the near vicinity of two recommended by Maj. Jadwin to be located at points recommended by Col. Riche for his Dams Nos. 25 and 26.

Dam No. 8 was provisionally located at mile 411, which is 20 miles above the point recommended by Maj. Jadwin for his last dam, or the one which corresponds to Col. Riche's dam, No. 28. It was thought advisable to move this dam up to a point where it would give slack water for the city of Waco to provide harbor facilities. The field examination indicates that the river at this point is very wide and shifting, and that a better location would be 2$\frac{1}{2}$ miles farther upstream at mile 413$\frac{1}{2}$. This would give deeper and better water at Waco, and avoid having a very wide pool just above the dam, which would be the case if the dam was moved down the river to the first favorable location.

Maj. Jadwin thought it advisable to so locate the dams that by allowing about one-tenth-foot fall per mile in pool levels this slope would provide 4 feet depth over some of the shoals.

This reasoning is all right when one considers only the navigation sought by the present improvement, but it would so locate the dams that in case it was ever decided to interpolate others these first locations would be undesirable.

The field examination indicates clearly that it is entirely impracticable to make a judicial location of the additional dams with the data at present available. Before fixed locations can be selected it is necessary that a resurvey of the river be made from Waco down as far as at least Dam No. 2, to show the changes that have taken place since the survey of 1900.

As material changes have appeared in the plan of the river, it is suspected that there are large ones in the profile also. The notes of the profile of 1900 in this section of the river are not as complete as those below Navasota or Lock No. 1. This is clearly shown by the blue print inclosed herewith giving the profile of the entire river. Below Old Washington it is very uneven, while above, where improvements by lock and dam are projected, it is more rolling, indicating fewer soundings.

For these reasons I have the honor to recommend that a survey be ordered for that portion of the river above Lock and Dam No. 1 in order that the changes which have taken place in the river since 1900 may be determined and that more data will be available to show the amount of land the various pools will overflow, and to indicate the amount of open-river improvement work that will be necessary between pools.

At present no more definite locations can be made than those given without additional data to that now on hand.

It is estimated that this survey would cost $8,000.

Four thousand dollars was allotted for the preliminary examination. Of this amount $193.22 has been expended.

Very respectfully, your obedient servant,

A. E. WALDRON,
Captain, Corps of Engineers.

THE CHIEF OF ENGINEERS, U. S. ARMY
(Through the Division Engineer).

[First indorsement.]

OFFICE DIVISION ENGINEER, GULF DIVISION,
New Orleans, La., June 11, 1909.

Respectfully forwarded to the Chief of Engineers, United States Army, concurring in the recommendation of the district engineer that a detailed survey of Brazos River is necessary to furnish data for the proper selection of sites for the dams contemplated.

LANSING H. BEACH,
Lieut. Col., Corps of Engineers,
Division Engineer.

[Third indorsement.]

BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
Washington, D. C., June 21, 1909.

Respectfully returned to the Chief of Engineers, United States Army.

The board has already reported against the improvement of this river by locks and dams between Old Washington and Waco.

The river and harbor act of March 3, 1909, called for an examination of "Brazos River, with a view to the selection of sites for the additional locks and dams between Old Washington and Waco." The district officer and the division engineer have reported that a survey is necessary to select these sites.

The board concurs with that statement, but expresses no opinion as to the advisability of constructing the additional locks and dams of the improvement, it being in doubt as to whether such opinion is desired in this case. If such opinion is desired, then it is recommended that the necessary commercial information be obtained, together with the opinions of the district officer and division engineer.

For the board:

D. W. LOCKWOOD,
Colonel, Corps of Engineers,
Senior Member of the Board.

[Fourth indorsement.]

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, June 30, 1909.

Respectfully submitted to the Secretary of War.

This is a report on preliminary examination of Brazos River, Old Washington to Waco, Tex., authorized by the river and harbor act of March 3, 1909.

Inviting attention to the report of the Board of Engineers for Rivers and Harbors in the preceding indorsement, I recommend that a survey of the locality, as proposed, be authorized.

W. L. MARSHALL,
Chief of Engineers, United States Army.

[Fifth indorsement.]

WAR DEPARTMENT, *July 1, 1909.*

Approved.

ROBERT SHAW OLIVER,
Acting Secretary of War.

SURVEY OF BRAZOS RIVER, TEX., BETWEEN OLD WASHINGTON AND WACO.

UNITED STATES ENGINEER OFFICE,
Dallas, Tex., December 23, 1910.

SIR: Section 13 of the river and harbor act approved March 3, 1909, contained an item:

The Secretary of War is hereby authorized and directed to cause preliminary examinations and surveys to be made at the localities named in this section, as hereinafter set forth, and a sufficient sum to pay the cost thereof may be allotted from the amount appropriated in this section. * * * Brazos River, with a view to the selection of sites for the additional locks and dams between Old Washington and Waco.

A preliminary examination was made of the locality affected, and report thereon submitted June 5, 1909, stating that a detailed survey was necessary to furnish data for the proper selection of sites for the locks and dams contemplated. This statement was concurred in by the Board of Engineers for Rivers and Harbors, and survey ordered by the Chief of Engineers under date of July 6, 1909.

The phraseology used in the above-quoted excerpt from the river and harbor act approved March 3, 1909, indicates that Congress has adopted the project recommended by Maj. Jadwin and published in House Document No. 705, Fifty-ninth Congress, first session, and that the information desired is that concerning the locating of 7 additional locks and dams.

As a result of the survey made under this authority, I have the honor to recommend that the seven additional locks and dams be placed at approximately miles 302, 339, 347.7, 351.6, 376, 383.8, and 418, above the mouth of the river, respectively.

Circular letter from the office of the Chief of Engineers, dated March 12, 1909, as modified by circular letter dated September 13, 1910, directs that certain information be given in all reports made in connection with preliminary examinations and surveys. In accordance with these directions, the following general conditions found existing on the Brazos River are given:

The Brazos River is said to have a length of over 900 miles, rising in New Mexico, and has a watershed of 36,000 square miles. It flows from Waco to the Gulf of Mexico in a southerly direction, through fertile bottom lands from 2 to 8 miles wide. A large percentage of these lands is under cultivation. These bottom lands are generally overflowed from 1 to 10 feet deep one or more times a year in ordinary seasons.

BANKS.

The banks of the upper Brazos River are, as a rule, composed of a loamy earth which is easily eroded. Instances of cut-offs and caving banks were more marked and numerous in the section of the river above the mouth of Little River than in the section below it. The average height of the banks is about 30 feet above low water. There is a thin strip of trees on the river bank for most of its length, and at a few places there are considerable bodies of land covered with hardwood timber.

FALL.

There is a total fall in the Brazos River between Waco, Tex., and Lock and Dam No. 1 of 210.6 feet in a distance of 170.3 miles, giving an average fall per mile of 1.24 feet. There is not, however, an even fall throughout the whole length. At the Falls of the Brazos there is almost a perpendicular drop of the water of about 4 feet. At several places there are rock shoals which have a fall of 2 to 8 feet in less than a mile; and there are numerous places caused by sand or gravel bars where the fall is much greater than the average for the whole distance.

SNAGS AND OTHER OBSTRUCTIONS.

There are comparatively few snags in the upper Brazos River. No attempts have been made to clear the channel of snags.

There are two small falls in the upper Brazos, the Falls of the Brazos at mile 384.7, with rock shoals and rapids, extending above the falls to mile 385.3, and Hidalgo Falls at mile 260.

In addition to these two falls, there are several rock shoals in the upper Brazos.

Above mile 337.6, at the mouth of Little River, there are numerous shallow places in the river, caused by sand and gravel bars. The location and size of the sand bars are often materially changed by floods in the river. The channel of the river, which is from 1 to 300 feet wide, in periods of low water is constantly changing at many places.

BRIDGES.

There are 4 railroad and 10 public highway bridges across the upper Brazos River. None of these bridges have draw spans, and none of them have 50 feet clearance over and above low water. The following table gives the name and mileage of the railroad bridges: Gulf, Colorado & Santa Fe Railway, at mile 271.5; International & Great Northern Railroad, at mile 335.3; Missouri, Kansas & Texas Railroad, at mile 429; St. Louis & Southwestern Railroad, at mile 429.1.

RESOURCES.

Coal.—There is one small coal mine in operation near the Brazos River at mile 350, near Calvert, Tex.

Rock, sand, and gravel.—There is a rock quarry in operation near the Brazos River, at mile 275. There is a large quantity of good sand and gravel in the bed of the Brazos River.

Cotton.—A large amount of cotton is raised in the Brazos River Valley. It is probably the only agricultural product that would be shipped in large quantities on the river if it were navigable.

WATER POWER.

There are no sites on the upper Brazos River where water-power plants could be installed to advantage to run all the year round, whether in connection with locks and dams or not. The discharge of the river is not sufficiently uniform; to make a project a success large impounding reservoirs would be necessary.

WHARF FACILITIES.

There are no wharf facilities for commercial purposes on the upper Brazos River. The first favorable place above Lock and Dam No. 1 is where the Gulf, Colorado & Santa Fe Railway crosses the river at mile 271.5. The second favorable place is at the terminus of the Houston & Brazos Valley Railroad at mile 312. The third favorable place is at mile 335.34, where the International & Great Northern Railroad crosses the river. The fourth favorable place is at Waco, Tex., a city of about 30,000 inhabitants, which has six railroads. There are no public grounds at any except the last-named place for wharves.

The city of Waco owns about 4,000 feet of river front on the west bank of the Brazos River. This river front will average over 100 feet in width. Of this 4,000 feet of river front, the city of Waco has leased all but 2,200 feet to private parties. If wharves are built on the river front owned by the city of Waco, it will be practicable to build spur tracks on to them from one or more railroads.

COMMERCE.

At present there are no boats operating on the upper Brazos River in a commercial way. They are confined entirely to skiffs, and one or two launches provided for pleasure purposes. If the Brazos River is used in a commercial way, the principal article carried upon it will be cotton.

Without going into the question as to whether the amount of commerce moved on the Brazos River when thoroughly improved will justify the expense of improving the same, it is well to call attention to the fact that cotton, which is by far the greatest agricultural product of the country contiguous to the Brazos River, goes to the market during the months of September, October, November, December, and January, which is the particular time when the rivers of Texas are at their lowest.

It is absolutely impracticable to use the Brazos River in its natural state during this period of the year. So the only improvement which will at all be a benefit to the country will be that of slack water from Waco down almost to the mouth.

To give an idea of the low-water discharge of the Brazos River it might be well to state that Prof. T. U. Taylor, of the University of Texas, caused the discharge of the Brazos River at Waco to be

measured and obtained, on March 8, 1902, 19 cubic feet per second; on May 2, 1907, 100 cubic feet per second; on April 5, 1909, 6 cubic feet per second; and on August 25, 1910, 6 cubic feet per second.

On October 13, 1910, a party from this office measured the discharge of the Brazos River at Waco and obtained a reading of 27.6 cubic feet, with the gauge reading 1.6 feet. The lowest reading on the gauge at Waco between April 9, 1907, and November 30, 1910, is 0.9 foot, that of November 30, 1910.

LOCATION OF LOCKS AND DAMS.

The locations of the seven additional locks and dams between Lock and Dam No. 1 (already provided for at the foot of Hidalgo Falls, near Navasota, Tex.) and Waco, Tex., were selected with the idea of being able to interpolate other locks and dams.

The 7 additional locks and dams, with the 8 interpolated locks and dams shown in broken lines on the profile on the index sheet, would, with full pools, provide slack water with at least 6 feet of water over all shoals from Lock and Dam No. 1 to Waco.

Of these 7 locks and dams, 5 were located below rock shoals or falls, so that water backed up by the dams would be at least 6 feet deep over these rocks, and in the case of Locks and Dams Nos. 3, 4, and 6 slack water will reach into the lock just above.

Lock and Dam No. 6 is located in a section of the river having considerable fall, and on the profile (see sheet No. 12 accompanying[1]) the upper pool level is shown very close to the top of the bank, but the banks here are the first banks of the river. The second banks are farther back and from 10 to 15 feet higher. In this case it will be necessary to build levees from the abutments back to the second banks to prevent the river from washing around the dam in case accident should catch the dam up during a flood.

Lock and Dam No. 8 is so located that it would give 6 feet of slack water at Waco, Tex.

The following table gives the mileage, elevation of low water at the lock site, the upper pool level, and the average slope of the water per mile between sites:

Number of Lock.	Mileage.	Elevation of low water at lock sites.	Upper pool level.	Average fall per mile of water surface between sites—
		Feet.		
1	259.7	160.3	177	Nos. 1 and 2, 0.85 foot.
2	302.0	196.5	214	Nos. 2 and 3, 1.16 feet.
3	339.0	239.9	257	Nos. 3 and 4, 1.83 feet.
4	347.7	255.1	268	Nos. 4 and 5, 1.80 feet.
5	351.6	262.0	280	Nos. 5 and 6, 1.44 feet.
6	376.0	297.3	316	Nos. 6 and 7, 1.95 feet.
7	383.8	312.5	328	Nos. 7 and 8, 1.33 feet.
8	418.0	358.0	377	No. 8 and Waco, 1.08 feet.

[1] Not printed.

Between Locks No. 1 and No. 2 is a section of river 42.3 miles long which has a fall of 36.2 feet. In this section there are numerous places where the maximum depth of water is less than 2 feet at low stages of the river. There are no rock shoals or falls in this section except Hidalgo Falls, which will be overflowed by the slack water from Lock and Dam No. 1.

Between Lock No. 2 and Lock No. 3 is a section of river 37.4 miles long which has a fall of 43.4 feet. There are some rock shoals in this section a short distance above Lock No. 2 which will be overflowed by the slack water of Lock and Dam No. 2. There are many shallow places having a depth of less than 2 feet in this section during periods of low water which back water from the dam will not drown out.

Between Lock No. 5 and Lock No. 6 is a section of river 24.5 miles long which has a fall of 35.3 feet. There are some rock shoals in this section at mile 331.4 which will not be drowned out by the slack water from Lock and Dam No. 5. They will be a serious menace to navigation in periods of low water. There are numerous sand and gravel bars in this section, over which the water is very shallow during low stages of the river.

Between Lock No. 7 and Lock No. 8 is a section of river 34.2 miles long which has a fall of 35.5 feet. There are no rock shoals in this section except the Falls of the Brazos which will be drowned out by slack water from Lock and Dam No. 7. During periods of low water there are many places in this section where the water is less than a foot deep.

GAUGE READINGS AT WACO.

The following table compiled from information found on page 246 of the publication Daily River Stages at River Gauge Stations on the Principal Rivers of the United States, Part VIII, for the years 1905 and 1906, issued by the Weather Bureau, gives the number of times and the length of period the gauge at Waco, Tex., read 5 feet or over in 1905–6:

1905		1906	
Number of times.	Number of days.	Number of times.	Number of days.
3	1	2	1
3	2	1	2
1	3	1	4
1	6	1	5
1	8	1	7
1	10	2	13
1	13	1	18
1	20	1	21
1	44	1	32
.....	113	.....	117

The following table gives the number of times and the length of period the gauge at Waco, Tex., read 5 feet or over during the cotton-moving season of the same years:

During September, October, November, December, and January.			
1905–6		1906–7	
Number of times.	Number of days.	Number of times.	Number of days.
3	1	1	2
1	2	1	4
1	3	1	5
1	6	1	12
2	10	1	13
.....	34	.....	36

Similar tables could be prepared for the years 1909–10; but these were exceptionally dry years and would not be a true indication of the conditions that exist in ordinary years.

Due to the practical exhaustion of funds allotted for this survey, no borings have been made to develop the foundation of the dams. From examination of the surface one would be led to expect that 6 of the additional 7 locks and dams could be placed on a pile foundation in a sand and gravel bed, with plenty of suitable sand and gravel in the river for construction purposes. Lock and Dam No. 5 is located on soft rock at the end of a long shoal, although borings might indicate the advisability of moving it farther downstream to obtain a pile foundation. The principal objection to a location below the shoal would be that of placing the dam in a bend of the river and the expensive foundation required on account of the depth of the river at this point.

It is estimated that about 6 acres of land on each bank of the river at each lock site in the form of a trapezoid, having the river base about 1,500 feet long and the interior base about 300 feet, with sides sloping toward the river, would be sufficient for all Government requirements. No tracts of this description have been laid out at the various sites, as it has been the custom of the people in Texas to donate to the Government free of charge the sites required at the various locations, and in obtaining the land it frequently becomes necessary to follow some prescribed boundary or lines laid off by the man owning the land. Where exact descriptions have been given in the district it has invariably been the case that the lines of the land donated would depart considerably from the descriptions given. It is assumed that the policy of requiring interested parties to donate the land will not be departed from.

On December 15, 1910, a public hearing was held at Waco, Tex., concerning the location of Lock and Dam No. 8. A report of this hearing is hereto appended.[1]

The data collected during the survey made for the purpose of determining the location of the 7 additional locks and dams are platted on 18 sheets, consisting of 17 map sheets [1] and 1 index sheet, accompanying this report.

Respectfully submitted.

A. E. WALDRON,
Captain, Corps of Engineers.

THE CHIEF OF ENGINEERS, U. S. ARMY
(Through the Division Engineer).

[1] Not printed.

[First indorsement.]

OFFICE DIVISION ENGINEER, GULF DIVISION,
New Orleans, La., January 6, 1911.

Respectfully forwarded to the Chief of Engineers, United States Army.

If the status of the improvement of the Brazos River is, as has been claimed by parties interested and as apparently conceded heretofore by the War Department, that the advisability or utility of the plan is not a subject for discussion by the engineer officer in charge of the locality, but that the requirements are mandatory and are to be submitted without discussion, the division engineer would state that the locations selected by the district engineer appear to be as advantageous as could probably be obtained and his recommendations are concurred in.

LANSING H. BEACH,
Lieut. Col., Corps of Engineers,
Division Engineer.

[Third indorsement.]

BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
Washington, May 16, 1911.

Respectfully returned to the Chief of Engineers, United States Army.

It is understood from the instructions of the Chief of Engineers to the district officer in regard to the scope of the present inquiry, directing him to limit the investigation to securing the definite information stated in the item of law, namely, the selection of sites for the additional locks and dams between Old Washington and Waco, that no further discussion of the merits of the improvement is desired. With this understanding the board reports that the sites selected by the district officer and approved by the division engineer for the seven additional locks and dams, and reported upon in detail within, appear to be as satisfactory as any that could be selected under the plan referred to in House Document No. 705, Fifty-ninth Congress, first session, and it is recommended, if the work be undertaken, that they be adopted subject to such modification as more detailed investigations at the time of construction indicate to be desirable.

For detailed information regarding this improvement, and the adverse views of the board thereon, attention is invited to report contained in House Document No. 705, Fifty-ninth Congress, first session.

For the board:

WM. T. ROSSELL,
Colonel, Corps of Engineers,
Senior Member of the Board.

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