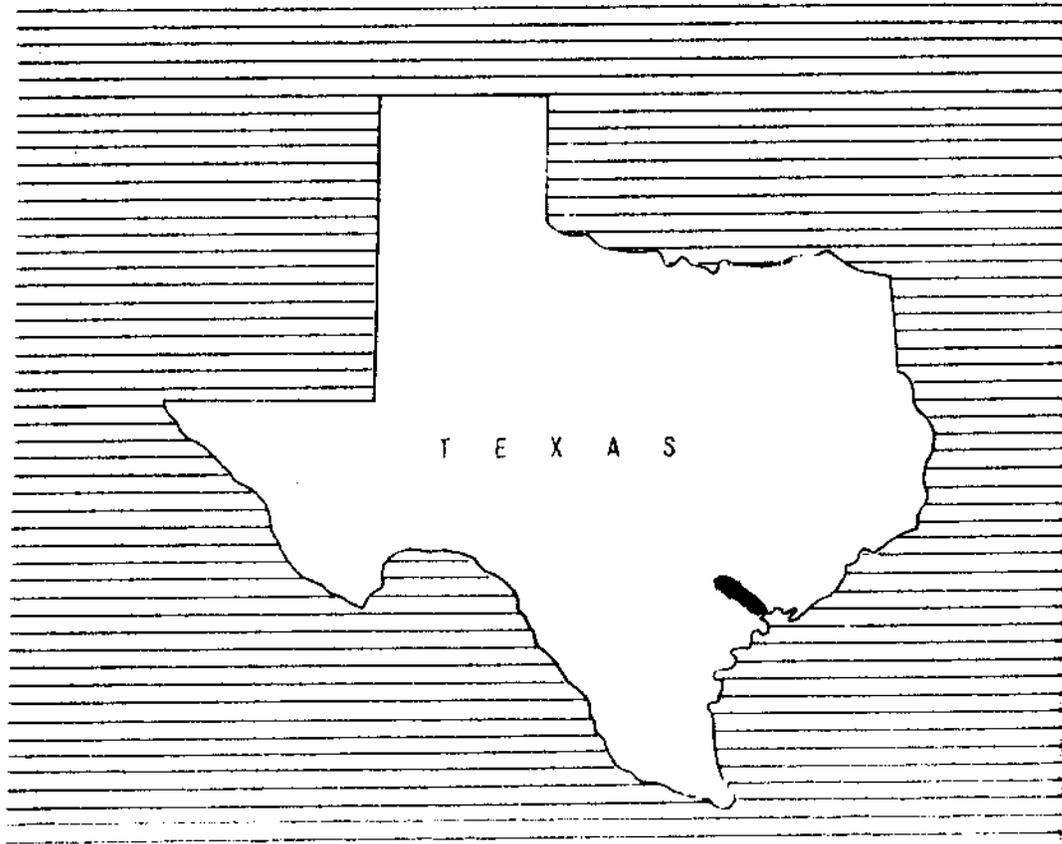


SUPPLEMENTAL WORK PLAN
FOR WATERSHED PROTECTION, FLOOD PREVENTION,
AND AGRICULTURAL WATER MANAGEMENT

CHOCOLATE,
LITTLE CHOCOLATE, AND
LYNN BAYOU WATERSHED
CALHOUN COUNTY, TEXAS



July 1967

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SUPPLEMENTAL WATERSHED WORK PLAN AGREEMENT

between the

Calhoun-Victoria Soil and Water Conservation District
(Formerly Calhoun-Victoria Soil Conservation District)
Local Organization

Calhoun County Drainage District No. 11
Local Organization

Calhoun County Commissioners Court
Local Organization

In the State of Texas
(Hereinafter referred to as the Sponsoring Local Organization)

and the
Soil Conservation Service
United States Department of Agriculture
(hereinafter referred to as the Service)

Whereas, the Watershed Work Plan Agreement for the Chocolate, Little Chocolate, and Lynn Bayou Watershed, State of Texas, executed by the Sponsoring Local Organizations named therein and the Service, became effective on the 21st day of October, 1965; and

Whereas, it has been found necessary to modify the Watershed Work Plan to delete, re-design, and extend mains and laterals; and

Whereas, a Supplemental Watershed Work Plan, which modifies the Watershed Work Plan dated November 1964 for said watershed, has been developed through the cooperating efforts of the Sponsoring Local Organization and the Service, which plan is annexed to and made a part of this agreement.

Now therefore, the Sponsoring Local Organization and the Service hereby agree upon the following modifications of the terms, conditions, and stipulations of said Watershed Work Plan Agreement:

1. Paragraph numbered 1 is modified to read as follows:

The Sponsoring Local Organization will acquire all land, easements, and rights-of-way needed for installation of structural works of improvement. (Estimated cost \$352,591).

<u>Works of Improvement</u>	<u>Sponsoring Local Organization</u> (percent)	<u>Service</u> (percent)	<u>Land, Easements, and Rights-of-Way Cost</u> (dollars)
Mains and Laterals	100	0	352,591 <u>1/</u>

1/ Includes legal fees (\$2,000).

2. Paragraph numbered 2 is modified to read as follows:

The percentage of construction cost of structural measures to be paid by the Sponsoring Local Organization and by the Service are as follows:

<u>Works of Improvement</u>	<u>Sponsoring Local Organization</u> (percent)	<u>Service</u> (percent)	<u>Estimated Construction Cost</u> (dollars)
Mains, Laterals, and Waterflow Control Structures	9.3	90.7	412,769

3. Paragraph numbered 3 is modified to read as follows:

The percentages of the cost for installation services to be borne by the Sponsoring Local Organization and the Service are as follows:

<u>Works of Improvement</u>	<u>Sponsoring Local Organization</u> (percent)	<u>Service</u> (percent)	<u>Estimated Installation Service Cost</u> (dollars)
Mains, Laterals, and Waterflow Control Structures	0	100	91,034

4. Tables A, 1, 2, 2A, 3, 3A, 4, and 6 referred to in the watershed work plan are modified to conform with tables A, 1, 2, 2A, 3, 3A, 4, and 6 (Revised) attached.

5. The program conducted will be in compliance with all requirements respecting non-discrimination as contained in the Civil Rights Act of 1964 and the regulations of the Secretary of Agriculture (7C.F.R. Sec. 15.1 - 15.13) which provide that no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any activity receiving Federal financial assistance.

- 6. The Sponsoring Local Organization and the Service further agree to all other terms, conditions, and stipulations of said Watershed Work Plan Agreement not modified herein.

Calhoun-Victoria Soil and Water Conservation District
Local Organization

By Kerry McCann
Kerry McCann

Title Chairman

Date 18 Jan 1968

The signing of this agreement was authorized by a resolution of the governing body of the Calhoun-Victoria Soil and Water Conservation District Local Organization

adopted at a meeting held on January 18, 1968

Louis E. Kolle
(Secretary, Local Organization)
Louis E. Kolle

Date 1/18/68

Calhoun County Drainage District No. 11
Local Organization

By Curtis Foester, Jr.
Curtis Foester, Jr.

Title Chairman

Date 1-5-68

The signing of this agreement was authorized by a resolution of the governing body of the Calhoun County Drainage District No. 11 Local Organization

adopted at a meeting held on JANUARY 5, 1968

R. R. Willmann
(Secretary, Local Organization)
R. R. Willmann

Date 1-5-68

Calhoun County Commissioners Court

Local Organization

By Howard G. Hartzog
Howard G. Hartzog

Title County Judge of Calhoun County

Date January 9, 1968

The signing of this agreement was authorized by a resolution of the governing
body of the Calhoun County Commissioners Court
Local Organization

adopted at a meeting held on January 8, 1968

Maurice G. Wood
County Clerk
Maurice G. Wood

Date January 9, 1968

Soil Conservation Service
United States Department of Agriculture

By _____

Date _____

**SUPPLEMENTAL
WORK PLAN
FOR
WATERSHED PROTECTION, FLOOD PREVENTION,
AND AGRICULTURAL WATER MANAGEMENT**

**CHOCOLATE, LITTLE CHOCOLATE, AND LYNN BAYOU WATERSHED
Calhoun County, Texas**

**Prepared Under the Authority of the Watershed
Protection and Flood Prevention Act, (Public Law
566, 83rd Congress; 68 Stat. 666) as amended.**

Prepared By:

**Calhoun-Victoria Soil and Water Conservation District
(Sponsor)**

**Calhoun County Drainage District No. 11
(Sponsor)**

**Calhoun County Commissioners Court
(Sponsor)**

With Assistance By:

**U. S. Department of Agriculture
Soil Conservation Service
July 1967**

SUPPLEMENTAL
WATERSHED WORK PLAN
CHOCOLATE, LITTLE CHOCOLATE, AND LYNN BAYOU WATERSHED
Calhoun County, Texas
July 1967

PURPOSE OF THE SUPPLEMENTAL WORK PLAN

Since the original Chocolate, Little Chocolate, and Lynn Bayou Watershed Work Plan was prepared, changes have occurred in land use and division of lands with new ownership. Therefore, it has become necessary to relocate, delete, and add certain main and lateral ditches and water control structures in order to have a plan that fully meets the flood prevention and agricultural water management needs of the project area and the objectives of the sponsoring local organizations.

The following are changes and modifications that are made in appropriate parts of the work plan to reflect the revision in locations and amounts of planned works of improvements.

SUMMARY OF PLAN

General Summary

The seventh paragraph is modified to read:

"The work plan proposes installing in a 5-year period, a project for the protection and development of the project area at a total estimated installation cost of \$1,291,958. The share to be borne by Public Law 566 funds is \$476,861. The share to be borne by other than Public Law 566 funds is \$815,097. In addition, the local interests will bear the entire cost of operation and maintenance."

Structural Measures

The first paragraph is modified to read:

"Structural measures to be installed in a 2-year period are 71.7 miles of main and lateral ditches and 437 structures for water control. The total cost of structural measures is \$858,394, of which the Public Law 566 share is \$465,415. The local share is \$392,979, of which 89.7 percent is for land, easements, and rights-of-way; 9.8 percent for construction; and 0.5 percent for administering contracts."

Damages and Benefits

The second paragraph is modified to read:

"The ratio of the total annual project benefits (\$240,819) to the average annual cost of structural measures (\$52,970) is 4.5:1."

Operation and Maintenance

The second paragraph is modified to read:

"The Calhoun County Drainage District No. 11 will be responsible for the operation and maintenance of the improved channels, group mains, and laterals with appurtenances. Adequate revenue for this will be provided from a special district tax which has been voted for this purpose. The estimated average annual value of operations and maintenance of the channels and structures is \$15,080."

WORKS OF IMPROVEMENT TO BE INSTALLED

Structural Measures

The first paragraph is modified to read:

"Planned structural measures to be installed are shown on the revised Project Map, figure 2, and include the following:

- "1. Chocolate Bayou (I) - Re-alignment, enlargement and clearing of 14.5 miles of Chocolate Bayou from approximately 10,000 feet below the southern boundary of the drainage district (sta. 237+00) to the northern boundary of the drainage district (Victoria-Calhoun County line - sta. 1004+50). There will be 10.7 miles of lateral construction and enlargement."
- "2. Little Chocolate Bayou (II) - Enlargement and clearing of 9.5 miles of Little Chocolate Bayou from approximately 5,100 feet below the southern boundary of the district (sta. 67+00) to approximately 0.15 miles from the Victoria-Calhoun County line (sta. 568+50). There will be 7.6 miles of lateral construction and enlargement."
- "3. Agua Dulce Creek (III), tributary of Chocolate Bayou - Enlargement and clearing of 7.2 miles of Agua Dulce Creek from its confluence with Chocolate Bayou (sta. 0+00) to the western boundary of the district, approximately 3.1 miles from the Victoria-Calhoun County line (sta. 382+00). There will be 14.3 miles of lateral construction and enlargement."

- "4. Lynn Bayou (IV) - Enlargement and clearing of 3.2 miles of Lynn Bayou from Lavaca Bay (sta. 0+00) to approximately 0.4 miles from the boundary between Calhoun County Drainage Districts Nos. 11 and 6. There will be 4.7 miles of lateral construction and enlargement."
- "6. Mains and laterals, four feet deep or greater have been planned with six pipe drop structures per mile of channel with a total of 431 structures. These structures are to be located in the field as construction progresses and therefore are not shown on the revised project map. Also included in the project are six lateral drop structures, shown on the revised project map, figure 2. This cost is included in the revised table 2."

The fourth paragraph is modified to read:

"The estimated total cost of installing these measures is \$858,394 of which \$558,042 is for the mains and their appurtenances. The remaining \$298,352 is for laterals and their appurtenances."

The fifth paragraph is modified to read:

"Details on quantities, costs, and design features of structural measures are given in revised tables 1, 2, 3, and 3A."

EXPLANATION OF INSTALLATION COST

The third, fourth, and fifth paragraphs are modified to read:

"The engineers estimate of construction cost was based on unit cost of structural measures constructed in similar areas. Ten percent was added to the engineers estimate to provide for unpredictable construction costs. The share of construction costs. The share of construction cost to be borne by Public Law 566 funds is \$374,381 and that to be borne by other funds is \$38,388."

"Installation services include engineering and administrative costs and were based on Service experience for similar works. The total cost for installation services, \$91,034 will be borne by Public Law 566 funds."

"Land, easements, and rights-of-way cost will be borne by other than Public Law 566 funds. These are estimated at \$352,591 and consist of: land easements, \$120,600; changes in improvement, \$25,000; bridge additions and changes, culverts, and low water crossings, \$96,991; pipeline modifications, \$70,200; construction of water gaps, \$37,800; and legal fees, \$2,000."

The seventh paragraph is modified to read:

"Public Law 566 funds will bear \$252,406 of the \$430,056 cost allocated to flood prevention and \$213,009 of the \$428,338 cost allocated to agricultural water management. Other than Public Law 566 funds will bear \$177,650 of the cost allocated to flood prevention and \$215,329 of the cost allocated to agricultural water management. In summary, Public Law 566 funds will bear \$465,415 of the \$858,394 total project installation cost and \$392,979 will be borne by other than Public Law 566 funds."

The table in the eighth paragraph is modified to read:

Fiscal Year :	Measures :	Public Law : :566 Funds :	Other : :Funds :	Total :
1st	Chocolate Bayou and Agua Dulce Mains; Laterals I-A, I-B, I-C, I-D, I-E, I-F, I-F1, I-Fla, I-J, I-K, I-L, III-A, III-B, III-B1, III-B2, III-H, III-H1, III-H2, III-C, III-C1, III-D, III-E, III-F, III-G Land Treatment	324,674 2,286	267,960 42,212	592,634 44,498
2nd	Little Chocolate and Lynn Bayou Mains; Laterals II-A, II-B, II-B1, II-B1a, II-C, II-D, II-E, IV-A, IV-A1, IV-A2, IV-A3, IV-A4, IV-B, IV-C, IV-D Land Treatment	140,741 2,036	125,019 84,424	265,760 86,460
3rd	Land Treatment	3,053	126,635	129,688
4th	Land Treatment	3,053	126,635	129,688
5th	Land Treatment	1,018	42,212	43,230
Total		476,861	815,097	1,291,958

COMPARISON OF BENEFITS AND COSTS

The first and second paragraphs are modified to read:

"The total average annual cost of the structural measures (amortized total installation cost, plus annual cost of operation and maintenance) is estimated to be \$52,970 (revised table 4). These measures are expected to produce average annual primary benefits of \$207,948 or \$3.93 for each dollar of cost making a benefit to cost ratio of 3.9 to 1."

"The ratio of total average annual project benefits, including secondary, (\$240,819) to the average annual cost of structural measures (\$52,970) is 4.5 to 1 (revised table 6)."

PROJECT INSTALLATION

Structural Measures

The second paragraph, first item, is modified to read:

"1. Obtain the necessary land, easements, and rights-of-way, and permits for the 71.7 miles of multiple-purpose mains and laterals and the 437 water control structures. All legal instruments will be dedicated to the drainage district."

FINANCING PROJECT INSTALLATION

The fifth paragraph is modified to read:

"It is anticipated that approximately 75 percent of the easements for the mains and laterals will be donated. The out-of-pocket costs of easements which will not be donated, local share of construction, relocation of utilities, roads and improvements, legal services, and administering of contracts is estimated by the sponsors to be \$302,000."

PROVISIONS FOR OPERATION AND MAINTENANCE

Structural Measures

The first paragraph, first sentence is modified to read:

"The estimated annual operation and maintenance cost of the improved channels, lateral ditches, and their appurtenant structures is \$15,080 based on long-term price levels."

REVISED TABLE 1 - ESTIMATED PROJECT INSTALLATION COST
Chocolate, Little Chocolate, and Lynn Bayou Watershed, Texas

Installation Cost Items	: Unit :	: Number : : to be : : Applied:	Estimated Cost (Dollars) ^{1/}		
			566 Funds	Public Law Funds	Other Funds
Land Treatment					
Soil Conservation Service					
Cropland	Acre	16,207	-	366,918	366,918
Pastureland	Acre	4,719	-	40,038	40,038
Rangeland	Acre	12,158	-	5,170	5,170
Technical Assistance			11,446	9,992	21,438
SCS Subtotal			11,446	422,118	433,564
TOTAL LAND TREATMENT			11,446	422,118	433,564
STRUCTURAL MEASURES					
Soil Conservation Service					
Mains and Laterals ^{3/}	Foot	378,576	374,381	38,388	412,769
Subtotal - Construction			374,381	38,388	412,769
Installation Services					
Soil Conservation Service					
Engineering Services			55,362	-	55,362
Other			35,672	-	35,672
Subtotal - Installation Services			91,034	-	91,034
Other Costs					
Land, Easements, and Rights-of-Way					
Administration of Contracts			-	352,591	352,591
			-	2,000	2,000
Subtotal - Other			-	354,591	354,591
TOTAL STRUCTURAL MEASURES			465,415	392,979	858,394
TOTAL PROJECT			476,861	815,097	1,291,958
SUMMARY					
Subtotal SCS			476,861	815,097	1,291,958
TOTAL PROJECT			476,861	815,097	1,291,958

^{1/} Price Base: 1964

^{2/} For Land Treatment: Acres to be treated during project installation period.

^{3/} Includes 437 appurtenant water control structures.

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REVISED TABLE 1 - ESTIMATED STRUCTURAL COST DISTRIBUTION
 Chocolate, Lleria Chocolate, and Lynn Bayou Watershed, Texas
 (Dollars) ^{1/}

Structure Number	Installation Cost - Public Law 566 Funds				Installation Cost - Other Funds				Total Installation Cost
	Construction	Engineering	Other	Public Law 566	Construction	Administration	Equipment	Other	
Chocolate Bayou Main and Laterals									
Drainage Main and Laterals 1-A, 1-B, 1-C, 1-D, 1-E, 2-F, 1-F1, 1-F1A, 1-J, 1-K, 3-L	115,266	13,981	10,151	139,998	11,844	500	128,815	141,179	281,118
Water Control Structures ^{1/}									
Number 1	158	44	34	436	38	-	-	38	474
Number 1	158	44	34	436	38	-	-	38	414
Number 7	399	48	37	484	41	-	-	41	125
Number 4	548	61	11	666	51	-	-	51	121
151 Pipe Drops	31,651	4,321	1,323	43,301	1,635	-	-	3,611	46,936
Subtotal	132,566	18,506	14,130	165,112	13,653	500	128,835	144,988	130,310
Little Chocolate Bayou Main and Laterals									
Drainage Main and Laterals 11-A, 21-B, 31-B1, 11-B1a, 11-C, 11-D, 11-E	60,988	10,088	5,894	16,970	6,183	500	81,503	94,168	111,138
Water Control Structures ^{2/} 101 Pipe Drops	24,161	3,994	2,113	30,490	1,461	-	-	2,463	12,953
Subtotal	85,151	14,081	8,127	107,460	8,128	500	87,503	96,111	104,191
Lago Dulce Creek Main and Laterals									
Drainage Main and Laterals 111-A, 111-B, 111-B1, 111-B1, 111-C1, 313-D, 111-B, 111-P, 111-G, 111-H, 111-H1, 121-B1	81,109	11,628	7,701	100,439	8,334	500	110,931	119,161	220,106
Water Control Structures ^{2/}									
Number 5	398	11	38	495	42	-	-	42	111
Number 6	169	110	11	932	78	-	-	18	1,030
129 Pipe Drops	30,262	4,315	1,811	31,468	3,081	-	-	3,081	40,153
Subtotal	111,138	16,130	10,684	139,152	11,139	500	110,911	112,912	161,324
Lynn Bayou Main and Laterals									
Drainage Main and Laterals 3V-A, 1V-A1, 1V-A2, 1V-A3, 1V-A4, 1V-B, 1V-C, 1V-D	13,080	1,606	1,114	18,060	1,344	500	23,320	21,164	45,214
Water Control Structures ^{1/} 47 Pipe Drops	11,026	3,038	1,157	13,121	1,114	-	-	1,124	18,345
Subtotal	24,106	6,644	2,111	33,181	2,468	500	25,120	18,288	61,569
GRAND TOTAL	114,381	35,361	33,612	463,415	38,388	2,000	352,591	392,979	858,994

^{1/} Price Base: 1964

^{2/} Appurtenant structures to Mains and Laterals.

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REVISED TABLE 2A - COST ALLOCATION AND COST SHARING SUMMARY

Chocolate, Little Chocolate, and Lynn Bayou Watershed, Texas

(Dollars) 1/

Item	Purpose			Total
	Flood Prevention	Agricultural Water Management		
<u>COST ALLOCATION</u>				
Multiple-Purpose				
Mains, Laterals, and Appurtenances	430,056	428,338		858,394
TOTAL	430,056	428,338		858,394
<u>COST SHARING</u>				
Public Law 566	252,406 ⁵⁹	213,009 ^{49.7}		465,415 ⁵⁴
Other	177,650	215,329		392,979
TOTAL	430,056	428,338		858,394

1/ Price Base: 1964

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REVISION TABLE 3 - STRUCTURE DATA

CHANNELS (Main and Lateral)

Chocolate, Little Chocolate, and Lynn Bayou Watershed, Texas

Channel Designation	Station Numbering for Reach	Watershed Area	Required Drainage Curve	Required Drainage Capacity	Planned Channel Capacity	Average Channel Width	Average Side Slope	Average Depth	Average Grade	Average Velocity	Volume of Excavation	
	(100 Ft.) (100 ft.)	(acres)		(c.f.a.)	(c.f.a.)	(ft.)		(ft.)	(ft./ft.)	(ft./sec.)	(100 cu.yds.)	
Chocolate Bayou												
Main 2	1,005	818	20,493	50M 5/6	900	900	15	2:1	4.4	0.00060	1.0	1,381.3
	878	119	24,501	50M 5/6	1,060	1,068	35	2:1	7.0	0.00060	1.1	1,446.2
	719	390	28,685	50M 5/6	1,200	1,211	14	2:1	8.3	0.00043	1.4	832.0
	590	485	30,968	50M 5/6	1,280	2,300	22	2:1	9.1	0.00045	1.5	215.9
	485	360	11,170	50M 5/6	1,300	1,311	16	2:1	10.6	0.00040	3.1	202.2
	360	237	Removal of undesirable woody vegetation from channel by clearing or by controlled use of herbicides.									
Laterals												
1-L	18	0	2,281	30M 5/6	87	89	4	2:1	4.1	0.00100	1.8	6.5
1-E	35	0	171	30M 5/6	20	21	4	2:1	2.1	0.00100	1.2	12.7
2-J	37	0	2,214	45M 5/6	127	130	4	2:1	5.6	0.00040	1.3	88.2
3-Y	184	91	1,140	45M 5/6	101	111	6	2:1	4.6	0.00070	1.9	306.8
	93	0	1,107	45M 5/6	130	171	6	2:1	5.2	0.00070	2.0	246.6
1-Y1	66	0	900	30M 5/6	41	42	4	2:1	3.4	0.00050	1.1	173.0
1-Y1A	44	0	517	30M 5/6	28	30	4	2:1	2.9	0.00050	1.0	80.6
1-Z	11	0	728	30M 5/6	38							
1-D	21	0	184	45M 5/6	16							
1-C	44	0	221	45M 5/6	18	19	4	2:1	2.0	0.00043	0.8	4.3
1-B	1	0	113	45M 5/6	12	14	4	2:1	1.4	0.00250	1.3	1.1
1-A	104	43	432	45M 5/6	16	36	5	2:1	1.4	0.00030	0.9	71.6
	43	0	042	45M 5/6	51	52	4	2:1	1.4	0.00080	1.5	49.8
Little Chocolate Bayou												
Main 11	569	754	2,812	50M 1/6	172	111	12	2:1	5.0	0.00040	1.6	1,066.6
	154	217	4,941	50M 5/0	235	280	18	2:1	5.0	0.00055	2.0	929.0
	111	118	8,203	50M 3/6	420	410	9	2:1	5.6	0.00200	3.1	393.8
	118	67	Removal of undesirable woody vegetation from channel by clearing or by controlled use of herbicides.									
Little Chocolate Bayou Lateral												
11-E	21	0	498	45M 5/6	34	15	4	2:1	1.0	0.00060	1.2	12.0
11-D	17	0	531	45M 5/6	41	45	4	2:1	3.0	0.00100	1.3	20.0
12-C	218	76	364	45M 5/6	46	41	12	1:1	2.5	0.00030	1.1	31.7
11-B	143	59	1,151	45M 5/6	74	26	8	2:1	3.4	0.00073	1.3	94.1
	59	0	1,967	45M 5/6	121	125	8	2:1	4.0	0.00100	1.9	12.6
13-B1	104	71	393	45M 5/6	32	12	4	2:1	2.7	0.00080	1.1	41.0
	13	0	706	45M 5/6	58	59	1	2:1	1.4	0.00080	1.5	108.0
11-B1A	15	0	118	45M 5/6	11	18	4	2:1	2.0	0.00090	1.1	17.8
11-A	60	3	517	45M 3/6	38	43	4	2:1	1.0	0.00090	1.4	50.4
	3	0	317	45M 5/6	38	90	4	2:1	1.0	0.00400	1.0	1.8
Agua Dulce												
Main 111	382	218	6,494	50M 3/6	348	168	11	2:1	5.8	0.00085	2.0	1,063.7
	218	100	10,150	50M 5/0	528	536	14	2:1	6.4	0.00085	3.1	412.4
	100	0	12,901	50M 5/6	620	620	16	2:1	7.5	0.00050	2.2	161.2
Leisalle												
111-G	50	0	2,210	30M 1/6	97	97	8	1:1	4.2	0.00010	1.4	161.6
111-F	16	0	582	30M 5/6	16	40	4	2:1	3.2	0.00060	1.7	58.8
111-E	5	0	452	30M 3/6	26	28	4	2:1	2.4	0.00100	1.2	4.6
121-D	90	0	692	30M 5/6	17	39	4	2:1	1.8	0.00100	1.3	241.1
111-C	205	0	1,891	45M 5/6	100	101	4	2:1	4.3	0.00100	1.9	353.8
121-C1	24	0	230	45M 3/6	18	22	4	2:1	1.8	0.00200	1.6	12.4
132-H	91	34	472	45M 5/6	37	39	6	2:1	2.8	0.00064	1.1	117.0
	34	0	624	45M 5/6	44	51	4	2:1	1.0	0.00140	1.8	64.1
111-H1	22	0	119	45M 5/6	11							
112-H2	4	0	52	45M 5/6	6	15	4	2:1	2.0	0.00050	0.9	2.1
112-B	113	69	324	45M 5/6	54	58	4	2:1	1.8	0.00060	1.1	121.0
	69	0	1,048	43M 5/6	74	35	4	2:1	1.8	0.00100	1.7	167.8
112-B1	9	0	61	45M 5/6	1	19	4	2:1	2.0	0.00100	1.2	15.1
111-B2	4	0	81	45M 3/6	1	19	4	2:1	2.0	0.00100	1.2	11.4
113-A	90	0	358	45M 1/6	41	41	4	2:1	2.6	0.00150	1.7	133.4
Lynn Bayou												
Main 114	169	56	1,519	50M 5/6	249	149	F	2:1	5.0	0.00150	1.9	115.1
	16	0	Removal of undesirable woody vegetation from channel by clearing or by controlled use of herbicides.									
Lateral												
114-C	47	0	411	45M 5/6	12	33	4	2:1	1.2	0.00040	1.0	41.1
114-B	15	0	284	45M 5/6	25	26	4	2:1	2.1	0.00150	1.3	12.9
114-A	111	81	536	45M 1/6	74	37	4	1:1	1.2	0.00031	1.4	111.7
	81	0	1,298	45M 5/6	90	90	4	1:1	1.2	0.00030	2.7	69.8
114-A1	18	0	130	45M 1/6	11	24	4	1:1	2.0	0.00110	1.1	19.4
114-A2	14	0	161	45M 5/6	15	18	4	2:1	2.0	0.00081	1.1	21.8
114-A3	19	0	85	45M 1/6	8	9	4	1:1	2.0	0.00083	1.1	16.6
114-A4	5	0	130	45M 1/6	11	11	4	1:1	1.4	0.00200	1.4	4.7
114-D	3	0	181	45M 1/6	16	16	4	2:1	1.2	0.00500	2.0	2.4

1/ The planned channel capacity and average depth are for water surfaces at approximately one foot below natural ground.
 1/ The values given in these columns are at the lower end of each reach.

REVISED TABLE 3A - STRUCTURE DATAWATER CONTROL STRUCTURES

Chocolate, Little Chocolate, and Lynn Bayou Watershed, Texas

<u>Structure</u> <u>Number</u>	<u>: Required</u> <u>: Capacity</u> <u>(cfs)</u>	<u>: Designed</u> <u>: Capacity</u> <u>(cfs)</u>	<u>: Size of</u> <u>: Opening</u> <u>(inch)</u>	<u>Material</u>	<u>: Type of</u> <u>: Structure</u>
Chocolate Bayou					
1	23	25	24	C.M.P. Asphalt Coated	Lateral Drop
2	20	25	24	C.M.P. Asphalt Coated	Lateral Drop
3	48	67	30	C.M.P. Asphalt Coated	Lateral Drop
4	51	53	36	C.M.P. Asphalt Coated	Lateral Drop
Pipe Drops (152 Structures) <u>1/</u>					
Little Chocolate Bayou					
Pipe Drops (103 Structures) <u>1/</u>					
Agua Dulce Crank					
5	51	86	30	C.M.P. Asphalt Coated	Lateral Drop
6	92	108	42	C.M.P. Asphalt Coated	Lateral Drop
Pipe Drops (129 Structures) <u>1/</u>					
Lynn Bayou					
Pipe Drops (47 Structures) <u>1/</u>					

1/ To be designed at time of detail for construction and will be 18 to 24 inch diameter c.m.p. asphalt coated with an operating head of 0.5 to 15.0 foot.

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REVISED TABLE 4 - ANNUAL COSTS

Chocolate, Little Chocolate, and Lynn Bayou Watershed, Texas

(Dollars)

Evaluation Unit	: Amortization : of : Installation : Cost <u>1/</u>	: Operation : and : Maintenance : Cost <u>2/</u>	: Total
71.7 miles of Main and Lateral Drainage Ditches, including Appurtenances	37,890	15,080	52,970
TOTAL	37,890	15,080	52,970

1/ Amortization period, 40 years; interest rate, 3-1/8 percent

2/ Long-term prices as projected by ARS, September 1957.

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REVISED TABLE 6 - COMPARISON OF BENEFITS AND COSTS FOR STRUCTURAL MEASURES

Chocolate, Little Chocolate, and Lynn Bayou Watershed, Texas

(Dollars)

Evaluation Unit	AVERAGE ANNUAL BENEFITS ^{1/}			Annual Cost	Benefit-Cost Ratio
	Flood Prevention: Damage Reduction	Agricultural Water Management	Improved Efficiency ^{2/} :Secondary		
71.7 miles of Main and Lateral Drainage Ditches, including Appurtenances	104,124	103,824	32,871	240,819	52,970 4.5:1
GRAND TOTAL	104,124	103,824	32,871	240,819	52,970 4.5:1

^{1/} Price Base: Long-term prices as projected by ARS, September 1957.

^{2/} Reduced cost per unit of production, increased units of production, and increased price per unit resulting from improved quality.

^{3/} From Table 4.

INVESTIGATIONS AND ANALYSESEconomic InvestigationsEvaluation of Benefits

The ninth paragraph, last sentence is modified to read:

"The total installation cost of structural measures for this purpose is \$428,338, of which \$213,009 will be paid by P. L. 566 funds and \$215,329 by other than P. L. 566 funds."

Revised Table A - Cost Allocation and Cost Sharing

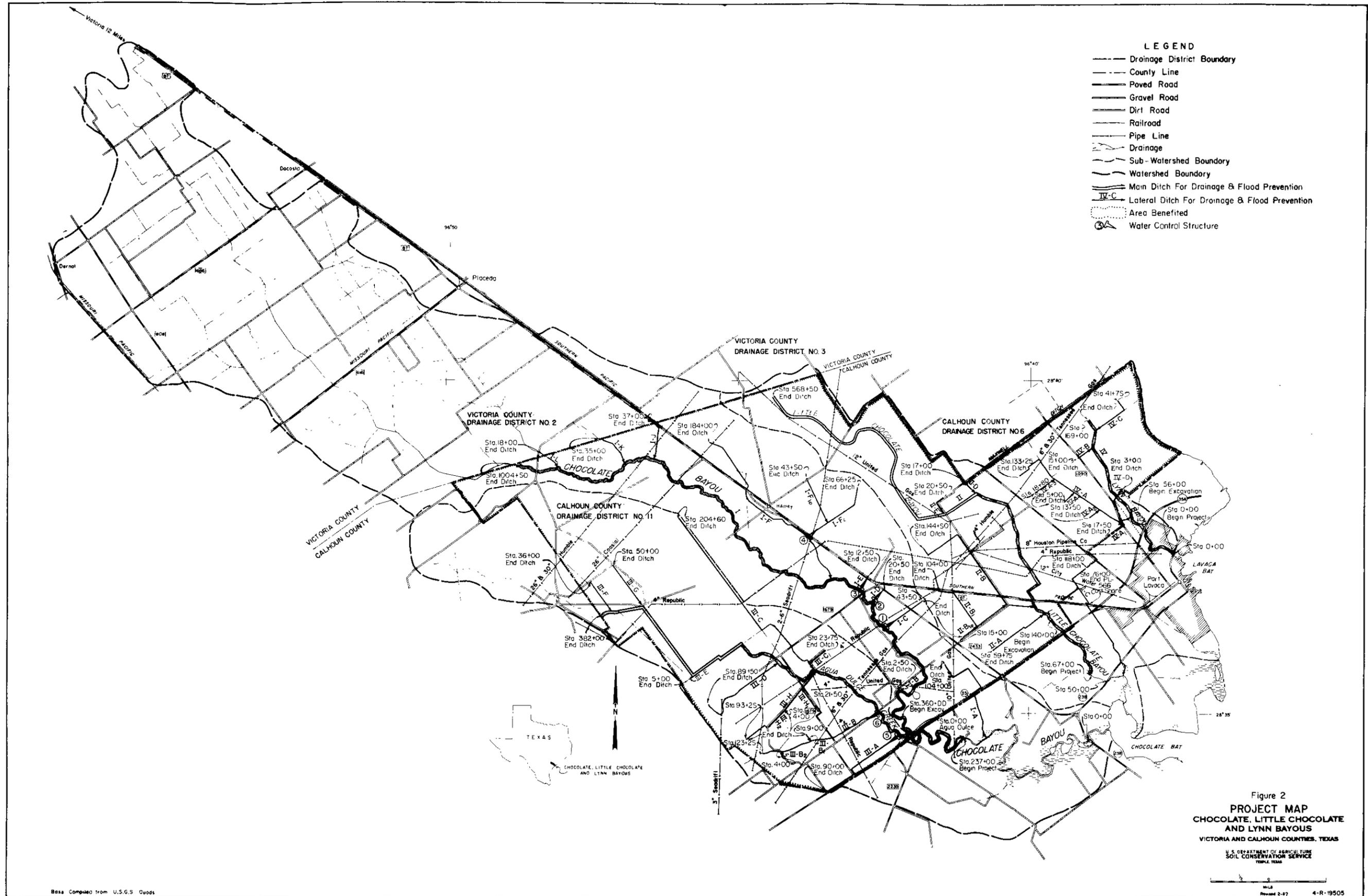
Chocolate, Little Chocolate, and Lynn Bayou Watershed, Texas

(Dollars)

Multiple-Purpose Mains, Laterals, and Appurtenances

Item	Flood Prevention			Agricultural Water Management			Recapitulation		
	P. L.	566	Funds	P. L.	566	Funds	P. L.	566	Funds
Construction	206,798	-	206,798	167,583	38,388	205,971	412,769	374,381	38,388
Installation Servicea	45,608	-	45,608	45,426	-	45,426	91,034	91,034	-
Administration of Contracts	-	1,002	1,002	-	998	998	2,000	-	2,000
Land, Easements, and Rights-of-Way	-	176,648	176,648	-	175,943	175,943	352,591	-	352,591
Total Installation Cost	252,406	177,650	430,056	213,009	215,329	428,338	858,394	465,415	392,979
Allocation to Purpose (Percent)	50.1	41.3	100.0	49.7	50.3	100.0	100.0	54.2	45.8
Cost-Sharing (Percent)	58.7	41.3	100.0	49.7	50.3	100.0	100.0	54.2	45.8

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- LEGEND**
- Drainage District Boundary
 - County Line
 - Paved Road
 - Gravel Road
 - Dirt Road
 - Railroad
 - Pipe Line
 - Drainage
 - Sub-Watershed Boundary
 - Watershed Boundary
 - Main Ditch For Drainage & Flood Prevention
 - Lateral Ditch For Drainage & Flood Prevention
 - ⊞ Area Benefited
 - ⊞ Water Control Structure

Figure 2
PROJECT MAP
 CHOCOLATE, LITTLE CHOCOLATE
 AND LYNN BAYOUS
 VICTORIA AND CALHOUN COUNTIES, TEXAS

U.S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE
 TEMPLE, TEXAS

1:25,000
 1" = 1 MILE
 Revised 2-57 4-R-19505

Base Compiled from U.S.G.S Quads