

COPY

SPECIFICATIONS

for the
PLAN OF RECLAMATION

of the

SOUTHERN DRAINAGE DISTRICT OF FLORIDA
SOUTHERN ENGINEERING & CONSTRUCTION COMPANY
CHIEF ENGINEER.

PURE FLAX BOND

OFFICE OF
SOUTHERN ENGINEERING AND CONSTRUCTION COMPANY

O.A. Hardin, President.
G.T. Hardin, Secretary.

Miami, Fla. Dec. 28, 1918.

J.F. Jaudon, President.
J.P. Conrad,
L.T. Highleyman,
Supervisors Southern Drainage District,
Miami, Florida.

Gentlemen:

A change of location of a canal to be constructed within the drainage area of the Southern Drainage District by the State of Florida, is contemplated; said canal to begin at or near the North-east corner of the District, where the North boundary of section 33, Township 53 South, Range 41 East, crosses the Miami canal, and be excavated in a westerly and southwesterly direction to an intersection with the present Tamiami Trail canal. This canal will be the discharging end of canal "B", of an amended "Plan of Reclamation", and should have a bottom width of 60 feet from Miami canal to intersection of canal "A", then 50 feet to the Tamiami Trail canal.

TO conform with this contemplated change of State work, an amended "Plan of Reclamation" is herewith submitted, together with the following specifications:

PROTECTION OF DISTRICT BY MEANS OF LEVEE OR DYKE.

The District is to be dyked on all sides necessary to form a basin separated from adjacent lands, and protected from overflow waters of adjoining territory to which it has heretofore been subjected. The dykes will be constructed from the material excavated from the ditches along the boundaries of the District, as shown on "Plan of Reclamation". Said material is to be deposited on the side away from the enclosed area, so that the ditch will be on the inside and the levee outside. The boundary ditches on the west and south may be increased in size at such points as necessary to excavate material enough to form a continuous and unbroken bank, which shall be at all points, not less than 8 feet above mean low tide. The right of way upon which the levees are to be constructed shall be cleared of all timber and brush, standing or fallen so that bare earth will be exposed, and thereby a close contact made between the original surface and the material of the levee.

DRAINAGE OF DISTRICT.

Nearly all water is to be carried off by means of main canals, as shown on plan marked "A", "B", "C", "D", "E" and "F". The canals and ditches are designed to take care of and carry off only the water precipitated directly upon the surface of the District, plus an undetermined amount that will naturally seep through and under the protecting dykes, on account porosity of soil and underlying rocks. Of the amount of water thus put upon the Districts, a small allowance has been made for evaporation, and quite a large allowance for absorption--a total for the two of 30% of a normal rainfall. These allowances are based on data obtained from test tanks which show the total annual evaporation from the Glades is quite large; but during and immediately following storm periods, the atmosphere is subcharged with an excess of moisture, and practically no evaporation takes place at such time; also, the records of the United States weather Bureau show that fully 80% of the storm periods are preceded by droughts of more or less duration, hence, the soil is in a receptive condition to absorb large quantities of water.

DESCRIPTION OF CANALS.

CANAL "A", formally designated North Boundary Canal, beginning at the northwest corner of the District and running thence east along the north boundary line of same, shall have, at its initial elevation of one foot above mean low tide in Biscayne Bay; and be enlarged in successive stages one foot additional width for each three miles of length, to its point of discharge into canal "B". The divide between canal "A" and canal "B" shall be along south line of Township 52 South.

CANAL "B", shall be, for the most part, the present excavation made and being made by the building of the Tamiami Trail. Beginning at the west line of the Drainage District, it is estimated that the first 12 miles, as being excavated by Morgan & Co., in contract with the County Commissioners of Dade County, Fla., for the purpose of constructing the Tamiami Trail, will when completed, be sufficient for drainage purposes. At the end of this 12 miles, (or at the range line between Ranges 38 and 39 East), the canal will have a bottom width of at least 25 feet, and a depth of zero, mean low tide. From this point eastward the present excavation shall be widened and deepened in successive stages to its junction with the canal to be constructed by the State of Florida, where it will have a minimum bottom width of 50 feet, and a depth of minus 2 feet, mean low tide. The estimate of cost for canal "B" is for its entire length to its discharge by the State of Florida.

The divide between canals "B" and "C" shall be along an east and west line one mile north of canal "C".

Canal "C" shall begin at the west side of the District and run east on a line one and one-half miles north of the South boundary of Township 54 South, through Ranges 37 and 38 East, a distance of 12 miles; thence east and southeast to the west end of the Snapper Creek Canal, thus discharging into said Snapper Creek Canal. At its beginning at the west boundary of the District, it shall have a bottom width of 10 feet and an elevation of one foot above mean low tide; thence enlarged and deepened in successive stages to a bottom width of 24 feet, and a depth of minus 2 feet, at point of discharge.

Canal "D" is the present Snapper Creek Canal, and it may be necessary to clean and possibly to deepen the present excavation of this canal from its western end to its discharge into Biscayne Bay.

Canal "E" shall begin at a point in section 2, Township 55 South, Range 40 East, and follow in or near the middle of the natural drainage of the land, in a south and southwesterly direction, to a conjunction with Canal "F". It will have an initial bottom width of 10 feet and a depth of at least 5 feet below top of soil; and enlarged and deepened in successive stages to a bottom width of 14 feet at point of discharge.

Canal "F" shall begin at or near the North line of section 21, Township 55 South, Range 39 East, and follow in or near the middle of the natural drainage of the land, in a southeasterly direction, to a discharge into the Black Creek Canal. It will have an initial bottom width of at least 10 feet and a depth of 5 feet below top of soil; thence widened and deepened in successive stages to a bottom width of at least 20 feet at point of discharge.

In estimate of cost no provision has been made for possible necessary work in cleaning out and enlarging the Black Creek Canal; such work may be necessary but no data is at hand regarding the present condition of this canal, upon which to base an estimate.

Surveys of Townships 55 South, Ranges 39 and 40, were made along section lines, according to contract between the Southern Engineering and Construction Company and the Board of Supervisors of the Southern Drainage District of Florida, and the natural drains were located by these surveys. Beyond this, no useful data is at

hand; and no additional surveys have been made for the canals and ditches to be excavated South and Southeast through these Townships.

LATERAL DITCHES.

All lateral ditches debouching into the main canals, shall have a bottom width of 3 feet and a depth of from 3 to 5 feet, depending upon the location and length of the ditch.

On the "Plan of Reclamation", the lines running north and south through land sections and along boundaries of sections, together with other lines so marked, indicate lines along which lateral ditches are to be constructed to the above mentioned dimensions; except that where an excess of rock is encountered, the ditches may be widened and shallowed, maintaining practically the same amount of cross section; but in no instance be less than 2½ feet below surface of soil.

SLOPES.

Estimates of yardage are based upon aforementioned dimensions, with bank slopes of ½ foot horizontal to one foot vertical, for rock; and one foot horizontal to one foot vertical, for earth.

WATER CONTROL GATES.

There shall be approximately 14 control gates in the main canals, disposed about every 6 miles of length of canal, to control and retain the water supply during the dry seasons.

PROFILES.

The accompanying profiles are made up from data obtained in field work while engaged in surveying the land of the Southern Drainage District, by the Southern Engineering & Construction Company, in contract with the Board of Supervisors of the District, under date of the month of February, 1918.

OVERDEPTH.

An allowance of one foot is made for overdepth; and 50% of same is included in all quantities to be excavated.

ESTIMATE OF COST.

Canal "A"--	Rock	330,000 cu.yds @	40¢	
	earth	450,000 " "	12¢	183,000.00
Canal "B"--	rock	610,000 " "	40¢	
	earth	700,000 " "	12	228,000.00
	Less \$100,000.00 for State work			
Canal "C"--	rock	380,000 " "	@ 40¢	
	earth	350,000 " "	12¢	214,000.00
West side Dyke	rock	12,400 " "	40¢	
	earth	30,750 " "	12¢	8,650.00
South side Dyke	rock	18,300 " "	40¢	
	earth	45,000 " "	12¢	12,720.00
Lateral Ditches	rock	150,000 " "	40¢	
	320 miles earth	1,370,000 " "	12¢	224,400.00
Canals and ditches South of Township 54 South				
	50 miles rock	140,000 cu yds @	40	
	earth	428,000 " "	12	107,360.00
14 Water Control Gates @	\$1500.00			21,000.00
Right-of-way 2000acres @	\$12.00			24,000.00
Clearing of Right of way				<u>6,000.00</u>
				1,029,130.00
10% for Incidentals and Extras				<u>102,913.00</u>
				1,132,043.00
Engineering and Office Expenses-10% for 3 years				<u>113,204.30</u>
				\$1,245,247.30
				Total

Respectfully Submitted

SOUTHERN ENGINEERING & CONSTRUCTION
COMPANY
CHIEF ENGINEER.

By _____
President.