

Naples, Florida, October 20, 1977

LET IT BE KNOWN, that the Pelican Bay Improvement District Board, met in regular session at 4:30 P.M. in Building "C" of the Collier County Courthouse Complex with all members present:

PRESIDENT: Salvatore Scuderi
TREASURER: Viola Barclay
SECRETARY: Douglas Brown

Harmon Turner
Robert Diefenthaler

ALSO PRESENT: Carol Russell, Recording Secretary; Mr. Tracy Bolesky, Attorney for the Board; Messrs. Werner Buntmeyer, Byron Koste, Charles Penn, Grover Ericksen, General Manager, of Coral Ridge-Collier Properties; George Varnadoe, Attorney for Smith, Young & Blue; Fred Biery, Project Manager, and Bob Wright of Post, Buckley, Schuh & Jernigan.

AGENDA

1. Call to order
2. Roll Call
3. Minutes of Prior Meetings
4. Engineer's report
5. Old Business
6. New Business

The meeting was called to order. President Scuderi noted that all members of the Board were present.

Pelican Bay Improvement District Board
October 20, 1977

ENGINEER'S REPORT

Addendum No. 1 to the Critique of the Water and Sewer Master Plan of September 14, 1977, copies of which had been distributed before this meeting, was reviewed by Mr. Fred Biery of Post, Buckley, Schuh & Jernigan. (Copy appended)

Both on-site water facilities and off-site water facilities were explained by Mr. Biery and it was stated that the recommendation of the engineers was to utilize the off-site well field. This is the Immokalee Road Watertable Wells located approximately four miles east of the junction of Highway 41 and the Immokalee Road, he said. The quality of water from the off-site wells would be significantly better and it would make possible the installation of a District owned dual water system, one for potable use and one for irrigation use throughout the development, stated Mr. Biery.

The developer's golf course was then discussed. Mr. Biery explained that the irrigation water for this golf course would have to be obtained from the Pelican Bay Improvement District. Therefore, Mr. Biery said, that it was the recommendation of the engineers that Coral Ridge Properties pay the Pelican Bay Improvement District an initial tap-in fee of approximately \$300,000. which would be their share of the capital cost of the pipeline for this off-site system. There would have to be some kind of stipulation, he stated, that there would be restrictions to the residents of the area prohibiting on-site irrigation wells. If this initial tap-in fee is paid by the developer to the Pelican Bay Improvement District, the net cost of

Pelican Bay Improvement District Board
October 20, 1977

Mr. Buntmeyer of Coral Ridge-Collier Properties concurred and indicated that the developers would be willing to pay this initial tap-in fee of \$300,000.

At Mr. Buntmeyer's request, Mr. Biery affirmed that there was no other fresh water supply reasonably available that would not require a reverse osmosis plant.

Mrs. Barclay raised the question as to whether this off-site untreated water would be too salty to irrigate the private lawns. Mr. Biery pointed out that the golf course was contemplating using grasses that would tolerate a chloride content of 1,000. Mr. Biery stated that the chloride content of this untreated water would be 300 to 350 chloride content, whereas the normal grasses grown in this area can tolerate chlorides in the range of 350 to 500.

Mr. Bob Wright of Post, Buckley, Schuh & Jernigan noted that there was an error in the Addendum on Page 1 of Exhibit D-4. The heading at the top of the page should read: PLAN B OFF-SITE WATER instead of PLAN B ON-SITE WATER.

The legal aspects of the plan were questioned by President Scuderi. It was determined that more information was needed from the engineers before this concept could be approved by the Board. President Scuderi emphatically stated that all reports to be presented to this Board must first have copies of same distributed to the Board members in order to be reviewed prior to the meeting.

After a lengthy discussion, Mr. Harmon Turner suggested that the engineers find out if it is definite that water can be obtained from said well site, can the wells definitely be located on the state right-of-way when it is determined where the wells will be located, and will the wells produce enough water to answer requirements at

the present time? Mr. Turner suggested moving up the time of the next regular meeting to the first Wednesday of the month (November 2nd), instead of the second Wednesday and made a motion to this effect. However, President Scuderi declared that a motion was not needed. The meeting time was agreeable to all.

Mr. Buntmeyer recommended that the engineers distribute a total outline of the time frame and the necessary steps that will have to be taken regarding this concept, to the Board members, a few days before the meeting.

OLD BUSINESS

BILLS AUTHORIZED TO BE PAID

No Treasurer's Report was submitted. Mrs. Barclay reported the following bills to be paid:

Naples Daily News	\$ 6.20
Rogers, Moon, Wood & Hill	75.00
Board of County Commissioners	<u>57.72</u>
	\$138.92

Mrs. Barclay stated that there is presently \$2,488.17 in the bank and these bills can be paid. Mr. Turner moved, seconded by Mr. Brown and carried unanimously that the bills be paid.

Mr. Turner then requested approval for the developer to pay two invoices which had been received from the engineers:

Invoice #3	for \$15,446.96
Invoice #4	for \$32,485.39

Mr. Turner moved, seconded by Mr. Brown and carried unanimously that these invoices be approved for the developers to pay.

QUESTIONS REGARDING COST OF ACCESS ROADS

Regarding the limits of compensation for the access roads, President Scuderi asked Mr. Biery to explain why the access roads were listed as costing \$100,000; notwithstanding, more than half of them had been deleted and the original cost had been \$112,000. Mr. Biery replied that the road work was not the complex portion of the work, and was scheduled at \$20, to \$22,000. The value of the water management work was approximately \$90, to \$92,000. After reviewing the budget, Mr. Biery stated, he had requested a cap of \$100,000, realizing that adjustments will be made in the future. Mr. Turner related that this had been discussed and it was a reasonable figure, however, realizing that it is a cap and an effort should be made to lower the cost.

OLD BUSINESS, Continued

President Scuderi moved that the Statement of Cash Receipts and Expenditures submitted to the Board by Rogers, Moon, Wood & Hill be accepted, seconded by Mr. Brown and carried unanimously.

Mr. Turner reported to the Board that he has submitted a bill for \$300 to Coral Ridge-Collier Properties for September.

Mr. Turner moved, seconded by Mr. Brown that the travel vouchers be approved. Motion carried unanimously.


NEW BUSINESS

Secretary Doug Brown requested that a minimum order of the travel expense vouchers be printed. Mr. Turner made a motion that these forms be printed, seconded by Mrs. Barclay and carried unanimously.

Pelican Bay Improvement District Board
October 20, 1977

As there was no further business to be brought before the Board, Mr. Turner moved, seconded by Mr. Brown that the meeting be adjourned. Motion carried unanimously. Time 5:52 P.M.

PELICAN BAY IMPROVEMENT DISTRICT BOARD



Salvatore Scuderi, President

P | B POST, BUCKLEY, SCHUH & JERNIGAN, INC.

S | J

FORTINER BUILDING
2180 W. FIRST STREET, SUITE 303
FORT MYERS, FLORIDA 33901
TELEPHONE (813) 332-0034

CONSULTING ENGINEERS AND PLANNERS

October 18, 1977

Mr. Salvatore C. Scuderi, President
and Board of Supervisors
Pelican Bay Improvement District
Collier County Courthouse
Naples, Florida 33940

Dear Mr. Scuderi and Board:

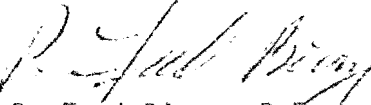
On September 14, 1977 when our written critique of the Pelican Bay Master Water and Sewer Plan was presented to the Board, we were unable to include an evaluation of the alternative of the District receiving water and sewer services from the City of Naples since the City's response had only been received two days prior to the meeting. We informed you at the time that an addendum to our critique would be prepared after contacting the City and completing an analysis of their proposal.

Since September 14, 1977, we have also had several indepth discussions with the Developer and with Mr. Harmon Turner representing the Board of Supervisors regarding both initial phase and long range water and sewer plans for the District. These meetings have been quite fruitful and have resulted in a better understanding, by all parties.

We are pleased to present to you, as an addendum to the "Critique of Master Water and Sewer Plan for Pelican Bay Improvement District", our evaluation of the offer from the City of Naples and of the modifications and explanations of the water and sewer master plan which will result in the most economical and beneficial systems for the District, the Developer and the ultimate citizens of Pelican Bay.

Very truly yours,

POST, BUCKLEY, SCHUH & JERNIGAN, INC.



P. Fred Biery, P.E.
Project Manager

PFB/RRW/mfm

Enclosures

cc: Coral Ridge-Collier Properties, Inc.
Mr. Grover Ericksen, Vice President, et al

304-003.10

-351-

CRITIQUE OF MASTER WATER AND SEWER PLAN
FOR
PELICAN BAY IMPROVEMENT DISTRICT
ADDENDUM NO. 1
(OCTOBER 20, 1977)

I. PROPOSAL FOR WATER AND SEWER SERVICE BY THE CITY OF NAPLES

A tentative proposal for the City of Naples to provide water and sewer services to the Pelican Bay Improvement District was outlined in a letter prepared by their City Manager, Mr. George Patterson, on September 12, 1977, a copy of which is attached as Exhibit A.

Basically, the proposal states that the City will provide full water and sewer service to Pelican Bay under one of the following conditions:

- 1.) Immediate annexation.
- 2.) In lieu of the above condition, payment of \$3,000,000 to the City which would be refunded to the District from "System Development Charges" collected by the City from meter requests within the District.

If Pelican Bay agreed to annexation, there would be no justification for the continued existence of the Improvement District. Also, the developer would be faced with financing all of the expenses associated with providing a water distribution and sewer collection system within the Pelican Bay property. Meter connections would be controlled by the City.

A financial evaluation of the City's second alternative led to the conclusion that the recommended water and sewer plan identified in the critique report is more economical than the plan proposed by the City of Naples. A financial comparison of the City Plan and the Recommended Plan is presented in Table A-1. The average cost per month per unit for combined water and sewer service is much less under the Recommended Plan than it is for the City Plan. The City Plan can be further weakened by voiding the assumption made that the City would return to the District 100 percent of the system development or tapping fees they would collect. It is also interesting to note that, even with a 100 percent payback, the City's existing water and sewer system development fee of \$490 would not meet the financing requirements of a \$3,000,000 bond issue over 25 years @ 7½% interest rate. Under the City Plan, Pelican Bay customers would be subject to the City's existing water and sewer rate schedule. Their rate ordinances have no provisions for bulk rates. Even under the annexation condition, the average water and sewer monthly charge per unit (\$36/month/unit) is slightly higher than the charge based on the Recommended Plan.

The estimated monthly charges contained in Table A-1 were derived on the basis of using the designed per capita flows presented in the Critique Report, 2.3 population equivalents per unit, and an average of 4800 units over a 25-year time span. The capital financing charges are based on a 25 year bond period @ 7½% interest rate. The water and sewer charges listed under the City Plan are based on the City's existing rate schedule and estimated per capita flows while the Recommended Plan charges are based on the estimated average system rates presented in the Critique Report.

TABLE A-1

COST COMPARISON OF CITY PLAN AND RECOMMENDED PLAN
FOR WATER AND SEWER SERVICE

Item	City Plan		Recommended Plan
	Not Annex	Annex	
Combined Water and Sewer Tap Fee	\$ 490.00	\$ 490.00	\$ 490.00 ⁽¹⁾
Capital Financing Required by PBID	\$14,600,000.00 ⁽²⁾	\$11,600,000.00	\$15,000,000.00
Monthly Charges per Unit:			
a. Capital Financing	\$ 19.50	\$ 18.08	\$ 20.20
b. Water	12.00	12.00	6.30
c. Sewer	6.00	6.00	4.00
d. Other	2.80 ⁽³⁾		
e. Total	\$ 40.30	\$ 36.08	\$ 30.50

Note:

- (1) This fee is used only in order to provide a basis for equal comparison of the two plans. It is not intended to imply a proposed future fee to be used by PBID which may be more or less depending on the balance of the recommended financing plan.
- (2) Includes the \$3-million needed to be granted to the City.
- (3) This is an estimated cost for operating, maintaining, and administering the water and sewer system owned by PBID. This cost is included in the water and sewer charges listed in the second column.

II. RECOMMENDED WATER AND SEWER PLAN FOR PELICAN BAY

A. WATER

Based on detailed discussions with the Developer, with Mr. Harmon Turner of the Board of Supervisors and a review of the recent agreement between the City of Naples and Collier County for developing their proposed water systems, the following two plans for water supply result in equal user fees to the District customers during the first phase of Development.

Plan A

Stay with the on-site water facilities during the initial development phase, reduce the initial capital outlay to the District to a minimum and delay construction of the off-site well field and transmission line until there are sufficient customers to keep user fees in line with those for the first phase on-site facilities. The future District water supply would be from the off-site well field as proposed in our Critique report.

Plan B

Based upon a significant initial tap fee from the Developers' golf course, equal to their share of the capital costs of the off-site well field and transmission line, and restrictions prohibiting individual on-site irrigation wells, it is feasible to immediately go to the off-site well field. The cost to the District customers, during the first phase of development would be equal to or less than staying with the on-site water

system. The quality of water from off-site would be significantly better and it would make possible the installation of a District owned dual water system, one for potable use and one for irrigation use throughout the development. The irrigation system would also be sized for fire flows to eliminate the situation of expensively treated (R.O.) potable water being used for fire-flows. The water treatment plant size would reduce substantially. The reject water from the reverse osmosis plant would be disposed of in the irrigation system and not into Clam Bay. Attached as EXHIBIT B is a letter from the South Florida Water Management District regarding our proposal off-site well field. EXHIBIT C includes well logs and water quality data on previously drilled test wells in the vicinity of the proposed off-site well field.

Under both water supply plans above, the diameter of the raw water pipeline will be reduced from 20-inch to 12-inch in order to reduce the high initial capital costs. Additional future volumes of off-site well water can be obtained later by the construction of booster pump stations or a parallel 16-inch diameter main. Other minor modifications involve the relocation of some of the on-site underground systems to provide for more flexibility in future phases and all plans assume no participation by others (City or County) unless and until such time as the resulting cost would economically benefit the customers of the District and maintain

the integrity of the entire project. Conceptually, there is no change regarding the sources of water supply and the types of treatment to be used, just the sizing of facilities and the proper time for implementation.

The results of additional economic evaluations are summarized in Exhibits D-1, and D-2. The raw water from the on-site wells cannot be used for irrigation purposes. It does not therefore, appear feasible, economically, to consider the dual irrigation system if the on-site raw water is used significant reductions in the R. O. plant capacity would not be possible. Treated water from the R. O. plant would be made available to irrigate the golf course up until the time that effluent flows from the proposed wastewater treatment plant would satisfy the irrigation demands. The reject water from the R. O. plant would be disposed into Clam Bay by underground diffusion through a shallow injection well or drainage system.

Both water supply plans could be used for approximately five (5) years based on estimated water consumption and projected dwelling unit development schedule.

Since the water quality from the off-site wells is much better than from the on-site wells, the higher capital costs for the pipeline would be offset by the substantial reduction in R. O. plant capacity, the dual irrigation system and the Golf Course tap fee. The operational costs of the treatment would also be reduced and its efficiency increased because of the better off-site raw water quality. Additional expansions to the treatment plant and off-site well field would be staged when necessary to meet future dwelling unit development schedules.

B. WASTEWATER

There are no basic changes envisioned to the recommended wastewater plan. A 0.5 MGD package sewage treatment plant is to be constructed initially plus a holding pond. All of the treated effluent from the sewage treatment plant will be discharged into the holding pond. The holding pond will act as a reservoir for the water to be used for irrigating the golf course. The District would pump raw wastewater to Collier County's Regional Wastewater Treatment when the capacity of its package treatment plant is approached. At this time the District and Developer will have the opportunity to evaluate the options of continuing to operate the package plant as the sole source of irrigation water for the golf course and pumping all remaining raw wastewater to the County plant or abandoning it and pumping all of the District's wastewater to the County plant. For the latter case, raw water or R.O. reject water would become the source for irrigation water.

C. IMPLEMENTATION PLAN

The proposed implementation plans for the water and wastewater systems are outlined in EXHIBIT D-3, D-4 and D-5. Schematic diagrams of the proposed Stage I and future stage systems are shown on EXHIBITS E-1, E-2 and E-3.

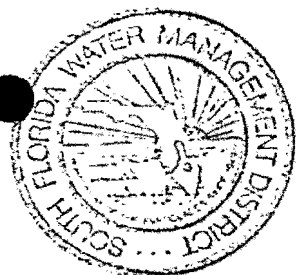
D. RECOMMENDATION

Subject to the intent of Coral Ridge-Collier Properties to pay to the Pelican Bay Improvement District an initial tap fee of approximately

\$300,000 and restrictions prohibiting on-site irrigation wells, the following concept for water and sewer service is recommended.

- o Select the off-site well field along Immokalee Road as the source of water for PBID.
- o Construct the well field and a 12-inch diameter transmission pipeline from the field to the Districts utility site.
- o Construct a 0.5 MGD reverse osmosis water treatment plant.
- o Construct a potable water distribution system with necessary storage for the initial phase of project development.
- o Construct a separate non-potable water system with necessary storage for irrigation and fire flow purposes within the initial phase of development.
- o Construct a wastewater collection system within the initial phase of development.
- o Construct a 0.5 MGD wastewater treatment plant designed for spray irrigation on the golf course.

With the approval of the Board of Supervisors, the Preliminary Engineering Report for water and sewer facilities can be finalized. This document will specifically identify the facilities to be constructed, will allow for the preparation of a more detailed cost estimate which can be used to support necessary bond issues, and will identify the specific engineering tasks and their related costs necessary to implement the systems. At the same time, the detailed financing plan can be completed which will establish user fee rate schedules, connection charges, meter charges, etc.



South Florida

Water Management District

POST OFFICE BOX V, WEST PALM BEACH, FLORIDA, 33402

TELEPHONE 305-585-8300

IN REPLY REFER TO: 7-36-41

August 25, 1977

Robert R. Wright, P.E.
 Post, Buckley, Schuh and Jernigan
 Fortines Building
 2180 W. First Street, Suite 303
 Fort Myers, FL 33901

RE: Pelican Bay

Dear Mr. Wright,

Your letter to Dick Rogers regarding a public water supply for Pelican Bay has been forwarded to me for response.

Your proposal for a 1.5 MGD wellfield along the Cocohatchee River canal may be feasible. From a superficial and preliminary standpoint we can see no objections to the proposal. I have enclosed a checklist and application form for your convenience. Please look over the checklist, in particular, the criteria used in evaluating water use, and then set up a meeting with our staff for a more detailed review of your plans. We are interested in impact on other users, and environmental impact of R/O effluent disposal. Please also indicate answers to the pertinent sections on page 13 regarding R/O even though your withdrawal is from the shallow aquifer.

We wish to insure that all aspects of your application have been thoroughly examined prior to your actual submission in order that any difficult points be resolved in advance.

Sincerely,

PATRICK J. GLEASON, Ph.D.
 Technical Review Division
 Resource Control Department

-360-

PJG/bs
 Enc.

Robert L. Clark, Jr.
 Chairman - Fort Lauderdale

Dr. John M. DeGrove
 Vice Chairman - Boca Raton

C. A. Thomas
 Lake Harbor

Robert W. Padrick
 Fort Pierce

W. J. Scarborough
 Lake Placid

J. B. Soratt

R. Hardy Madison

Geo Shepard

Stanley Hale

Maurice L. Plummer

PELICAN BAY IMPROVEMENT DISTRICT

EXHIBIT A



City of Naples

735 EIGHTH STREET, SOUTH - STATE OF FLORIDA 33940

September 12, 1977

Mr. Robert R. Wright, P.E.
Project Manager
Post, Buckley, Schuh & Jernigan
2180 West First Street
Suite 303
Fort Myers, Florida 33901

Dear Mr. Wright:

Enclosed is a copy of a tentative proposal for the City of Naples to provide water and sewer services to the Pelican Bay property and also effluent irrigation in the future. This matter has not gone before the City Council and, consequently, would need their approval which is why I state at this time that it is tentative. I have, however, briefly discussed this individually with the three members of the ad hoc water committee and I feel they are in general agreement with the outline of the proposal.

I am certain that there will be work involved on your part before responding, but I wanted to suggest that you feel free to contact me or Mr. Smallwood, our consulting engineer, should you have any questions we can help you with.

Sincerely,

George M. Patterson

George M. Patterson
City Manager

GMP/tan
enc.

-361-

xc: Mr. Ted Smallwood

The City will provide Pelican Bay with full service on water and sewer plus sale of effluent under the following general conditions, all of which are subject to refinement through subsequent negotiations and final approval of Council:

1. Immediate annexation to the City.
2. In the alternative, payment of \$3-million which will be refundable from system development charges originating from meter requests within their property.

a) If legal considerations prohibit the procedure enumerated in #2 above, the City will provide for a limited period of time (one year) water and sewer services at bulk rates to be negotiated. Such services will apply to a limited and predefined area of the property which is not to exceed approximately 25 acres. This limited period of time will provide Pelican Bay with the time needed to seek and get an amendment to its powers under the Special Act that will cure the legal difficulties. Failure to procure such amendment, parties will be placed in the same position that they were before this temporary service, except for approximately 25 acres. The bulk rates to be applied for this limited area during the one-year period will be the following approximate rates:

- Finished water - \$.95 to \$1.05 per thousand.
- Sewer service - \$1.00 to \$1.10 per thousand.
- City will commit to furnish effluent irrigation by approximately September, 1979, at about \$.15 to \$.20 per thousand gallons.

This commitment to furnish effluent irrigation is contingent upon negotiating a long-term, full service agreement covering water and sewer. (Note: Water service is presently available immediately adjacent to the property. Sewer service is located on Solana Road at Goodlette Road. Pelican Bay would be responsible for inter-connect to the facilities on Solana Road.)

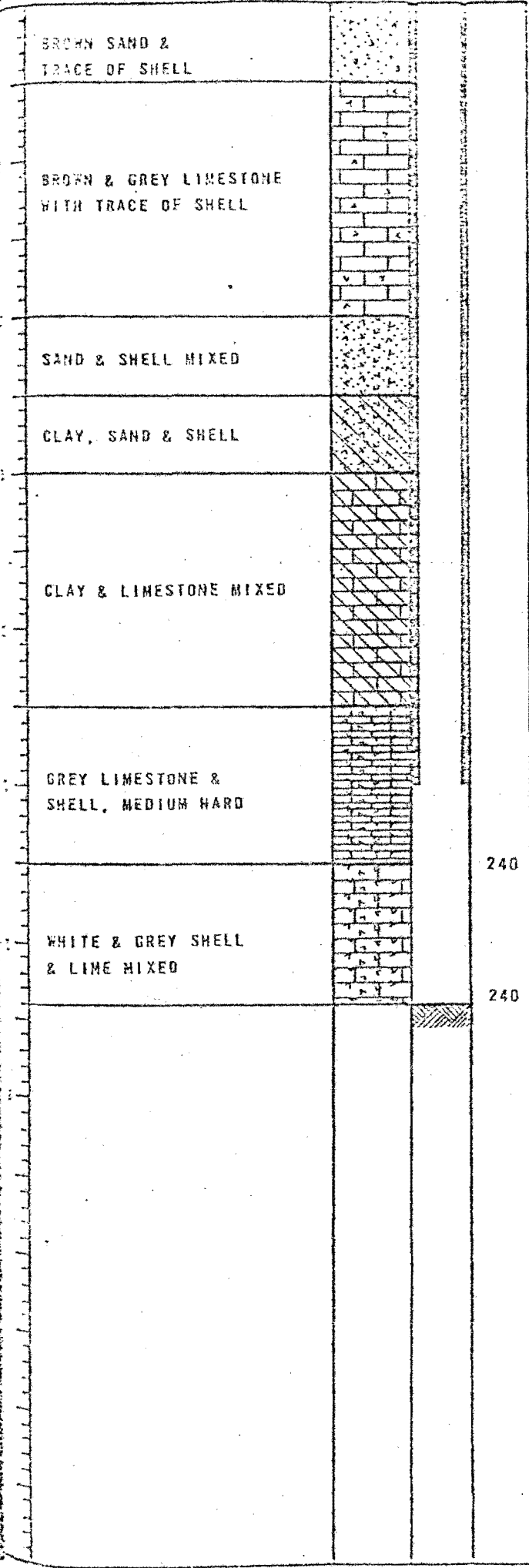


EXHIBIT C

WELL DRILLING REPORT

Well: Test Hole 1 - 1969
City of Naples

Location: SR S-846 (Immokalee Road)
on north side of R/W, 3.7 miles
east of U.S. 41 and 200 ft. west of
spring

County: Collier State Florida

Ground Elevation: +12 ft. m. s. l.

Diameter: 8 inch

Depth: 64 feet

Static Water Level: 3 feet 8 inches

Date: June 23, 1969

Casing: 50 feet of 8-inch I. D.

Screen: None

Construction: Rotary
Pippin Well Drilling, Inc.

Driller: Vero Beach, Florida

Date Finished: June 23, 1969

Pumping Test

Specific Capacity 93 gpm/ft @ 425 gpm

Water Analysis (ppm)

T. D. S.	912	Chloride Cl	234
Total Hard (l)	454	Iron Fe	0.1
M. O. Alkal. (l)	337	Sulfate SO4	120
Calcium (l)	336	Color (APHA)	27

Remarks

-363-

Compiled by JIGB Date Sept. 1969

(l) as CaCO₃

EXHIBIT C

WELL DRILLING REPORT

Well: Test Hole 2 - 1969
City of Naples

Location: SR S-846 (Immokalee Road)
on north side of R/W, 3.75 miles
east of U.S. 41, by spring in canal

County: Collier State Florida

Ground Elevation: +12 feet m. s. l.

Diameter: 8 inches

Depth: 63 feet

Static Water Level: 3 feet 6 inches

Date: June 24, 1969

Casing: 47 feet of 8 inch I. D.

Screen: None

Construction: Rotary

Pippin Well Drilling, Inc.

Driller: Vero Beach, Florida

Date Finished: June 24, 1969

Pumping Test

Specific Capacity 79 gpm/ft @ 425 gpm

Water Analysis (ppm)

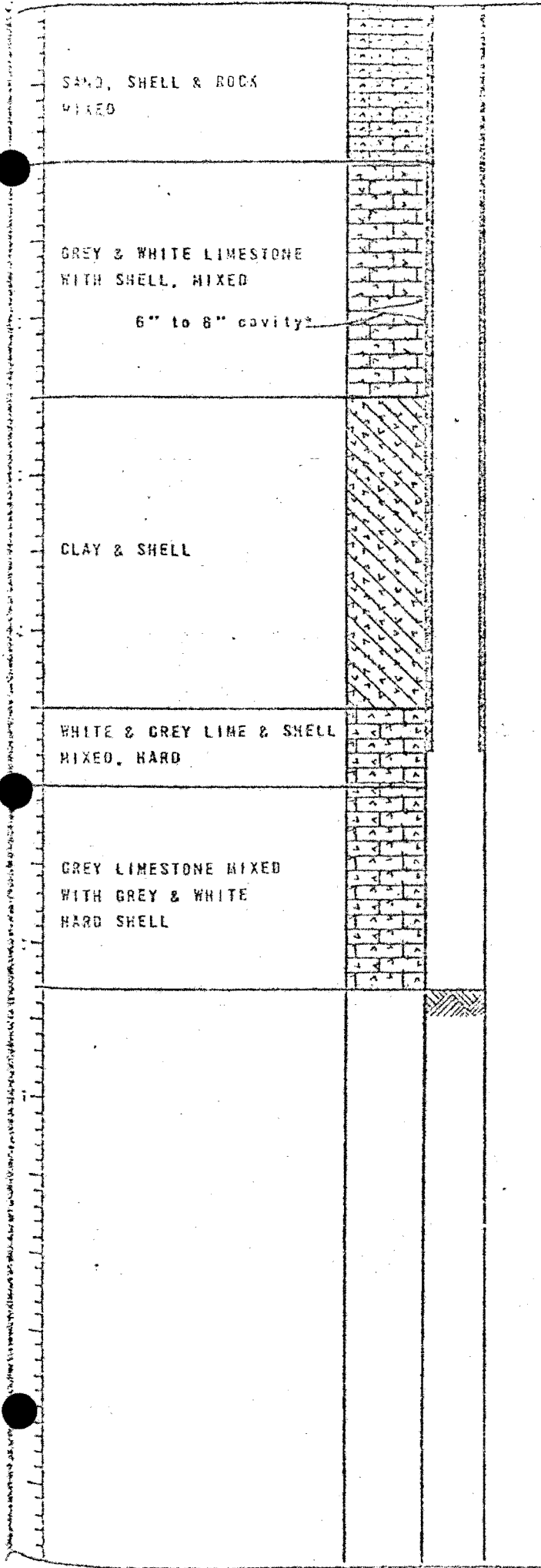
T. D. S.	900	Chloride Cl	220
Total Hard (1)	456	Iron Fe	0.05
M. O. Alkal. (1)	342	Sulfate SO ₄	105
Calcium (1)	338	Color (APHA)	23

Remarks

-364-

Compiled by JIGB Date Sept. 1969

(1) as CaCO₃



* CAVITY CONNECTED TO SPRING (became turbid)

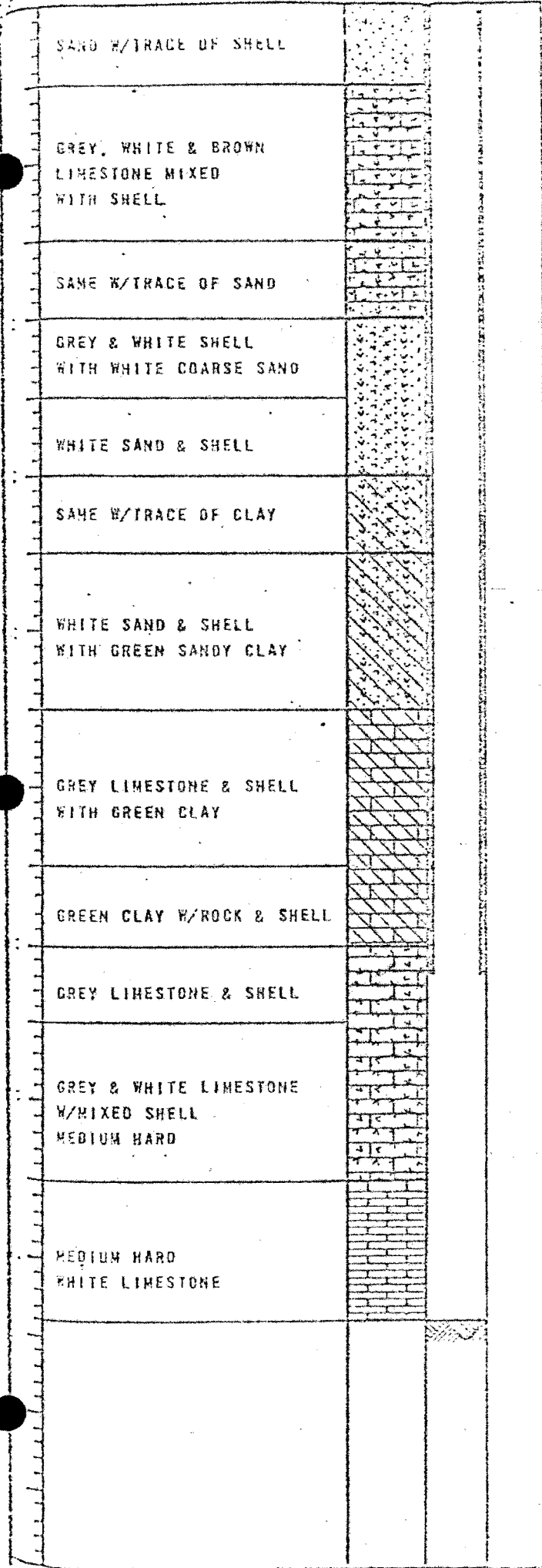


EXHIBIT C

WELL DRILLING REPORT

Well: Test Hole 3 - 1969
City of Naples

Location: SR S-846 (Immokalee Road)
on north side of R/W, 5-1/2 miles
east of U.S. 41

County: Collier State Florida

Ground Elevation: + 13 feet m. s. l.

Diameter: 8 inches

Depth: 84 feet

Static Water Level: 3 feet 5 inches

Date: June 23, 1969

Casing: 61 feet of 8 inch I. D.

Screen: None

Construction: Rotary
Pippin Well Drilling, Inc.

Driller: Vero Beach, Florida

Date Finished: June 23, 1969

Pumping Test

Specific Capacity 83 gpm/ft @ 425 gpm

Water Analysis (ppm)

T. D. S.	756	Chloride Cl	156
Total Hard (l)	406	Iron	Fe 0.3
M. O. Alkal. (l)	340	Sulfate SO4	100
Calcium (l)	298	Color (APHA)	27

Remarks

-365-

Compiled by JIGB Date Sept. 1969

(l) as CaCO₃

PELICAN BAY IMPROVEMENT DISTRICT

EXHIBIT D-1

HYPOTHETICAL COMPARISON OF A 1.0 MGD
WATER SUPPLY SYSTEM USING ON-SITE
WELLS VS OFF-SITE WELLS

ON-SITE (FLORIDAN AQUIFER)

Plant Size = 1.0 MGD
0.26 MGD (Avg.) to G.C. Irrigation
0.74 MGD (Avg.) for Domestic
Capital Cost = \$2,854,000
Total Rate (Avg.) = \$1.58/1000 Gal.
Golf Course Rate = \$1.01/1000 Gal.

OR

G.C. Tap Fee = \$375,000
Total Rate (Avg.) = \$1.46/1000 Gal.
Golf Course Rate = \$0.56/1000 Gal.

OFF-SITE (IMMOKALEE ROAD WELL FIELD)

Plant Size = 0.74 MGD	
0.26 MGD (Avg.) Raw Water to G.C. Irrigation	
0.74 MGD (Avg.) for domestic	
Pipeline Diameter = 10" ϕ (No Booster Pumps)	For 12" ϕ
Capital Cost = \$3,413,000	\$3,554,000
Total Rate (Avg.) = \$1.72/1000 Gal.	\$1.76/1000 Gal.
Golf Course Rate = \$0.42/1000 Gal.	\$0.45/1000 Gal.

OR

G.C. Tap Fee = \$260,000	\$ 296,000
Total Rate (Avg.) = \$1.63/1000 Gal.	\$1.67/1000 Gal.
Golf Course Rate = \$0.08/1000 Gal.	\$0.08/1000 Gal.

Note: - Both systems above will provide an average flow of 260,000 gpd to the Pelican Bay Golf Course and potable water for a range of D.U.'s from 1500 (@ 215 gpcd) to 2700 (@ 120 gpcd).

POST, BUCKLEY, SCHUH & JERNIGAN, INC.
October 17, 1977

PELICAN BAY IMPROVEMENT DISTRICT

EXHIBIT D-2

STATISTICS FOR PHASE I WASTEWATER

Plant Size = 0.50 MGD
Effluent to G.C. Irrigation Water Supply
Capacity for 2200 D.U.'s @ 100 gpcd
to 2700 D.U.'s @ 80 gpcd

Capital Cost = \$1,516,000
Total Rate (Ave.) = \$1.50/1000 Gal.

Rate to G.C. prior to PBID connection to
Regional STP = \$0.00/1000 Gal.

Rate to G.C. after connection to
Regional STP if 0.5 MGD PBID plant
is kept in service as the source of
G.C. irrigation water = \$0.26/1000 Gal.

POST, BUCKLEY, SCHUH & JERNIGAN, INC.
October 17, 1977

PELICAN BAY IMPROVEMENT DISTRICT

EXHIBIT D-3

WATER AND SEWER IMPLEMENTATION PLAN

PLAN A - ON-SITE WATER

STEP I. - WATER AND SEWER - TOTALLY ON-SITE

WTP = 1.0 MGD (R.O.)
STP = 0.5 MGD (For Spray Irrigation)
D.U. Capacity = 2000 to 3600 For Water
 = 2200 to 2700 For Wastewater
Capital Cost = \$4,370,000

Initial Operation

- o All domestic and G. C. Irrigation from R. O. plant.
- o No available STP effluent.

Average Rates

Without G. C. Tap Fee
Water = \$1.58/1000 Gals.
Sewer = \$1.50/1000 Gals.
R. O. Irrigation Water = \$1.01/1000 Gals.
Effluent Irrigation Water = \$0.00/1000 Gals.

With G. C. Tap Fee of \$375,000
Water = \$1.46/1000 Gals.
Sewer = \$1.50/1000 Gals.
R. O. Irrigation Water = \$0.56/1000 Gals.
Effluent Irrigation Water = \$0.00/1000 Gals.

Subsequent Operations

- o STP effluent volume increases.
- o Available capacity for domestic use from R. O. plant increases.
- o Rates stay the same.
- o Source of Irrigation Water converts to STP effluent.
- o Total charge to Golf Course approaches zero.

EXHIBIT D-3 (Con't.)

STEP II. - WATER

- o Build 12" ϕ pipeline without booster stations to off-site well field.
- o Capacity of R. O. (As-Built) increases to 1.25 MGD without additional capital cost for plant.
- o D. U. Capacity increases to 2500 to 4500.
- o Reject water available to G. C. Irrigation to supplement STP effluent.

Capital Cost = \$1,140,000 + Distribution Systems.

- o Rates for water same or less.

FUTURE STEPS - WATER

- o Analyze the economics of parallel pipelines vs booster pumping, etc. based upon historical system data.
- o Add two additional stages of R. O. with capacity based upon historical data.
- o Add two booster pump station on pipeline or build a parallel line.
- o Expand off-site well field as needed.
- o Ultimate D. U. capacity without parallel pipeline and with two boosters = 6,500 D.U.'s @ 215.
= 10,100 D.U.'s @ 120
- o Capital Costs = \$3,733,000 + Distribution Systems.
- o Rates for water same or less.

STEP II. AND FUTURE - WASTEWATER

- o Connect to Collier County Regional STP.
- o Capital Cost = \$1,290,000 (without EPA Grant) + Collection Systems.
- o Rate to PBID Customers = \$1.24/1000 Gals. (with EPA).
= \$1.50/1000 Gals. (without EPA).

EXHIBIT D-3 (Con't.)

- o If 0.50 MGD STP kept on line as source of G. C. Irrigation,
Rate to G. C. = \$0.26/1000 Gals.
- o If 0.50 MGD STP abandoned, source of irrigation is raw off-site
water at a rate of \$0.45/1000 Gals. combined with R. O. reject
water at a rate of \$0.00/1000 Gals.

POST, BUCKLEY, SCHUH & JERNIGAN, INC.
October 17, 1977

PELICAN BAY IMPROVEMENT DISTRICT

EXHIBIT D-4

WATER AND SEWER IMPLEMENTATION PLAN

PLAN B ~~ON-SITE WATER~~

OFF

STEP I. - WATER AND SEWER

WTP = 0.5 MGD (R.O.)
STP = 0.5 MGD (For Spray Irrigation)
Pipeline to Wellfield = 12" ϕ
Dual water systems = Potable and Irrigation/Fire Flow
D.U. Capacity = 1800 to 2700 For Water
 = 2200 to 2700 For Wastewater
Available Flow for Irrigation and Fire Flow = 1.35 MGD
Golf Course Tap Fee = \$300,000
Net Cost to be Financed by PBID = \$4,600,000

Initial Operation

- o All domestic and G. C. Irrigation from off-site raw water.
- o No potable demands.
- o No available STP effluent.

Average Rates

Water = \$1.51/1000 Gals. (Combined Potable and Irrigation)
Sewer = \$1.50/1000 Gals.
G. C. = \$0.08/1000 Gals.
Effluent Irrigation Water = \$0.00/1000 Gals.

Subsequent Operations

- o Potable demands increase.
- o STP effluent volume increases.
- o Available pipeline capacity for potable use from R. O. plant expansions increases.
- o Rates stay the same.
- o Source of Golf Course irrigation Water converts to STP effluent.
- o Total charge to Golf Course approaches zero.

EXHIBIT D-4 (Con't.)

FUTURE STEPS - WATER

- o Reject water available to G. C. Irrigation to supplement STP effluent.
- o Analyze the economics of parallel pipelines vs booster pumping, etc. based upon historical system data.
- o Add two additional stages of R. O. with capacity based upon historical data.
- o Add two booster pump station on pipeline or build a parallel line.
- o Expand off-site well field as needed.
- o Ultimate D. U. capacity without parallel pipeline and with two boosters = 6,500 D.U.'s @ 215.
= 10,100 D.U.'s @ 120
- o Capital Costs = \$2,570,000 + Distribution Systems.
- o Rates for water same or less (Depends on inflation).

STEP II. AND FUTURE - WASTEWATER

- o Connect to Collier County Regional STP.
- o Capital Cost = \$1,290,000 (without EPA Grant) + Collection Systems.
- o Rate to PBID Customers = \$1.24/1000 Gals. (with EPA).
= \$1.50/1000 Gals. (without EPA).
- o If 0.50 MGD STP kept on line as source of G. C. Irrigation, Rate to G. C. = \$0.26/1000 Gals.
- o If 0.50 MGD STP abandoned, source of irrigation is raw off-site water at a rate of \$0.45/1000 Gals. combined with R. O. reject water at a rate of \$0.00/1000 Gals.

POST, BUCKLEY, SCHUH & JERNIGAN, INC.
October 20, 1977

PELICAN BAY IMPROVEMENT DISTRICT

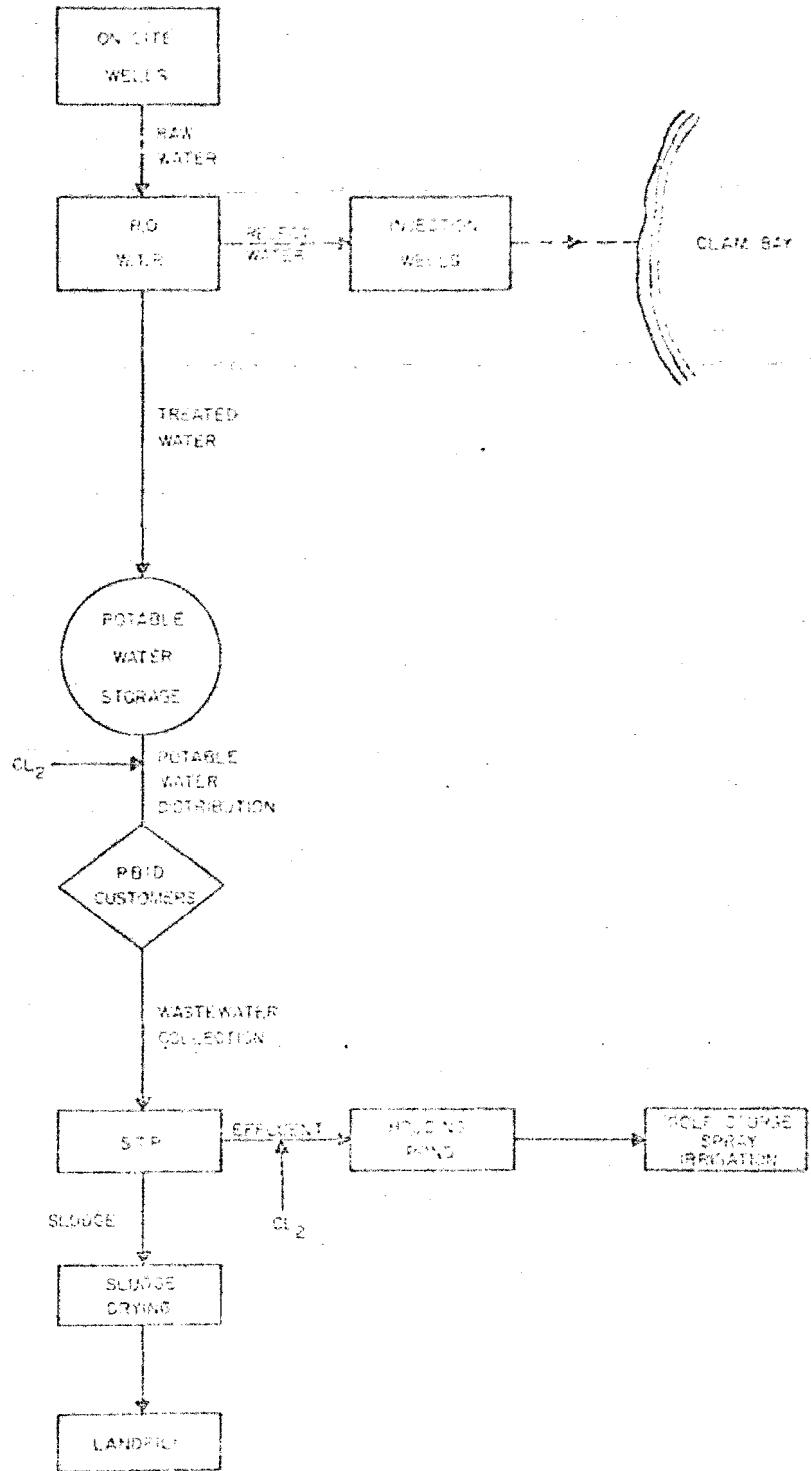
EXHIBIT D-5

ADDITIONAL INFORMATION ON IMPLEMENTATION

- o Delivery of R. O. equipment = 26 weeks from date of purchase order. Manufacturers will require 25% down (Approximately \$150,000) with P. O.
- o Delivery of STP equipment = 18 to 20 weeks from date of purchase order. Manufacturers will not require any down payment based upon credit of purchaser. (P. O. guaranteed by Westinghouse Corporation).
- o Delivery of pipe for underground system = 3 to 4 weeks.
Delivery of pipe fittings = 16 weeks.
- o It is almost impossible to have an operational system by September 1978 even if work is started this month. It will be impossible if work is delayed further.
- o The Collier County Commission would determine if going to the Immokalee Road well field represents a substantial deviation from the DRI (per recently amended sections of Chapter 380 of Florida Statutes) and if so, the DRI would be subject to a re review. If PBID stays on-site no, re-review is required.

POST, BUCKLEY, SCHUH & JERNIGAN, INC.
October 17, 1977

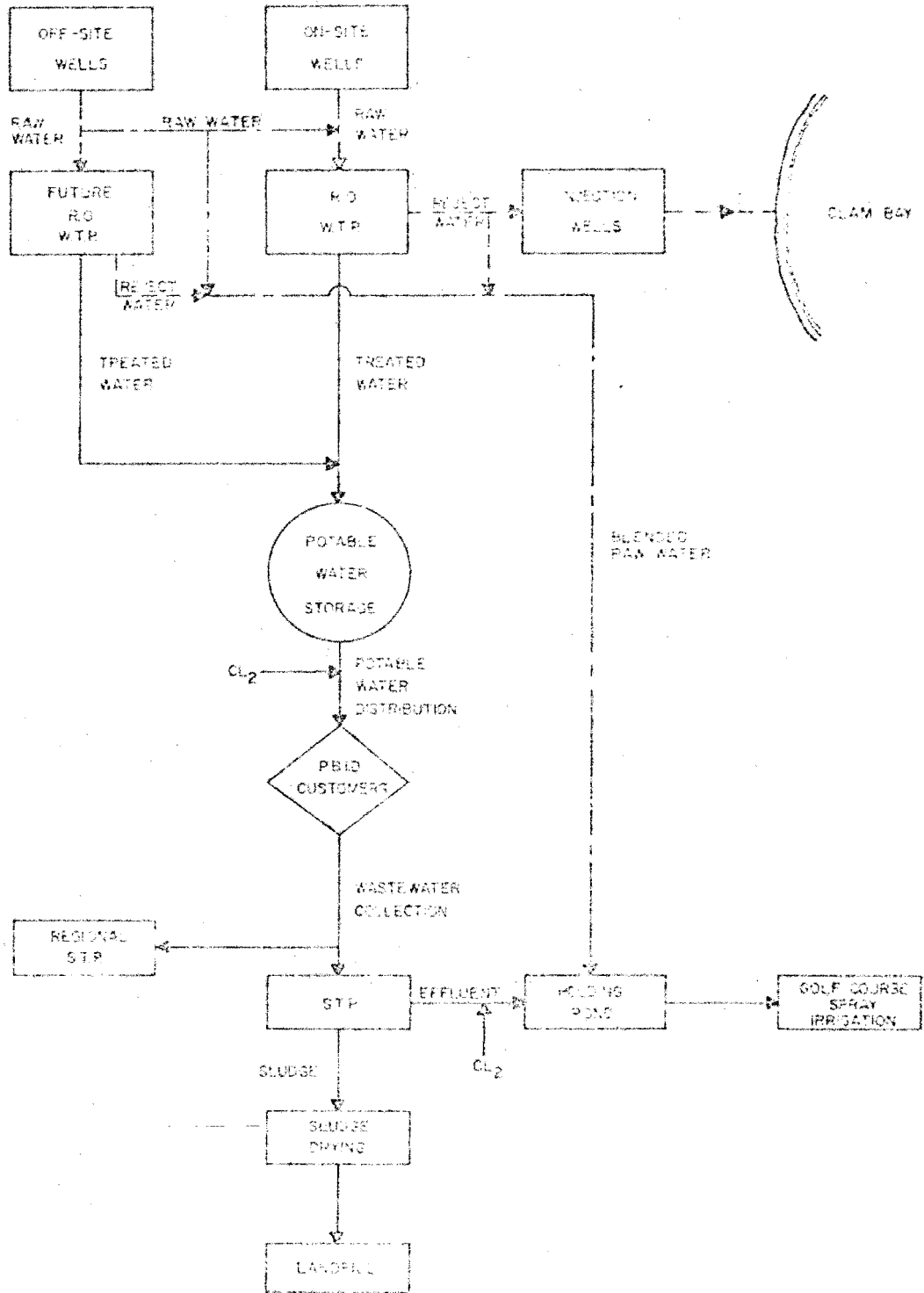
PELICAN BAY IMPROVEMENT DISTRICT



SCHEMATIC DIAGRAM OF PROPOSED
WATER AND SEWAGE SYSTEMS

PLAN A

PELICAN BAY IMPROVEMENT DISTRICT

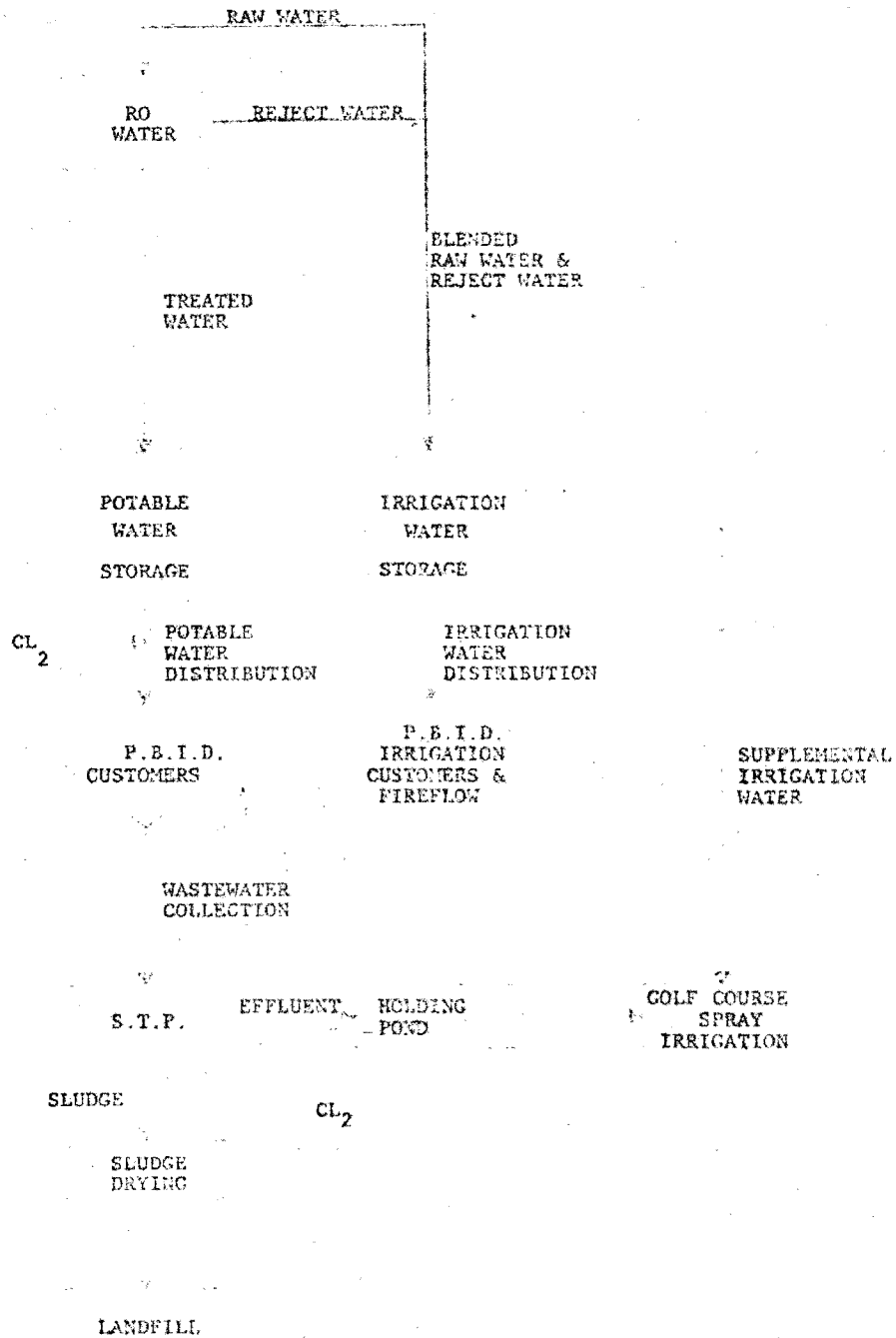


SCHEMATIC DIAGRAM OF PROPOSED
WATER AND SEWAGE SYSTEMS

FUTURE
PLAN A

PELICAN POINT
IMPROVEMENT DISTRICT

OFF SITE
WELLS



SCHEMATIC OF WATER TREATMENT AND DISTRIBUTION
 AND WASTEWATER TREATMENT AND DISPOSAL
 DISTRICT

November 2, 1977

AGENDA - PELICAN BAY

1. Call to order
2. Roll Call
3. Minutes of Prior Meetings
4. Engineer's Report
5. Old Business
6. New Business