

ENGINEER'S REPORT  
FOR THE  
CEDAR HAMMOCK  
COMMUNITY DEVELOPMENT DISTRICT

PREPARED FOR:

BOARD OF SUPERVISORS  
CEDAR HAMMOCK COMMUNITY DEVELOPMENT DISTRICT

ENGINEERS:

BANKS ENGINEERING, INC.  
10501-104 SIX MILE CYPRESS PARKWAY  
FORT MYERS, FLORIDA 33912

FINANCIAL ADVISOR:

FISHKIND AND ASSOCIATES, INC.  
11869 HIGH TECH AVENUE  
ORLANDO, FLORIDA 32817

JUNE, 1999

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**CEDAR HAMMOCK COMMUNITY DEVELOPMENT DISTRICT**

**ENGINEER'S REPORT**

**1. INTRODUCTION**

**1.1 Description of Cedar Hammock Community Development District**

The Community Development served by the Community Development District is located in Collier County, Florida lying within Section 3, Township 50 South, Range 26 East and more precisely being West of County Road 951 and South of Davis Road (State Road 84). The development has entrances on both County Road 951 and Davis Road. The completed subdivision will contain a maximum of 799 dwelling units. The project has a mixture of single and two family units, two-story and four story condominium units, an 18-hole golf course with aqua driving range, clubhouse facility, satellite recreation facilities, and lake/water management areas. The Planned Unit Development (PUD) was approved by the Collier County Board of County Commissioners on December 15, 1998. The PUD Master Plan was approved as the Subdivision Master Plan per Zoning Ordinance 98-115 and its boundaries are coterminous with those of the development.

The community will be developed in two phases. Construction of Phase One improvements will begin in May, 1999. Construction of Phase Two is anticipated to start in January, 2002.

**TABLE 1**

<b>TYPE OF USE</b>	<b>ACREAGE +/-</b>	<b>% OF TOTAL</b>
RESIDENTIAL	52.5	12.6
GOLF COURSE/CLUB/MAINTENANCE	144.7	34.6
RIGHT-OF-WAY	17.0	4.1
PRESERVE & PASSIVE RECREATION	131.3	31.5
LAKES	71.8	17.2
<b>TOTAL</b>	417.3	100%

## **1.2 Purpose and Scope of the Report**

The purpose of this report is to provide a description of the Cedar Hammock Community Development District, the capital improvements to be constructed and financed by the District and an apportionment of the costs for the capital improvements, and their operation and maintenance. The financing and assessment methodology will be developed by the District's financial advisor.

## **2. DISTRICT BOUNDARIES AND PROPERTIES SERVED**

### **2.1 District Boundaries**

Exhibit "A" delineates the proposed boundaries of the District. The District is surrounded by agricultural, residential, undeveloped, and public land uses including County Road 951 to the East and Davis Road to the South.

### **2.2 Description of Properties Served**

The District is located in Section 3, Township 50 South, Range 26 East, within an unincorporated area in Collier County, Florida. The property within the District boundaries is owned by U.S. Home Corporation.

The existing land within the District consists of wetlands and forested open space. The terrain is flat with elevations ranging from 10 to 12 feet NGVD. Ground water is generally at or above natural ground to one foot below natural ground during the wet season.

The entire property within the District is zoned "Planned Unit Development" (PUD) and is depicted on Exhibit "A".

### **2.3 Existing Infrastructure**

The District is located within the service area of the Collier County Water-Sewer Authority which will provide water supply, wastewater collection, treatment and disposal and reclaimed wastewater service for irrigation purposes. The Collier County Board of County Commissioners serves as Ex-Officio Governing Board of the Collier County Water-Sewer Authority.

Potable water for the community will be provided by connection to and extension of existing Collier County Water and Sewer Authority water mains. There is an existing 16" water main located in the road right-of-way of Davis Road and an existing 20" water main in the road right-of-way of County Road. The potable water is provided by the South Collier County Water Plant.

Wastewater from the community will be collected within the site and pumped via force mains and pumping stations located within the site. The wastewater from the site will be pumped to an existing 14" force main maintained and operated by the Collier County Water-Sewer Authority. This existing 14" force main is located in the road right-of-way for Davis Road.

Reclaimed wastewater service for irrigation purposes will be provided by the Collier County Water-Sewer Authority when reclaimed water becomes available from the South Collier County Wastewater Treatment Facility. Reclaimed wastewater mains have not been extended to the community at this time. When said mains are extended, the irrigation lake

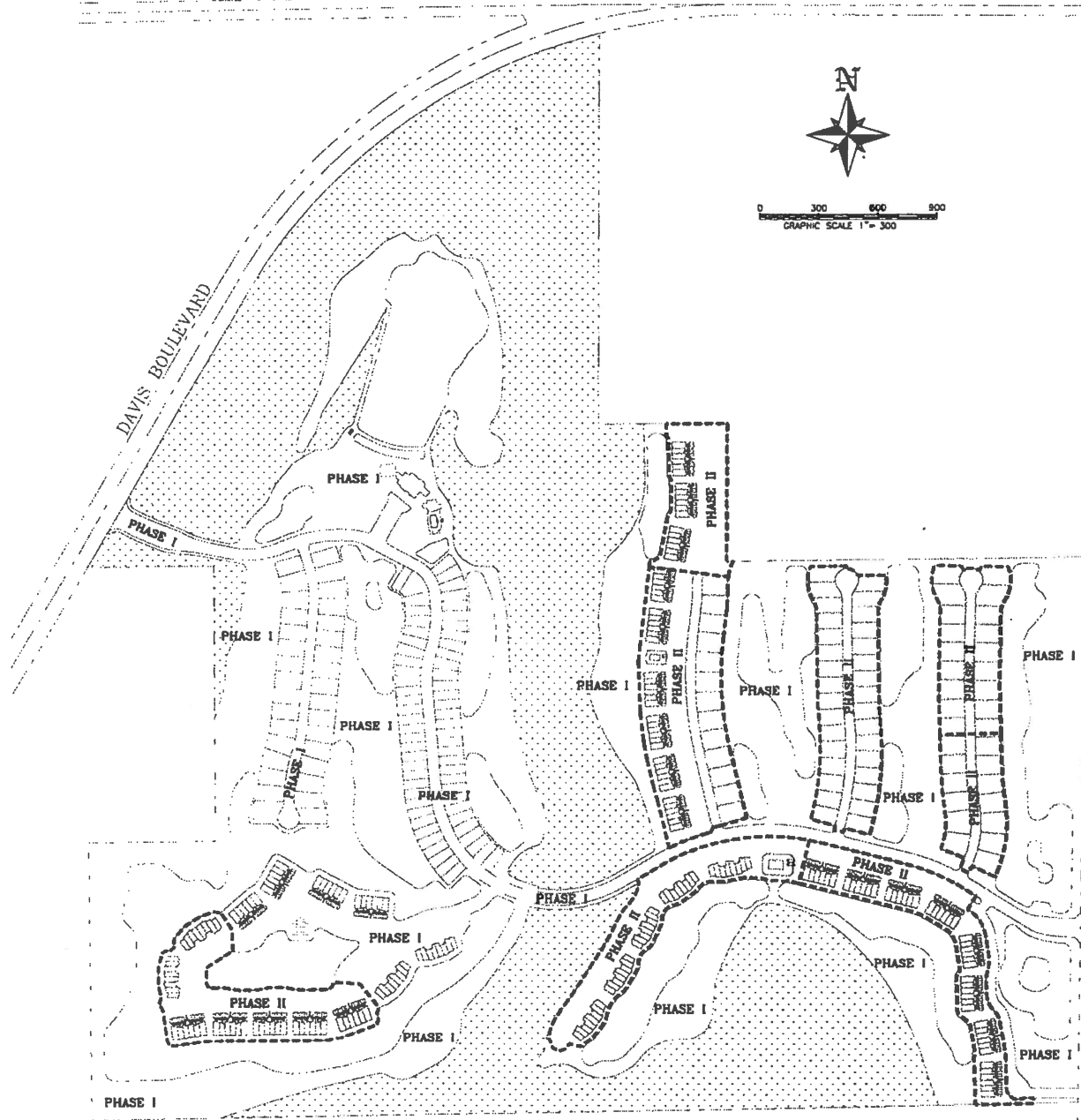
will serve as an effluent storage pond. On-site pumping and storage facilities will supplement the effluent system.

The District is located within the Lely Canal (Collier County District 6) Drainage Basin. Runoff from the Project will be discharged to a slough system which discharges into the Lely Canal and beyond to Henderson Creek, Rookery Bay and ultimately to the Gulf of Mexico.

The District is adjacent to two major arterial roadways. County Road 951 to the East and Davis Road (State Road 84) to the North. The District will have a major connection at each of these arterials.

The District is located within the franchise areas of Florida Power and Light and Sprint United Telephone of Florida. Cable service is available from Media One. These utilities are expected to provide electrical power, telephone service and cable television to the District.

All utilities are either available to the property or will be during the development of the infrastructure.



CR 951

**LEGEND**

- PHASE 1 CONSTRUCTION
- PHASE 2 CONSTRUCTION

**EXHIBIT "A"**

10			
9			
8			
7			
6			
5			
4			
3			
2			
1			
NO.	DATE	REVISION DESCRIPTION	BY

**Banks Engineering, Inc.**  
 Professional Engineers, Planners & Land Surveyors  
 3150 GODOLFFITE-FRANK ROAD - SUITE 701 NAPLES, FLORIDA 34102  
 PH: (813)403-8866 FX: (813)403-8868  
 10501 SIX MILE CYPRESS PARKWAY - SUITE 104 FORT MYERS, FLORIDA 33912  
 PHONE: (813)939-5490 FAX: (813)939-2523

<b>U.S. HOME CORPORATION</b>									
NAPLES, COLLIER COUNTY, FLORIDA									
DATE	PROJECT	DRAWING	DESIGN	DRAWN	CHECKED	SCALE	SHEET	OF	FILE NO. (S-1-R)
7-15-98	1263	_Ext-4	TJS	RJP	DRU	1" = 100'	1	1	03-505-26E

### **3. PROPOSED DISTRICT INFRASTRUCTURE**

#### **3.1 Summary of the Proposed District Infrastructure**

The District infrastructure will generally consist of the following:

- Roadways
- Utilities
- Earthwork
- Water Management
- Security
- Wetland Mitigation
- Professional Services
- Miscellaneous Costs

#### **3.2 Roadways**

The roadways within the District will consist of two-lane undivided sections with additional turn lanes at both entrances. The roadways will provide access to the various land uses within the District and will connect to the existing public roadways which border the District. The roadways will be constructed within platted rights-of-ways or access easements. The length of the proposed roadways within the District is approximately 2.3 miles.

The roadways will be constructed of stabilized subgrade, limerock base, asphalt paving, curbing and gutter, sidewalks, signage and striping. The roadways will also include landscaping and street lighting. The street lighting will be provided and installed by Florida Power and Light. The landscaping will be addressed in a subsequent section. The roadways will be designed and constructed in accordance with appropriate Collier County Land Development Code (LDC) Standards.

#### **3.3 Utilities**

The utilities within the District will consist of potable water, wastewater collection/transmission and irrigation systems which will be designed and constructed in accordance with the appropriate Collier County Water-Sewer Authority and Florida Department of Environmental Protection Standards. It is anticipated the potable water and wastewater collection/ transmission systems will be conveyed to the Collier County Water-Sewer Authority for ownership, operation and maintenance after completion of construction.

The potable water facilities will consist of 8" and 10" distribution mains with all required valves, fire hydrants and water services to individual lots and development tracts. Connections to the existing Authority system will be located at both of the proposed intersections with County Road 951 on the North and Davis Road on the East. There will be approximately 19,000 linear feet of water main constructed.



The wastewater facilities will consist of gravity collection mains with individual lot and development tract services flowing to three on-site pumping stations. Internal gravity and pressure mains will convey the wastewater to a master sewage pumping station and force main connecting to an existing Authority force main located in the Davis Road right-of-way. It is estimated that 13,600 linear feet of gravity collection system and 3,800 feet of force main will be constructed.

The irrigation system will include an irrigation pumping station and irrigation distribution mains with services for lots, development parcels, roadways, landscaped areas and golf course playing areas and amenities. The supply of water for the irrigation pumping station will be from a proposed surface water management lake which will act as a supply reservoir. The irrigation system will also include an irrigation reservoir recharge system consisting of 7 recharge wells and recharge supply mains from the wells to the supply reservoir. A second irrigation reservoir recharge system is also proposed whereby reclaimed wastewater can be introduced into the supply reservoir from a proposed Collier County Water-Sewer Authority reclaimed wastewater main within the Davis Road right-of-way. Approximately 43,400 linear feet of irrigation main will be constructed.

#### **3.4 Earthwork and Clearing**

Stormwater management, irrigation and park amenity lakes within the District will be excavated and the material will be used for fill of roadways, golf course construction and development tracts. It is necessary to fill these components to provide minimum finished elevations for typical storm events and flood protection. Also due to unsuitable material located at the substrata of the community, rock burial zones have been utilized where possible in the community to generate suitable fill for the community.

The lakes will be excavated in accordance with the size and depth requirements of the South Florida Water Management District. Approximately 72 acres of lakes will be excavated resulting in approximately 1.3 million cubic yards of material. All excavated material will be used on-site.

#### **3.5 Storm Water Management**

The District stormwater management system consists of excavated stormwater management lakes, drainage pipes, catch basins, swales, berms and water control structures. Stormwater runoff from within the District will be collected and conveyed to the stormwater management lakes for water quality treatment and peak discharge attenuation. The runoff will be discharged through four (4) control structures to an existing slough system which discharges into the Lely Canal and beyond to Henderson Creek and ultimately into Rookery Bay and the Gulf of Mexico. The stormwater management system will be designed and constructed in accordance with South Florida Water Management District Standards for water quality treatment, peak flow attenuation and flood protection.

### **3.6 Landscaping and Security**

Landscaping will be provided in roadways, perimeter monument walls and District entrances. Landscaping will consist of sod, annual flowers, shrubs, trees, ground cover and littoral plantings in lakes. Existing vegetation will be utilized where possible.

Security for the District will be provided with a manned guardhouse at the Davis Road entrance and an electric gatehouse at the County Road 951 entrance. Entrance walls and berms located along adjacent public rights-of-way and fencing along the perimeter of the District will supplement the entrance features. These facilities will be landscaped to blend into the community and its environment.

### **3.7 Wetland Impact Mitigation**

The wetland impact mitigation within the District will consist of the construction and planting of aquatic littoral zones in the stormwater management lakes, removal of exotic plant species from the preserve areas and restoration and enhancement of the wetland hydroperiods within the wetland preserves and wildlife management areas. Additional wetland impact mitigation is provided within an off-site location.

### **3.8 Professional Service**

The professional services for design and construction of all components within the District consist of engineering of walls and structures for security, roadways, utilities, soils investigation and testing, landscaping design, environmental consultation and construction services for inspection of infrastructure during construction.

### **3.9 Miscellaneous Costs**

These costs include permitting fees for construction of required District infrastructure, the cost of bonding of these facilities and professional fees associated with construction inspection services and the formation of the District.

**4. OPINION OF PROBABLE CONSTRUCTION COSTS**

An opinion of probable costs in 1999 dollars for the District infrastructure is represented in Table 1 and 2. The District will be financing the proposed infrastructure.

The total includes a 10% contingency for the entire costs of District infrastructure. All costs are represented in 1999 dollars. The professional fees consist of land surveying and engineering, soils investigation and testing, and engineering construction services that are necessary for the design, permitting and services during construction of the District infrastructure. The miscellaneous costs consist of permitting fees, bonding, construction engineering inspection services and Community Development District formation that are necessary during construction of District infrastructure.

The costs do not include the legal, administrative, financing, operation or maintenance services necessary to finance, construct and operate the District infrastructure.

It is my professional opinion that these costs are reasonable for the quality of work performed.

**TABLE 2**  
(In thousands of dollars)

Project Infrastructure Costs	18,801
District Improvements Spent to Date	450
District Improvement Phase I	17,418
District Improvements Phase II	1,383

**TABLE 3**

SUMMARY OF THE OPINION OF PROBABLE COST  
FOR  
CEDAR HAMMOCK COMMUNITY DEVELOPMENT DISTRICT

INFRASTRUCTURE	COST (in thousands of dollars)		
	Phase One	Phase Two	TOTAL
ROADWAY	855	429	1,284
WATER & SEWER	900	400	1,300
EARTHWORK	7,037	0	7,037
WATER MANAGEMENT	883	97	980
LANDSCAPING & IRRIGATION	3,115	0	3,115
SECURITY	320	0	320
ELECTRIC SERVICE & LIGHTING	215	0	215
WETLAND MITIGATION	2,810	0	2,810
PROFESSIONAL FEES	961	206	1,167
MISCELLANEOUS	150	125	275
CONTINGENCY	172	126	298
TOTAL	17,418	1,383	18,801

**5. Permits**

Permits for construction are required prior to the commencement of infrastructure improvements. These permits include the following:

- Local zoning approval.
- Army Corps of Engineers Dredge and Fill Permit.
- South Florida Water Management District Environmental Resource Permit.
- South Florida Water Management District Water Use Permit.
- Environmental Protection Agency NPDES.
- Vegetation Removal and Site Grading Permit by Collier County.
- Commercial Excavation Permit by Collier County.
- Approval by Collier County of Final Subdivision Plats.
- Approval by Collier County of Site Development Plans.
- Florida Department of Environmental Protection Water and Wastewater Construction Permits.

All approvals and permits have been obtained for the construction of the golf course and the excavation of lakes and interconnecting piping.

The District Engineer will certify that all permits necessary to complete Phase 1, 2 and 3 have either been obtained or, in his professional opinion, will be obtained.

 OCT 14 1999

Randy S. Banks, P.E.  
District Engineer

Date

ENGINEER'S REPORT  
FOR THE  
CEDAR HAMMOCK  
COMMUNITY DEVELOPMENT DISTRICT  
PHASE ONE

PREPARED FOR:

BOARD OF SUPERVISORS  
CEDAR HAMMOCK COMMUNITY DEVELOPMENT DISTRICT

ENGINEERS:

BANKS ENGINEERING, INC.  
10501-104 SIX MILE CYPRESS PARKWAY  
FORT MYERS, FLORIDA 33912

FINANCIAL ADVISOR:

FISHKIND AND ASSOCIATES, INC.  
11869 HIGH TECH AVENUE  
ORLANDO, FLORIDA 32817

JUNE, 1999

## **5. INTRODUCTION**

This report supplements the original District Engineer's report for the Cedar Hammock Community Development District by providing a description of the Phase One improvements. The original Engineer's Report includes a description and opinion of costs for the infrastructure necessary to complete the entire Cedar Hammock community. The following supplemental report described the infrastructure and opinion of costs necessary to complete Phase One of the project.

## **6. THE PHASE ONE PROJECT**

### **2.1 The location of Phase One is shown on Exhibit "A".**

The infrastructure construction within Phase One began in June, 1999. Phase One is described in the original Engineer's Report and will be funded by the District.

Phase One will generally consist of the following:

1. Roadway
2. Utilities
3. Earthwork
4. Water Management
5. Landscaping and Security
6. Professional Fees
7. Miscellaneous Costs

A detailed description of contents of each infrastructure category is attached in this report.

### **2.2 The location of the Phase One improvements is shown by the shaded areas on Exhibit "A". This represents the extent of work completed by December, 1999. The unshaded area and hatched area represents the extent of the Community Development infrastructure to be completed between January 2002 and December 2004.**

Engineering and design of Cedar Hammock Phase Two is complete and permitted by Collier County. Construction is proposed to commence in January 2002.

### 2.3 OPINION OF COSTS

An opinion of costs in 1999 dollars for the Phase One project is given in Table 1 and 2. The figures are based on actual contract amounts with the infrastructure contractors for the work completed

The total cost for the entire project is \$18,801,000.00. The Community Development District funded portion of this total is \$17,623,100.00, which represents 66.8% of the total cost. The District portion of the Phase One project is \$17,418,000.00 which represents 61.9% of the project improvements.

It is my professional opinion that these costs are reasonable for the quality of work performed.

### 2.4 PERMITS

Permits for construction are required to the commencement of infrastructure improvements. These permits include the following:

8. Local zoning approval.
9. Army Corps of Engineers Dredge and Fill Permit.
10. South Florida Water Management District Surface Water and Water Use Permit.
11. Environmental Protection Agency (N.P.D.E.S.).
12. Florida Department of Environmental Protection Water and Wastewater Construction Permits.

All approvals and permits have been obtained for the golf course construction and Phase One infrastructure.

The District Engineer will certify that all necessary to complete Phase One have either been obtained or, in this expert opinion, will be obtained and that there is no reason to believe that the necessary permits cannot be obtained for the entire development.



**TABLE 1**

**SUMMARY OF THE OPINION OF PROBABLE COST  
FOR  
CEDAR HAMMOCK PHASE ONE COMMUNITY DEVELOPMENT DISTRICT**

<b>INFRASTRUCTURE</b>	<b>COST (in thousands of dollars)</b>
ROADWAY	855
UTILITIES	900
EARTHWORK	7,037
WATER MANAGEMENT	883
LANDSCAPING & IRRIGATION	3,115
SECURITY	320
ELECTRIC SERVICE & LIGHTING	215
WETLAND MITIGATION	2,810
PROFESSIONAL FEES	961
MISCELLANEOUS	150
CONTINGENCY	172
<b>TOTAL</b>	<b>17,418</b>

NOTE: These amounts are represented in 1999 dollars