

**DEER ISLAND COMMUNITY DEVELOPMENT DISTRICT
LAKE COUNTY, FLORIDA**

REPORT OF DISTRICT ENGINEER

**PREPARED BY
GREENHORNE & O'MARA, INC.**

**JUNE 1993
(UPDATED SEPTEMBER 15, 1993)**

DEER ISLAND COMMUNITY DEVELOPMENT DISTRICT
FINAL REPORT OF CONSULTING ENGINEER

A. PROJECT LOCATION AND DESCRIPTION

The Deer Island Community Development District is located northwest of Orlando, Florida in Lake County, just west of Mount Dora, Florida. The District is accessed through Lake County via East Shirley Shores Road which connects to the District's southwest boundary. The District is an isthmus of approximately 385 acres located between Lakes Dora and Beauclair.

The construction proposed by the district is intended to provide offsite and onsite infrastructure for the Deer Island Project. The infrastructure to be provided consists of water, sewer, drainage, stormwater management facilities, roads and ancillary construction.



FIGURE 1

B. ASSUMPTIONS SUPPORTING THE PRELIMINARY ASSESSMENT METHODOLOGY

As part of allocating the Project costs to all non-exempt parcels within the District, the total estimated construction cost of \$9,330,000 was sub-divided into three separate categories. These categories included Roads, Drainage, and Water/Sewer. It was determined that the basis for allocating assessments for these three categories would be Average Daily Trips (ADT's), Drainage Residential Units (DRU's), and Equivalent Residential Units (ERU's), respectively.

The basis for allocating the Roads assessment is the number of Average Daily Trips (ADT's) generated per unit. Using data obtained from the Institute of Transportation Engineers (ITE), the average number of trips generated by a single-family (detached) residential unit is 9.55. Non-residential land uses also generate daily vehicle trips. Average Daily Trips generated by the Golf Course/Club House Facility were estimated by taking the number of anticipated employees (24) times 20.63 trips per employee, or 495 ADT's. These numbers were obtained by a telephone survey of local golf course facilities in Central Florida and "trip" data available from the Institute of Transportation Engineers, respectfully. Similarly, the ADT's generated by the Swim/Tennis Facility and the Sales Office Site were determined by multiplying the anticipated number of employees by the estimated number of trips generated per employee. The resulting ADT numbers are 2 times 100 (200 ADT's) for the Swim/Tennis Facility and 2 times 31 (62 ADT's) for the Sales Office Site.

The basis for allocating the Drainage assessment is measured by a Drainage Residential Unit (DRU), or the amount of impervious area generated by an average residential unit. By definition, impervious areas are those areas such as buildings, driveways, parking lots or other similar areas which contribute to increased stormwater runoff. For this Project, one residential unit is assigned a value of one DRU. It was estimated that the amount of impervious areas present on the Golf Course/Club House Facility, Swim/Tennis Facility and Sales Office Site are 12, 12, and 2 times that of the average single-family (detached) residential unit (12, 12, and 2 DRU's respectfully).

The basis for the Water and Sewer allocation is the Equivalent Residential Unit (ERU), or the amount of water used/sewage generated by an average residential unit. For this Project, one residential unit is assigned a value of one ERU. Based on average numbers determined by the Florida Department of Environmental Regulation, it was estimated that the Golf Course/Club House Facility, Swim/Tennis Facility and Sales Office Site would generate approximately 7, 6, and 1 times that of the average single-family (detached) residential unit (7, 6, and 1 ERU's respectfully).

C. NARRATIVE DESCRIPTION OF THE IMPROVEMENTS (INFRASTRUCTURE)

C.1 WASTEWATER: The District is located within the City of Tavares Wastewater service area. Treatment is to be provided by the City under the existing Florida Department of Environmental Regulation Permit Number D035-181556.

The Districts offsite wastewater transmission system will consist of approximately 6 miles of 6, 8, 12, & 14-inch sanitary forcemain and two (2) wastewater pump stations. The general location of the offsite wastewater transmission system is as shown in Figure 2: Offsite Utilities.

The Districts onsite wastewater collection/transmission system will consist of 8-inch gravity sanitary sewer lines with manholes, four (4) pump stations, as well as 4 & 6-inch sanitary forcemains. The general location of the onsite wastewater collection/transmission system is as shown in Figure 4: Sewer.

C.2 WATER: The District is located within the City of Tavares Water service area, with water provided by the City from deep wells under the existing Water Management District Permit Number 2-069-0816-UVGM2R.

The Districts offsite water transmission system will consist of approximately 6 miles of 14 & 16-inch watermain and related appurtenances. The general location of the offsite water transmission system is as shown in Figure 2: Offsite Utilities.

The Districts onsite water distribution/transmission system will consist of 4, 6, 8 & 10-inch watermain and related appurtenances. The general location of the onsite water distribution/transmission system is as shown in Figure 3: Water.

C.3 ROADWAYS: Access to the District Property from County Road 448 is via Shirley Shores Road and East Shirley Shores Road. The general location and access to the Project site are shown in Figures 1 and 2: Project Location and Offsite Utilities.

Offsite minor intersection improvements are proposed at CR 448 and Shirley Shores Road, which include construction of turning lanes and a sidewalk. Selected improvements include resurfacing sections having a Type S-3 Overbuild Course (75 lbs. per square yard) with an asphaltic concrete friction course FC-2 (5/8"), plus widening sections having an 8" Limerock base and Type S Structural Course (200 lbs. per square yard) with an asphaltic concrete friction course FC-2 (5/8").

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All onsite roadway construction within the District property is proposed as having one of the two following typical rural cross sections:

Typical Section I--(Approximately 0.8 mile)

- o Deer Island Boulevard

This main connector road has a minimum 80 foot Right-of-Way; divided section; two-18 foot topwidths including concrete ribbon curb; typical pavement section of 1-1/2" S-3 Asphalt, 8" Min LBR 100 - 98% Compaction ASSHTO - 180 or Soil Cement Base, and 12" of compacted sub-base.

Typical Section II--(Approximately 3.8 miles)

- o Deer Island Boulevard o Live Oak Drive
o Sunset Point o Live Oak Boulevard
o Island Club Drive o Eagles Way
o Saw Grass Run o Eagles Court
o Osprey Court o Blue Heron Circle
o Cypress Point o Blue Heron Court

These twelve neighborhood roads (11 cul-de-sacs) have typical 50 foot Right-of-Ways; non-divided sections; 26 foot topwidths including concrete ribbon curb; typical pavement section of 1-1/2" S-3 Asphalt, 8" Min LBR 100 - 98% Compaction ASSHTO - 180 or Soil Cement Base, and 12" of compacted sub-base.

In addition to these roadway improvements, additional improvements such as a Roadway Entrance Feature, Street Lights, and an Irrigation System within the Public Right-of-Way are also provided.

C.4 STORMWATER MANAGEMENT: To meet the State, Water Management District and local drainage requirements, the proposed stormwater management plan consists of 19 separate drainage areas consisting of roadway swales, other onsite swales for water quality and several wet detention ponds for water quality treatment. These detention ponds are designed to attenuate the post-developed 10 year-24 hour and 25 year-24 hour storm and to discharge the historic rate of discharge for the same storm rainfall events. The historic rate of discharge for the runoff is directed to control structures by a series of swales and a storm drain system into the wet detention ponds. The wet detention system is also designed to provide additional treatment for biological assimilation of pollutants via a littoral zone which will be planted with herbaceous species for wetland mitigation. The littoral shelf will also support any wetland species that exist on the project.

It is proposed to use the isolated wetlands for stormwater runoff storage and to provide additional water to increase and restore the hydroperiod. The stormwater runoff is being treated for water quality prior to discharge into the wetland. An earth berm is designed along the jurisdictional line of the wetlands for erosion and sediment control measures to minimize pollutant runoff into the existing wetlands and surrounding lakes.

All stormwater treatment swales are designed to have a one (1) foot to two (2) foot separation between the bottom of the swale and the estimated Seasonal High Water Table. A groundwater seepage analysis was provided to support the calculated recovery times needed for the stormwater treatment swales.

C.5 ELECTRIC POWER: The District is located within the Sumter Electric Cooperative (SECO) service area. Adequate capacity is available in order to provide for all required future power connections. A utility easement is proposed along dedicated Right-of-Ways for any required construction by a utility company.

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D. GROSS VS. NET DEVELOPABLE ACRES

The Gross Area of the Deer Island Community Development District is 385.42 acres. This gross area can be broken down into four (4) productive land use areas. These specific areas include Residential areas (net), the Golf Course/Club House facility, the Tennis/Swim Club facility and the Sales Office site. A summary of their acreage is as follows:

Residential (Net)	76.28 Acres
Golf Course/Club House facility	163.91 Acres
Tennis/Swim Club facility	2.04 Acres
Sales Office site	3.41 Acres

Subtotal	245.64 Acres

It is noted that the difference between this subtotal area and the gross area (139.78 acres) includes a combination of dedicated Right-of-Ways, conservation easement areas and smaller non-developable parcels.

A summary outline of these additional areas is as follows:

Right-of-Way Areas	33.05 Acres
Residential Conservation Easement Areas	53.51 Acres
Individual Conservation Easement Areas	49.43 Acres
Small Isolated Non-Developable parcels	3.79 Acres

Subtotal	139.78 Acres

June 1993

DEER ISLAND COMMUNITY DEVELOPMENT DISTRICT
 SCHEDULE OF PROJECT COSTS BASED ON DESIGN PLANS

Item Description	Quantity	Unit	Unit Price	Amount
Mobil/Start up/Perf. Bonds	1	LS	\$300,000.00	\$300,000.00
Clear & Grub For SWM System	200	AC	\$1,000.00	\$200,000.00
Clear & Grub Wetlands	27	AC	\$4,000.00	\$108,000.00
Excavation to Fill	300,000	CY	\$1.65	\$495,000.00
Additional Fill Requirement	75,000	LS	\$4.00	\$300,000.00
Curbing	56,000	LF	\$4.00	\$224,000.00
Compacted Subbase 12"	90,000	SY	\$1.00	\$90,000.00
Soil Cement Base 8"	78,000	SY	\$6.00	\$468,000.00
S-3 Ashphalt 1-1/2"	78,000	SY	\$4.00	\$312,000.00
Sod	14,000	SY	\$1.40	\$19,600.00
Seed & Mulch	140,000	SY	\$0.15	\$21,000.00
"C" Inlets	74	EA	\$1,000.00	\$74,000.00
Control Structures	16	EA	\$1,700.00	\$27,200.00
18" End Section	24	EA	\$350.00	\$8,400.00
24" End Section	21	EA	\$400.00	\$8,400.00
30" End Section	7	EA	\$600.00	\$4,200.00
36" End Section	1	EA	\$800.00	\$800.00
14x23" End Section	2	EA	\$350.00	\$700.00
19x30 End Section	5	EA	\$450.00	\$2,250.00
Underdrain 6"	4,200	LF	\$14.00	\$58,800.00
15" RCP	400	LF	\$15.00	\$6,000.00
18" RCP	4,750	LF	\$18.00	\$85,500.00
24" RCP	3,570	LF	\$24.00	\$85,680.00
30" RCP	1,800	LF	\$30.00	\$54,000.00
36" RCP	180	LF	\$40.00	\$7,200.00
60" RCP	290	LF	\$90.00	\$26,100.00
14x23" RCP	760	LF	\$25.00	\$19,000.00
19x30" RCP	660	LF	\$30.00	\$19,800.00
San/Sewer MH	68	EA	\$1,200.00	\$81,600.00
FM 6" PVC	4,100	LF	\$6.00	\$24,600.00
FM 4" PVC	4,700	LF	\$4.80	\$22,560.00
Lift Station	3	EA	\$40,000.00	\$120,000.00
Large Pump Station	1	EA	\$60,000.00	\$60,000.00
8" San/Sewer	16,500	LF	\$12.00	\$198,000.00
SHC- Duel	99	EA	\$200.00	\$19,800.00
SHC- Sing	85	EA	\$150.00	\$12,750.00
10" PVC Water	14,100	LF	\$11.00	\$155,100.00
8" PVC Water	6,570	LF	\$8.00	\$52,560.00
6" PVC Water	6,670	LF	\$6.00	\$40,020.00
4" PVC Water	2,530	LF	\$4.00	\$10,120.00
WHC- Duel	73	EA	\$350.00	\$25,550.00
WHC- Sing	138	EA	\$225.00	\$31,050.00
Misc. Fittings & Thrusting	1	LS	\$30,000.00	\$30,000.00
10" Gate Valve	17	EA	\$900.00	\$15,300.00
8" Gate Valve	14	EA	\$600.00	\$8,400.00
6" Gate Valve	12	EA	\$400.00	\$4,800.00
Fire Hydrant	28	EA	\$1,500.00	\$42,000.00
Testing & Set Up	1	LS	\$23,000.00	\$23,000.00
Manhole - Type P	5	EA	\$1,800.00	\$9,000.00

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DEER ISLAND COMMUNITY DEVELOPMENT DISTRICT
 SCHEDULE OF PROJECT COSTS BASED ON DESIGN PLANS

Off-site Water & Sewer	1	LS	\$1,370,000.00	\$1,370,000.00
Anticipated Off-Site C.O.	1	LS	\$70,000.00	\$70,000.00
Irrigation Public ROW	1	LS	\$150,000.00	\$150,000.00
Sidewalks	1	LS	\$130,000.00	\$130,000.00
Mitigation/Erosion Control	1	LS	\$250,000.00	\$250,000.00
Construction Management	1	LS	\$200,000.00	\$200,000.00
District Admin. Facility	1	LS	\$200,000.00	\$200,000.00
Lift Station/Street Lights	1	LS	\$125,000.00	\$125,000.00
Roadway Entrance System	1	LS	\$240,000.00	\$240,000.00
ROW Acq./RR/Water/Sewer	1	LS	\$235,000.00	\$235,000.00
Off-site Road Improvements	1	LS	\$250,000.00	\$250,000.00
Fire Sta. Fee	1	LS	\$300,000.00	\$300,000.00
Legal (Permitting)	1	LS	\$230,000.00	\$230,000.00
Impact Fees	1	LS	\$40,000.00	\$40,000.00
Architect & Engineer	1	LS	\$1,150,000.00	\$1,150,000.00

Project Total \$8,951,840.00

Contingencies @ 4%

\$378,160.00

* See Notes In Report

PROJECT
 GRAND TOTAL \$9,330,000.00

** Category Breakdown of Estimate**

Roads:	\$3,591,736
Drainage:	\$2,076,317
Water and Sewer:	\$3,661,947

June 1993

DEER ISLAND COMMUNITY DEVELOPMENT DISTRICT
SCHEDULE OF PROJECT COSTS BASED ON DESIGN PLANSNotes Relating To These Cost Estimates

Greenhorne & O'Mara, Inc. has prepared the attached cost estimates for this Project. Price information has been gathered from various contractors and others to assist in the compilation of these cost estimates. Actual bids have been obtained from contractors based upon plans to assess the reasonableness of projected costs. In some instances allowances or budgets have been established for project costs utilizing input from others. The proposed construction costs shown in this report appear to be reasonable for the development of the Deer Island Community Development District infrastructure. The estimated costs were derived from contractors in the area and others based upon the use of unapproved construction plans prepared for the project. Greenhorne & O'Mara, Inc., can in no way, guarantee these estimated costs. The final cost of this or any project is based on factors out of the control of the engineer such as season of year, weather conditions, size of contractor, availability of supplies and equipment, methods and means of construction, efficiency and capability of contractors, availability of work, unforeseen conditions associated with subsurface soils, changes in laws and regulations, inflation, location of the project, management of construction and phasing, etc. The actual final costs will be different from those shown herein.

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E. DISTRIBUTION OF IMPROVEMENT COSTS:

The capital improvement costs of the Project totals \$9,330,000, as previously identified in the Schedule of Construction Costs. These costs are broken down into three categories (Roads, Drainage/Water Management, and Water/Sewer. Costs were distributed by assigning the cost to a single category or by allocating a percentage over two or more categories, where appropriate. The following is a summary of the distribution of improvement costs.

<u>Item Description</u>	<u>Total Cost</u>	<u>Allocated Costs</u>		
		<u>Roads</u>	<u>Drainage</u>	<u>Water/Sewer</u>
Mobilization/Startup/				
Perf. Bonds/	300,000	150,000	150,000	0
Clear & Grub for SWM	200,000	100,000	100,000	0
Clear & Grub Wetlands	108,000	54,000	54,000	0
Excavation to Fill	495,000	247,500	247,500	0
Additional Fill Req'm't	300,000	150,000	150,000	0
Curbing	224,000	224,000	0	0
Compacted Sub-base 12"	90,000	90,000	0	0
Soil Cement Base 8"	468,000	468,000	0	0
S-3 Asphalt 1-1/2"	312,000	312,000	0	0
Sod	19,600	9,800	9,800	0
Seed & Mulch	21,000	10,500	10,500	0
"C" Inlets	74,000	0	74,000	0
Control Structures	27,200	0	27,200	0
18" End Section	8,400	0	8,400	0
24" End Section	8,400	0	8,400	0
30" End Section	4,200	0	4,200	0
36" End Section	800	0	800	0
14"x23" End Section	700	0	700	0
19"x30" End Section	2,250	0	2,250	0
Underdrain 6"	58,800	0	58,800	0
15" RCP	6,000	0	6,000	0
18" RCP	85,500	0	85,500	0
24" RCP	85,680	0	85,680	0
30" RCP	54,000	0	54,000	0
36" RCP	7,200	0	7,200	0
60" RCP	26,100	0	26,100	0
14"x23" RCP	19,000	0	19,000	0
19"x30" RCP	19,800	0	19,800	0
San. Sewer MH	81,600	0	0	81,600
Forcemain 6" PVC	24,600	0	0	24,600
Forcemain 4" PVC	22,560	0	0	22,560
Lift Stations (3)	120,000	0	0	120,000
Large Pump Station	60,000	0	0	60,000
8" San. Sewer	198,000	0	0	198,000
SHC-Duel	19,800	0	0	19,800
SHC-Single	12,750	0	0	12,750
10" PVC Water	155,100	0	0	155,100
8" PVC Water	52,560	0	0	52,560

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<u>Item Description</u>	<u>Total Cost</u>	<u>Allocated Costs</u>		
		<u>Roads</u>	<u>Drainage</u>	<u>Water/Sewer</u>
6" PVC Water	40,020	0	0	40,020
4" PVC Water	10,120	0	0	10,120
WHC-Duel	25,550	0	0	25,550
WHC-Single	31,050	0	0	31,050
Misc. Fittings & Thrusting	30,000	0	0	30,000
10" Gate Valve	15,300	0	0	15,300
8" Gate Valve	8,400	0	0	8,400
6" Gate Valve	4,800	0	0	4,800
Fire Hydrant	42,000	0	0	42,000
Testing & Setup	23,000	0	0	23,000
Manhole Type "P"	9,000	0	9,000	0
Offsite Water & Sewer	1,370,000	0	0	1,370,000
Anticipated Offsite C.O.	70,000	0	0	70,000
Irrigation Public ROW	150,000	150,000	0	0
Sidewalks	130,000	130,000	0	0
Mitigation/Erosion Control	250,000	84,000	84,000	82,000
Construction Management	200,000	67,000	67,000	66,000
District Admin. Building	200,000	67,000	67,000	66,000
Lift Station/Streetlights	125,000	62,500	0	62,500
Roadway Entrance System	240,000	240,000	0	0
ROW Acq./RR/Water/Sewer	235,000	0	0	235,000
Offsite Road Improvements	250,000	250,000	0	0
Fire Station Fee	300,000	115,755	66,188	118,057
Legal (Permitting)	230,000	76,000	76,000	78,000
Impact Fees	40,000	13,000	13,000	14,000
Architect & Engineer	1,150,000	383,000	383,000	384,000
Contingencies	378,160	137,681	101,299	139,180
Grand Total	9,330,000	3,591,736	2,076,317	3,661,947

Except for the Fire Station Fee and Contingencies, the above subtotals were evenly allocated over one, two or three categories, as appropriate. Distributions were made for the Fire Station Fee and Contingencies based on ratios proportional to the subtotal construction costs for each category.

The Final Distribution of Construction Costs are shown in the following table:

Roads	\$3,591,736
Drainage	\$2,076,317
Water/Sewer	\$3,661,947
Grand Total	\$9,330,000

F. PERMITS AND APPROVALS:

The following is a summary of the outstanding permits or approvals to be obtained and/or extended:

- o Department of Environmental Regulation Application to Construct Domestic Wastewater Collection/Transmission Systems (onsite)
- o Railroad Pipe Crossing and Facilities License Agreement
- o Florida Central Railroad Company Public Road Crossing Agreement

All other permits, consents or licenses, and all notices to or filings with governmental agencies necessary for the construction and acquisition of the Project have been made or obtained. In addition, there is no reason to believe that any of the above mentioned outstanding permits or approvals will not be obtained or made when required.

G. ACQUISITION VS. CONSTRUCTION COSTS

A summary of the completed portion of the Project that will be acquired by the District include:

- o Plans and Specifications for the Construction of Off-site Water Main and Sewer Force Main, Pump Stations and Ancillary Construction in support of the Deer island Club
- o Plans and Specifications for the Construction of On-site Infrastructure and Ancillary Construction in support of the Development of the Deer Island Club
- o Plans for the Construction of Miscellaneous Intersections and Sidewalks.
- o Preliminary Plat and Phase 1 of the Final Record Plat for the Deer Island Club

At this time, no actual improvements have been constructed either on-site or offsite. However, the off-site improvements were advertized and bid on December 14, 1992. There is currently a signed contract made with Speegle Construction Inc. for the construction of these offsite improvements in the amount of \$1,370,000. This amount, as well as anticipated change orders, are included in the Schedule of Project Costs. In addition, the on-site improvements have recently been advertized, with its formal award being made after detailed bid evaluations. Upon award of this contract, remaining construction items to be let include offsite road improvements, the projects entrance feature, irrigation and lighting systems.

Of the total \$9,330,000 Project costs, approximately 22% or \$2,012,500 is associated with acquisition costs. The acquisition costs include the following line items shown in the Schedule of Project Costs: ROW Acquisition/RR/Water/Sewer, Fire Station Fee, Legal (permitting), Impact Fees, Architect & Engineer, and an appropriate fraction of the contingency costs. The remainder of the Project Costs, approximately 78% or \$7,317,500 is associated with that portion of the Project to be constructed.

H. SUMMARY AND CONCLUSIONS:

The proposed improvements as referenced in the Final Report of Consulting Engineer and as outlined in the Schedule of Construction Costs based on Design Plans are necessary for the functional development of the Deer Island Project. The Project planning and design are in accordance with the current governmental regulatory requirements. The proposed improvements will provide their intended function, if constructed in substantial compliance with the design.

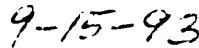
Items of construction in this report are based on current Design plans and are subject to those market conditions and product demands noted. However, it is my opinion that the items included can be constructed for the estimated costs. The costs used are reasonable and are based on 1993 dollars reflective of construction costs in the Lake County area.

It is my professional opinion that with the addition of the proposed capital improvements, the total benefits added to the lands located in the Deer Island Community Development District will exceed the construction cost of these improvements. This statement is based on comparing the Estimated Project Costs with the difference between current market value and future market value (with improvements), as determined by Realvest Appraisal Services, Inc., dated April 10, 1992.

In addition, a review of this referenced supplemental appraisal update shows that the estimated future retail price of the lots after the improvements have been made, is approximately \$31 million. This estimated future value is substantially above the proposed \$12.6 million in District bond debt financing.



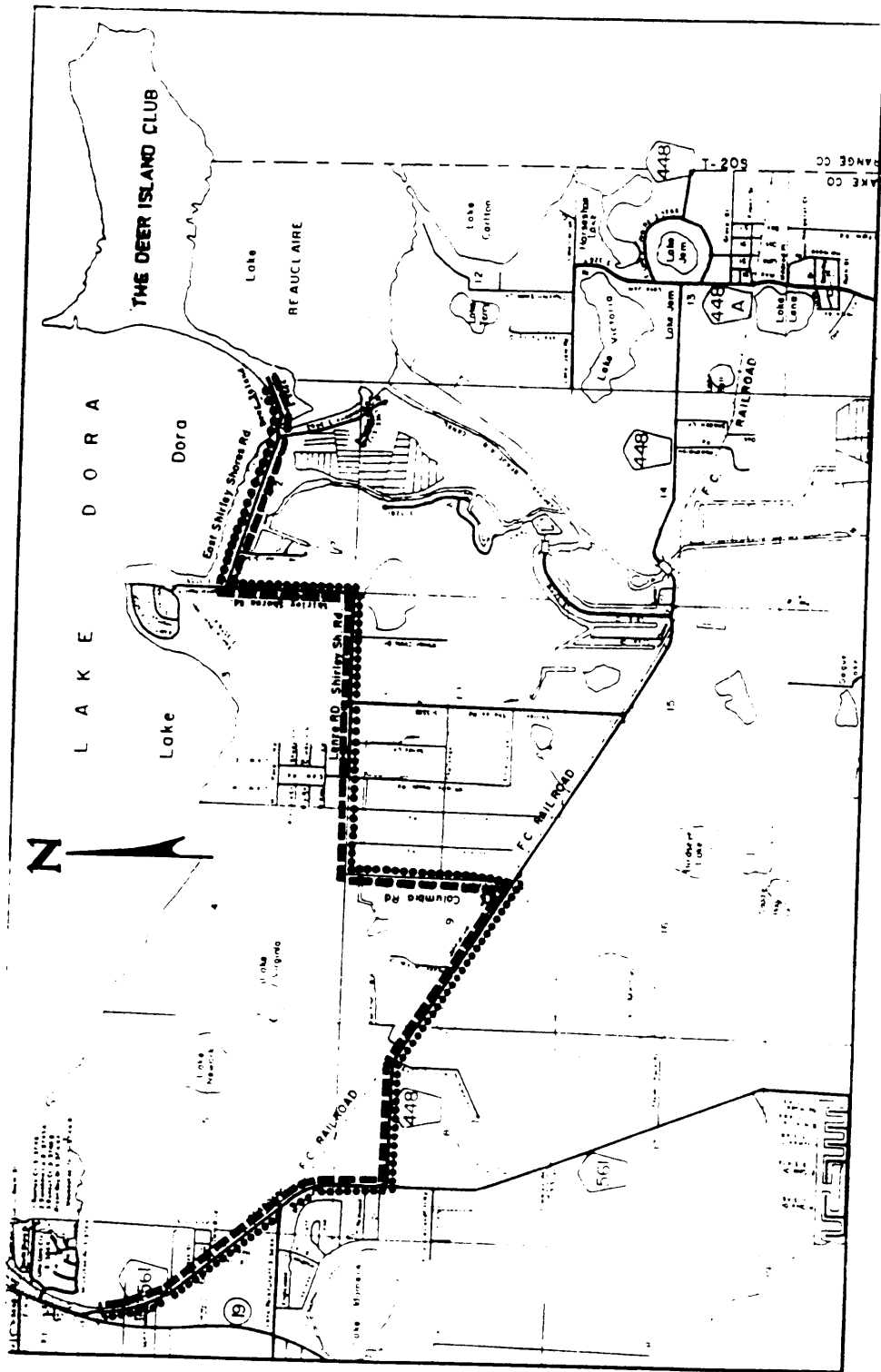
William E. Nell, P.E. #0046114



Date

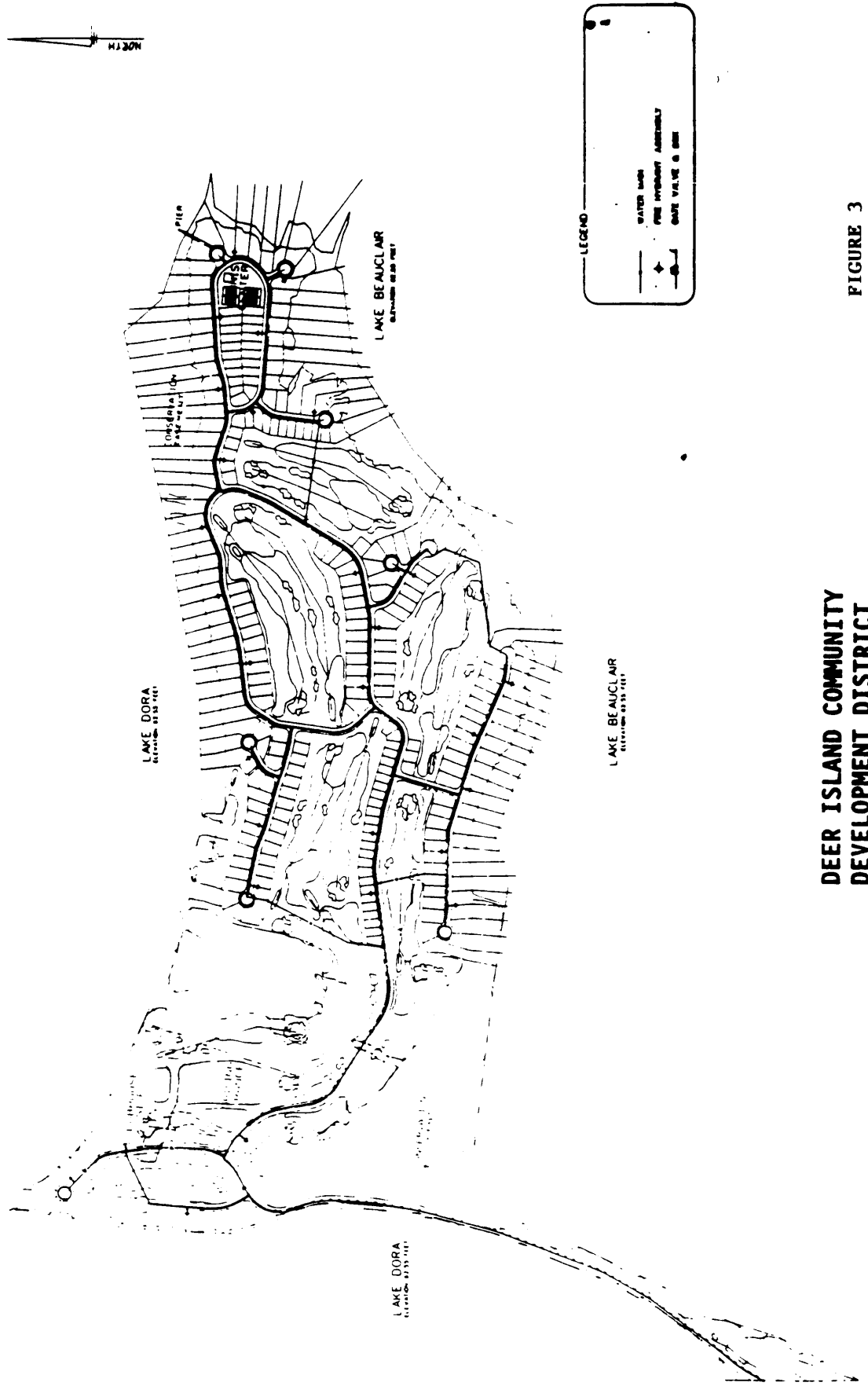
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APPENDIX



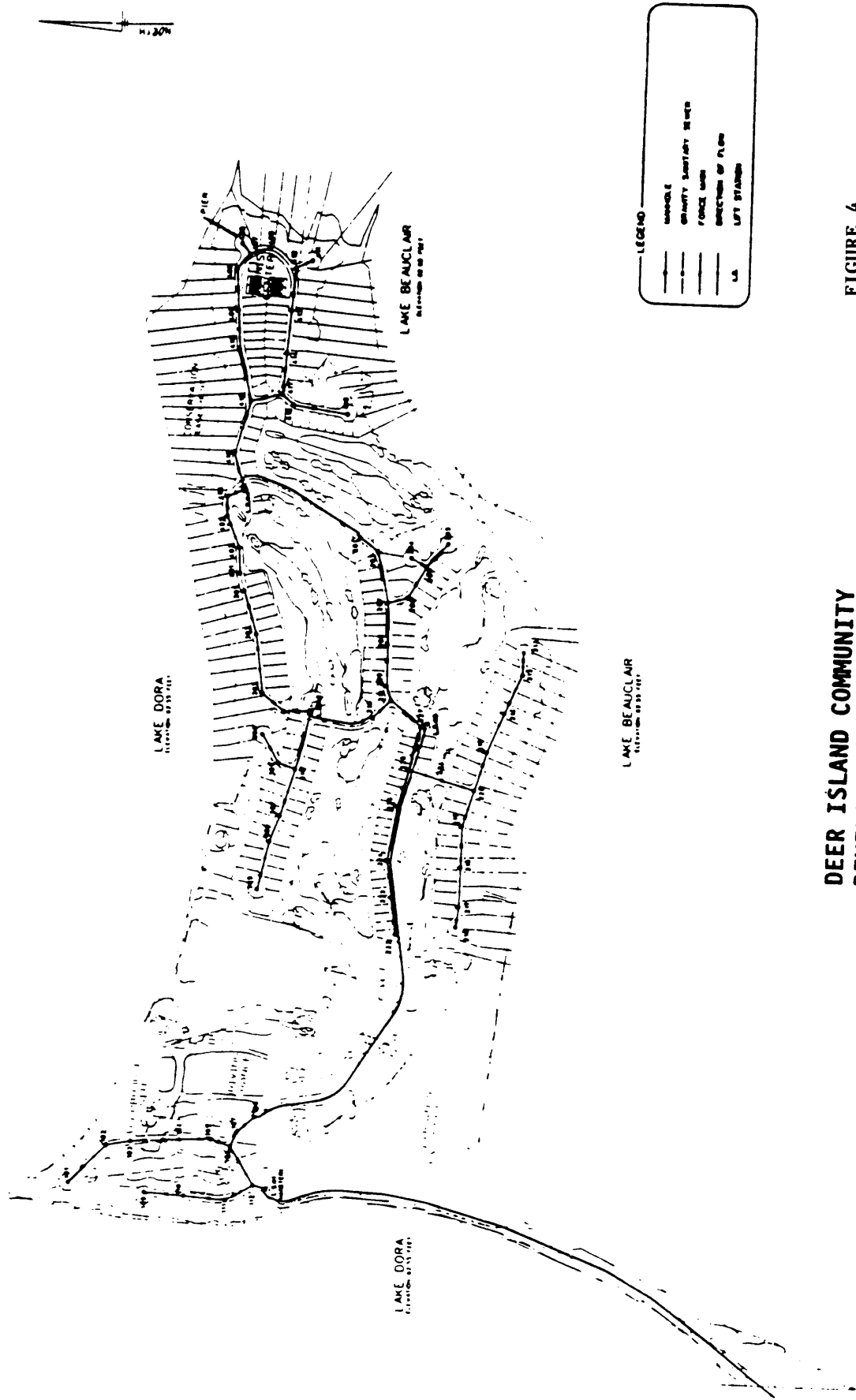
**DEER ISLAND COMMUNITY
DEVELOPMENT DISTRICT**

FIGURE 2



DEER ISLAND COMMUNITY
DEVELOPMENT DISTRICT
WATER

FIGURE 3



LEGEND

—	WATER
- - -	SEWER
· · ·	GAS
—	ROAD
—	STRUCTURE
LA	LAKE

DEER ISLAND COMMUNITY
DEVELOPMENT DISTRICT
SFWRP

FIGURE 4

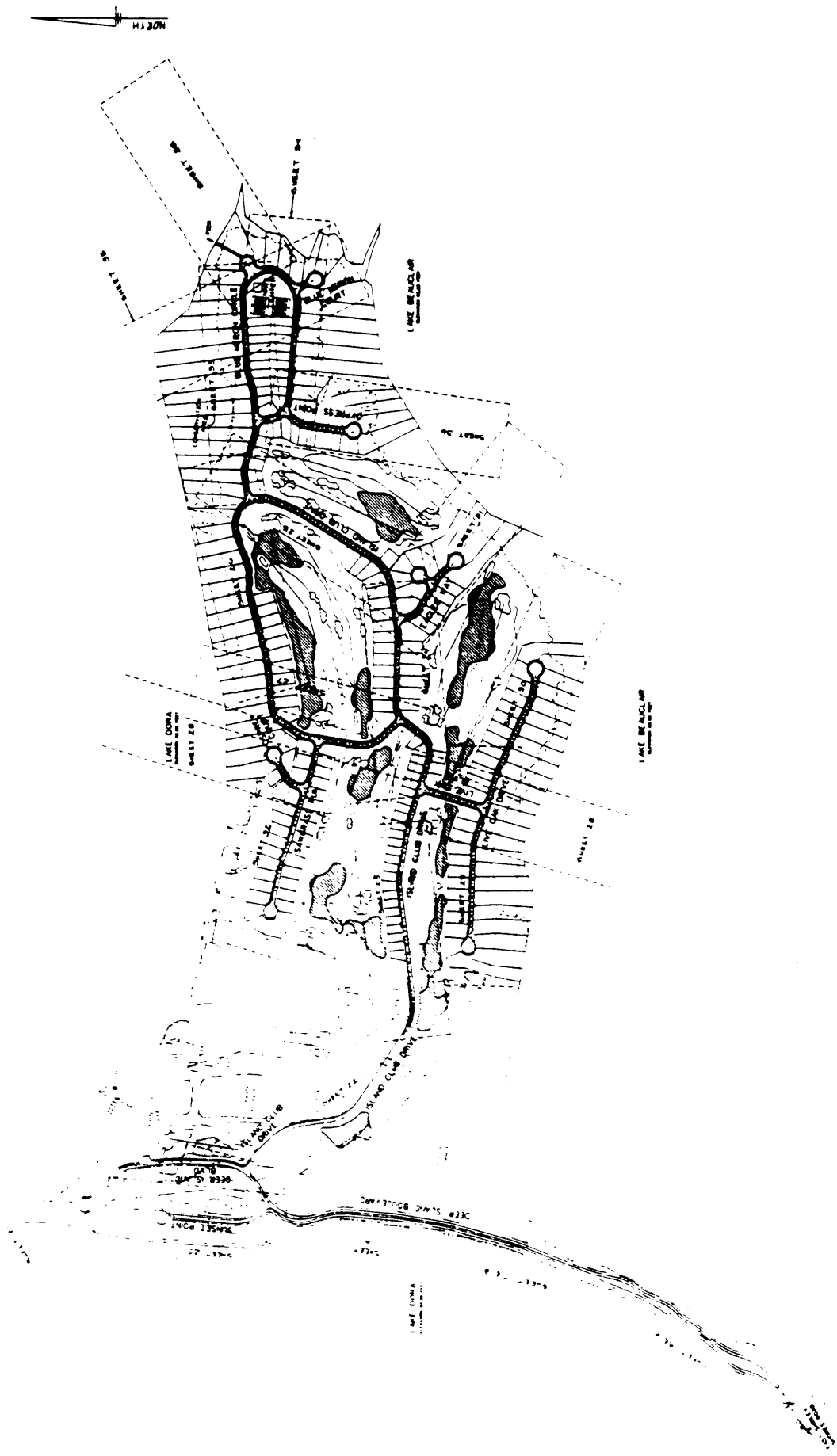


FIGURE 6

OVERALL SITE PLAN

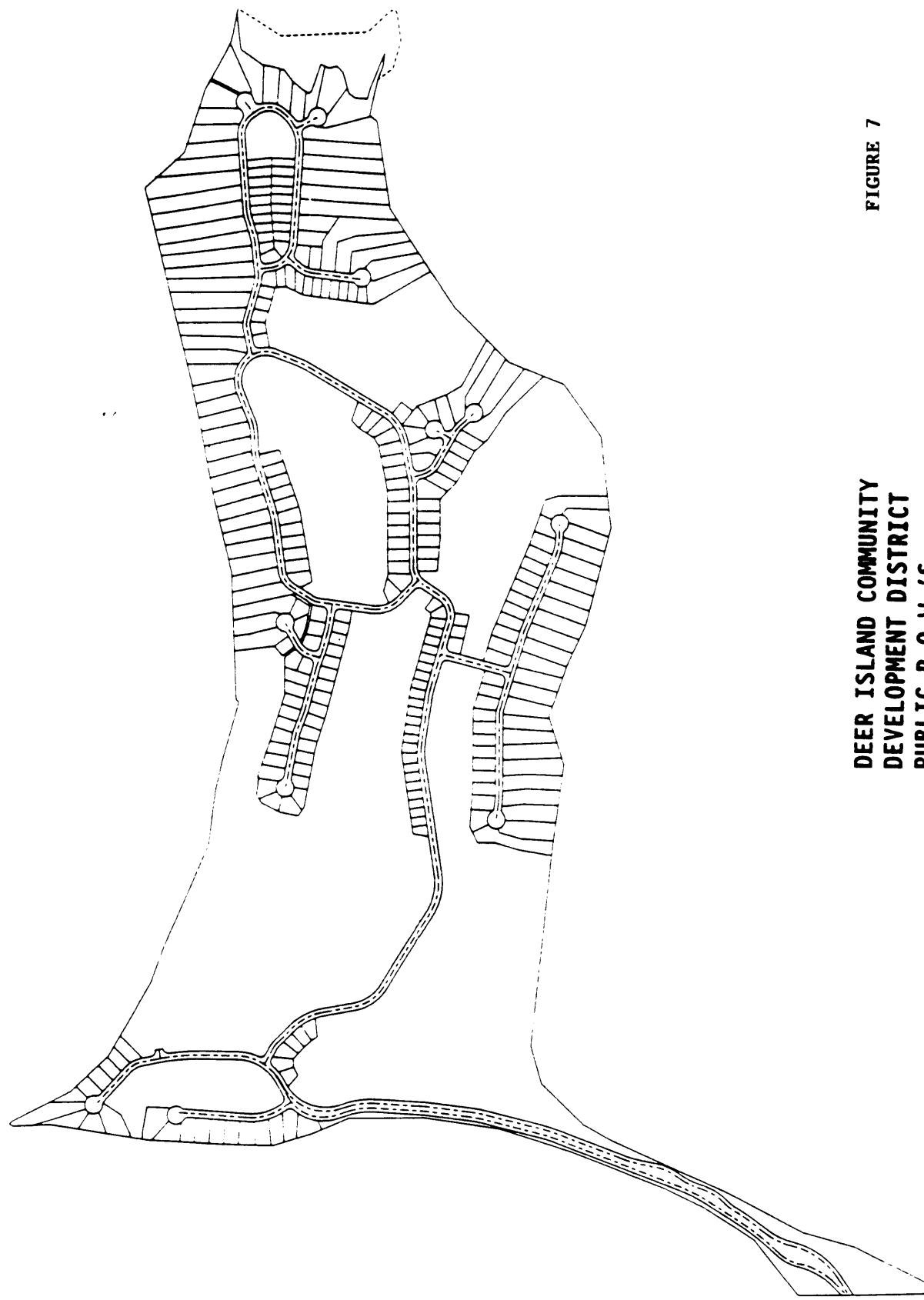


FIGURE 7

DEER ISLAND COMMUNITY
DEVELOPMENT DISTRICT
PUBLIC R.O.W.'S