

LAST DATE FOR GOVERNING BOARD ACTION:
NOVEMBER 9, 1989

SURFACE WATER MANAGEMENT STAFF REVIEW SUMMARY

DRAFT
Subject to Governing
Board Approval

APPLICATION NO.: 890504-3

PROJECT NAME: KISSIMMEE BAY

LOCATION: Osceola County, FL, S16,17/T25S/R30E

APPLICANTS NAME AND ADDRESS: SANDPIPER ESTATES LIMITED PARTNERSHIP
180 North LaSalle, Suite 1916
Chicago, Illinois 60601

OWNER: Same as applicant

DEVELOPER: Same as applicant

ENGINEER: ARRINGTON-HOBBS & ASSOCIATES, INC.

REVIEWER RATING OF PROJECT DESIGN

1. Suitability of land for proposed use	GOOD	FAIR	POOR	NOT APPLICABLE
2. Water quantity impacts	GOOD	FAIR	POOR	NOT APPLICABLE
3. Water quality impacts	GOOD	FAIR	POOR	NOT APPLICABLE
4. Environmental impacts	GOOD	FAIR	POOR	NOT SIGNIFICANT
5. Water conservation	GOOD	FAIR	POOR	NOT APPLICABLE
6. Flood protection	GOOD	FAIR	POOR	NOT APPLICABLE
7. Relief from rainstorm inconvenience	GOOD	FAIR	POOR	NOT APPLICABLE
8. System maintainability	GOOD	FAIR	POOR	NOT APPLICABLE
9. Overall use of land with respect to water resource	GOOD	FAIR	POOR	NOT APPLICABLE
10. Water management system with respect to feasible alternatives	GOOD	FAIR	POOR	NOT APPLICABLE

MICROFILMED

12/11/89 - adopted by governing board

SURFACE WATER MANAGEMENT EVALUATION

APPLICATION NUMBER 890504-3 DATE: July 17, 1989

PROJECT NAME: Kissimmee Bay

LOCATION: Kissimmee COUNTY Osceola

SECTION 16, 17 TOWNSHIP 25 SOUTH RANGE 30 EAST

PROJECT AREA 270 ACRES DRAINAGE AREA 270 ACRES

FACILITIES:

1. EXISTING: The project site consists of uplands with pine flatwoods and improved pasture. Historical runoff from the land sheet flows into East Lake Tohopekaliga. East Lake Tohopekaliga outfalls to the Kissimmee River.

2. PROPOSED: The construction and operation of a surface water management system serving a single/multi family residential subdivision consisting of six (6) basins (240.4 acre tract) with the following description:

BASIN 1 (10): (37.24 acres) The proposed surface water management system consists of inlets and culverts directing runoff into one (1) 1.39 acre wet retention pond (Pond No. 1). Discharge is to Pond No. 3 of Basin 30.

BASIN 2 (20): (35.21 acres) The proposed surface water management system consists of inlets and culverts directing runoff into one (1) 2.38 acre wet retention pond (Pond No. 2). Discharge is to Pond No. 5 of Basin 50.

BASIN 3 (30): (27.69 acres) The proposed surface water management system consists of inlets and culverts directing runoff into one (1) 1.86 acre wet retention pond (Pond No. 3). Discharge is to Pond No. 4 of Basin 40.

BASIN 4 (40): (41.43 acres) The proposed surface water management system consists of inlets and culverts directing runoff into one (1) 9.97 acre wet retention pond (Pond No. 4). Discharge is to Pond No. 6 of Basin 60.

BASIN 5 (50): (31.6 acres) The proposed surface water management system consists of inlets and culverts directing runoff into one (1) 6.62 acre wet retention pond (Pond No. 5). Discharge is to Pond No. 6 of Basin 60.

BASIN 6 (60): (67.23 acres) The proposed surface water management system consists of inlets and culverts directing runoff into one (1) 15.96 acre wet detention pond (Pond No. 6). Discharge is to East Lake Tohopekaliga.

NOTE: PLEASE SEE EXHIBIT NO. 1A FOR A NODAL DIAGRAM OF THE SWM SYSTEM.

OFFSITE AREAS: Potential offsite inflows will be routed around this project.

DRAINAGE BASIN Upper Kissimmee RECEIVING BODY East Lake Tohopekaliga

RUN OFF FORMULA: Pre vs Post ALLOWABLE DISCHARGE 137.5 CFS

WATER QUALITY

A. ADVERSE IMPACTS EXPECTED: NO

B. BEST MANAGEMENT PRACTICES UTILIZED: Retention provided equal to the runoff volume generated by 2.5" times the % of impervious acreage for this project.

Water quality detention will be provided within Pond No. 6 of Basin No. 60.

BASIN 6 (60):

REQUIRED DETENTION 22.9 AC-FT
DETENTION METHOD Wet Detention
DETENTION PROVIDED 22.9 AC-FT

WASTEWATER REUSE:

At this time, wastewater reuse is not proposed. If (in the future) the applicant proposes to reuse wastewater for irrigation purposes - Special Condition No.'s: 19, and 20 will be in effect. Also, approval of the proposed wastewater reuse plan will be required from the Florida Department of Regulation (FDER).

COPY

BASIN 1 (10):

FLOOD PROTECTION			
LOCAL ROAD CRITERIA	<u>10</u>	YEAR, <u>24</u>	HOUR STORM
FLOOD CONTOUR	<u>64.1</u>	FEET NGVD	
MINIMUM ROAD GRADE	<u>65.3</u>	FEET NGVD	
PARKING LOT CRITERIA	<u>N/A</u>	YEAR, <u>N/A</u>	HOUR STORM
FLOOD CONTOUR	<u>N/A</u>	FEET NGVD	
MINIMUM PARKING LOT GRADE	<u>N/A</u>	FEET NGVD	
BASIN DESIGN FREQUENCY	<u>10</u>	YEAR, <u>72</u>	HOUR STORM
FLOOD CONTOUR	<u>65.4</u>	FEET NGVD	
DESIGN DISCHARGE	<u>49.0</u>	CFS	
100 YEAR FLOOD			
FLOOD CONTOUR	<u>62.0</u>	FEET NGVD	
MINIMUM FLOOR ELEVATION	<u>68.2</u>	FEET NGVD	
FIA FLOOD ELEVATION	<u>N/A</u>	FEET NGVD	

BASIN 2 (20):

FLOOD PROTECTION			
LOCAL ROAD CRITERIA	<u>10</u>	YEAR, <u>24</u>	HOUR STORM
FLOOD CONTOUR	<u>61.8</u>	FEET NGVD	
MINIMUM ROAD GRADE	<u>63.0</u>	FEET NGVD	
PARKING LOT CRITERIA	<u>N/A</u>	YEAR, <u>N/A</u>	HOUR STORM
FLOOD CONTOUR	<u>N/A</u>	FEET NGVD	
MINIMUM PARKING LOT GRADE	<u>N/A</u>	FEET NGVD	
BASIN DESIGN FREQUENCY	<u>10</u>	YEAR, <u>72</u>	HOUR STORM
FLOOD CONTOUR	<u>63.6</u>	FEET NGVD	
DESIGN DISCHARGE	<u>38.1</u>	CFS	
100 YEAR FLOOD			
FLOOD CONTOUR	<u>62.0</u>	FEET NGVD	
MINIMUM FLOOR ELEVATION	<u>66.2</u>	FEET NGVD	
FIA FLOOD ELEVATION	<u>N/A</u>	FEET NGVD	

BASIN 3 (30):

FLOOD PROTECTION			
LOCAL ROAD CRITERIA	<u>10</u>	YEAR, <u>24</u>	HOUR STORM
FLOOD CONTOUR	<u>61.1</u>	FEET NGVD	
MINIMUM ROAD GRADE	<u>63.0</u>	FEET NGVD	
PARKING LOT CRITERIA	<u>N/A</u>	YEAR, <u>N/A</u>	HOUR STORM
FLOOD CONTOUR	<u>N/A</u>	FEET NGVD	
MINIMUM PARKING LOT GRADE	<u>N/A</u>	FEET NGVD	
BASIN DESIGN FREQUENCY	<u>10</u>	YEAR, <u>72</u>	HOUR STORM
FLOOD CONTOUR	<u>63.7</u>	FEET NGVD	
DESIGN DISCHARGE	<u>69.4</u>	CFS	
100 YEAR FLOOD			
FLOOD CONTOUR	<u>62.0</u>	FEET NGVD	
MINIMUM FLOOR ELEVATION	<u>65.9</u>	FEET NGVD	
FIA FLOOD ELEVATION	<u>N/A</u>	FEET NGVD	

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BASIN 4 (40):

FLOOD PROTECTION			
LOCAL ROAD CRITERIA	<u>10</u>	YEAR, <u>24</u>	HOUR STORM
FLOOD CONTOUR	<u>59.4</u>	FEET NGVD	
MINIMUM ROAD GRADE	<u>61.1</u>	FEET NGVD	
PARKING LOT CRITERIA	<u>N/A</u>	YEAR, <u>N/A</u>	HOUR STORM
FLOOD CONTOUR	<u>N/A</u>	FEET NGVD	
MINIMUM PARKING LOT GRADE	<u>N/A</u>	FEET NGVD	
BASIN DESIGN FREQUENCY	<u>10</u>	YEAR, <u>72</u>	HOUR STORM
FLOOD CONTOUR	<u>61.2</u>	FEET NGVD	
DESIGN DISCHARGE	<u>38.3</u>	CFS	
100 YEAR FLOOD			
FLOOD CONTOUR	<u>62.0</u>	FEET NGVD	
MINIMUM FLOOR ELEVATION	<u>62.0</u>	FEET NGVD	
FIA FLOOD ELEVATION	<u>N/A</u>	FEET NGVD	

BASIN 5 (50):

FLOOD PROTECTION			
LOCAL ROAD CRITERIA	<u>10</u>	YEAR, <u>24</u>	HOUR STORM
FLOOD CONTOUR	<u>60.1</u>	FEET NGVD	
MINIMUM ROAD GRADE	<u>61.1</u>	FEET NGVD	
PARKING LOT CRITERIA	<u>N/A</u>	YEAR, <u>N/A</u>	HOUR STORM
FLOOD CONTOUR	<u>N/A</u>	FEET NGVD	
MINIMUM PARKING LOT GRADE	<u>N/A</u>	FEET NGVD	
BASIN DESIGN FREQUENCY	<u>10</u>	YEAR, <u>72</u>	HOUR STORM
FLOOD CONTOUR	<u>61.2</u>	FEET NGVD	
DESIGN DISCHARGE	<u>48.4</u>	CFS	
100 YEAR FLOOD			
FLOOD CONTOUR	<u>62.0</u>	FEET NGVD	
MINIMUM FLOOR ELEVATION	<u>62.0</u>	FEET NGVD	
FIA FLOOD ELEVATION	<u>N/A</u>	FEET NGVD	

BASIN 6 (60):

FLOOD PROTECTION			
LOCAL ROAD CRITERIA	<u>10</u>	YEAR, <u>24</u>	HOUR STORM
FLOOD CONTOUR	<u>58.9</u>	FEET NGVD	
MINIMUM ROAD GRADE	<u>59.8</u>	FEET NGVD	
PARKING LOT CRITERIA	<u>N/A</u>	YEAR, <u>N/A</u>	HOUR STORM
FLOOD CONTOUR	<u>N/A</u>	FEET NGVD	
MINIMUM PARKING LOT GRADE	<u>N/A</u>	FEET NGVD	
BASIN DESIGN FREQUENCY	<u>10</u>	YEAR, <u>72</u>	HOUR STORM
FLOOD CONTOUR	<u>60.2</u>	FEET NGVD	
DESIGN DISCHARGE	<u>65.9</u>	CFS	
100 YEAR FLOOD			
FLOOD CONTOUR	<u>62.0</u>	FEET NGVD	
MINIMUM FLOOR ELEVATION	<u>62.0</u>	FEET NGVD	
FIA FLOOD ELEVATION	<u>N/A</u>	FEET NGVD	

NOTE: ALL PROPOSED FINISHED FLOORS ARE AT OR ABOVE THE 100 YEAR FLOOD ELEVATION OF 62.0' NGVD FOR EAST LAKE TOHOPEKALIGA.

ENVIRONMENTAL

A. SIGNIFICANT ADVERSE IMPACTS EXPECTED: NO

B. COMMENTS: The 270+ acre project site is an improved pasture directly connected to East Lake Tohopekaliga. The site supports approximately 7.5 acres of wetlands. The majority of the wetlands consist of herbaceous marshes. The water tables of the wetlands have been negatively altered by the existing farm ditches. The construction of the golf course and the residential area will eliminate about 6 acres of wetlands and a 1.5 acre wooded wetland will be protected. To offset the wetland loss, 13.65 acres of littoral and marsh areas will be created in the surface water management system to be constructed around the golf course. The final discharge is located near the northeast corner of the site. In this area there is a wetland in the existing ditch connecting the site to East Lake Tohopekaliga. The wetland within the property boundaries is dominated by the common aggressive vegetation of cattails and primrose willow. This 2.21 acre area will be enhanced by the removal of the aggressive vegetation and revegetation.

LAND USE

PRESENT ZONING R1-A , ALLOWED DENSITY 1.74 DU/A

PROPOSED USE Residential , PROPOSED DENSITY 1.74 DU/A

COMPATIBLE: YES

WASTEWATER TREATMENT: Septic tanks.

ADDITIONAL COMMENTS: None

WATER USE: This project is concurrent with Water Use application No.:890602-4.

APPLICABLE LAND AREA

	<u>THIS PHASE</u>	
TOTAL	<u>270.0</u>	ACRES
WATER MANAGEMENT	<u>45.69</u>	ACRES *
IMPERVIOUS	<u>91.81</u>	ACRES
DWELLING	<u>472</u>	UNITS

* Includes 4.94 acres of natural wetlands.

LOCATION: Kissimmee Bay is located due east of the intersection of Boggy Creek Road and Fortune Road - on the west shore of East Lake Tohopekaliga.

City: Unincorporated

County: Osceola

Special District: N/A

SFWMD Basin: Upper Kissimmee

Operation Entity: Stein/Clifton Group (golf course owner)

The Staff recommends that the following be issued:

- General Permit
- Construction and Operation Permit
- Construction Permit
- Operation Permit
- Letter of Conceptual Approval
- Right-of-Way Occupancy Permit

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APPLICATION REVIEWER:

SUPERVISOR/CHECKER:

TECHNICAL: J. Passehl

K. Dickson

WATER QUALITY: J. Passehl

J. Marshall

ENVIRONMENTAL: E. Edmundson

S. Bradow

MAJOR ISSUES: NONE

BASED ON THE INFORMATION PROVIDED, DISTRICT RULES HAVE BEEN ADHERED TO.

SECTION SUPERVISOR: Kevin G. Dickson
Kevin G. Dickson, P.E.
Supervising Professional
North Section

Staff recommendation is for approval subject to the following 12 Standard Limiting and 20 Special Conditions (for conceptual approvals only, these conditions as a minimum will apply to subsequent construction permitting).

DIVISION APPROVAL: Anthony W. Waterhouse
Anthony W. Waterhouse, P.E.
Assistant Division Director
Surface Water Management Division
Resource Control Department

DATE: 9/21/89

DRAFT
Subject to Governing
Board Approval

LIMITING CONDITIONS

1. THE PERMITTEE SHALL PROSECUTE THE WORK AUTHORIZED IN A MANNER SO AS TO MINIMIZE ANY ADVERSE IMPACT OF THE WORKS ON FISH, WILDLIFE, NATURAL ENVIRONMENTAL VALUES, AND WATER QUALITY. THE PERMITTEE SHALL INSTITUTE NECESSARY MEASURES DURING THE CONSTRUCTION PERIOD, INCLUDING FULL COMPACTION OF ANY FILL MATERIAL PLACED AROUND NEWLY INSTALLED STRUCTURES, TO REDUCE EROSION, TURBIDITY, NUTRIENT LOADING AND SEDIMENTATION IN THE RECEIVING WATERS.
2. WATER QUALITY DATA FOR THE WATER DISCHARGED FROM THE PERMITTEE'S PROPERTY OR INTO SURFACE WATERS OF THE STATE SHALL BE SUBMITTED TO THE DISTRICT AS REQUIRED. PARAMETERS TO BE MONITORED MAY INCLUDE THOSE LISTED IN CHAPTER 17-3. IF WATER QUALITY DATA IS REQUIRED, THE PERMITTEE SHALL PROVIDE DATA AS REQUIRED, ON VOLUMES OF WATER DISCHARGED, INCLUDING TOTAL VOLUME DISCHARGED DURING THE DAYS OF SAMPLING AND TOTAL MONTHLY DISCHARGES FROM THE PROPERTY OR INTO SURFACE WATERS OF THE STATE.
3. THE PERMITTEE SHALL COMPLY WITH ALL APPLICABLE LOCAL SUBDIVISION REGULATIONS AND OTHER LOCAL REQUIREMENTS. IN ADDITION THE PERMITTEE SHALL OBTAIN ALL NECESSARY FEDERAL, STATE, LOCAL AND SPECIAL DISTRICT AUTHORIZATIONS PRIOR TO THE START OF ANY CONSTRUCTION OR ALTERATION OF WORKS AUTHORIZED BY THIS PERMIT.
4. THE OPERATION PHASE OF THIS PERMIT SHALL NOT BECOME EFFECTIVE UNTIL A FLORIDA REGISTERED PROFESSIONAL ENGINEER CERTIFIES THAT ALL FACILITIES HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE DESIGN APPROVED BY THE DISTRICT. WITHIN 30 DAYS AFTER COMPLETION OF CONSTRUCTION OF THE SURFACE WATER MANAGEMENT SYSTEM, THE PERMITTEE SHALL SUBMIT THE CERTIFICATION AND NOTIFY THE DISTRICT THAT THE FACILITIES ARE READY FOR INSPECTION AND APPROVAL. UPON APPROVAL OF THE COMPLETED SURFACE WATER MANAGEMENT SYSTEM, THE PERMITTEE SHALL REQUEST TRANSFER OF THE PERMIT TO THE RESPONSIBLE ENTITY APPROVED BY THE DISTRICT.
5. ALL ROADS SHALL BE SET AT OR ABOVE ELEVATIONS REQUIRED BY THE APPLICABLE LOCAL GOVERNMENT FLOOD CRITERIA.
6. ALL BUILDING FLOORS SHALL BE SET AT OR ABOVE ELEVATIONS ACCEPTABLE TO THE APPLICABLE LOCAL GOVERNMENT.
7. OFF-SITE DISCHARGES DURING CONSTRUCTION AND DEVELOPMENT SHALL BE MADE ONLY THROUGH THE FACILITIES AUTHORIZED BY THIS PERMIT. NO ROADWAY OR BUILDING CONSTRUCTION SHALL COMMENCE ON-SITE UNTIL COMPLETION OF THE PERMITTED DISCHARGE STRUCTURE AND DETENTION AREAS. WATER DISCHARGED FROM THE PROJECT SHALL BE THROUGH STRUCTURES HAVING A MECHANISM SUITABLE FOR REGULATING UPSTREAM WATER STAGES. STAGES MAY BE SUBJECT TO OPERATING SCHEDULES SATISFACTORY TO THE DISTRICT.
8. NO CONSTRUCTION AUTHORIZED HEREIN SHALL COMMENCE UNTIL A RESPONSIBLE ENTITY ACCEPTABLE TO THE DISTRICT HAS BEEN ESTABLISHED AND HAS AGREED TO OPERATE AND MAINTAIN THE SYSTEM. THE ENTITY MUST BE PROVIDED WITH SUFFICIENT OWNERSHIP SO THAT IT HAS CONTROL OVER ALL WATER MANAGEMENT FACILITIES AUTHORIZED HEREIN. UPON RECEIPT OF WRITTEN EVIDENCE OF THE SATISFACTION OF THIS CONDITION, THE DISTRICT WILL ISSUE AN AUTHORIZATION TO COMMENCE CONSTRUCTION.
9. THE PERMIT DOES NOT CONVEY TO THE PERMITTEE ANY PROPERTY RIGHT NOR ANY RIGHTS OR PRIVILEGES OTHER THAN THOSE SPECIFIED IN THE PERMIT AND CHAPTER 40E-4, FAC.
10. THE PERMITTEE SHALL HOLD AND SAVE THE DISTRICT HARMLESS FROM ANY AND ALL DAMAGES, CLAIMS, OR LIABILITIES WHICH MAY ARISE BY REASON OF THE CONSTRUCTION, OPERATION, MAINTENANCE OR USE OF ANY FACILITY AUTHORIZED BY THE PERMIT.
11. THIS PERMIT IS ISSUED BASED ON THE APPLICANT'S SUBMITTED INFORMATION WHICH REASONABLY DEMONSTRATES THAT ADVERSE OFF-SITE WATER RESOURCE RELATED IMPACTS WILL NOT BE CAUSED BY THE COMPLETED PERMIT ACTIVITY. IT IS ALSO THE RESPONSIBILITY OF THE PERMITTEE TO INSURE THAT ADVERSE OFF-SITE WATER RESOURCE RELATED IMPACTS DO NOT OCCUR DURING CONSTRUCTION.
12. PRIOR TO DEWATERING, PLANS SHALL BE SUBMITTED TO THE DISTRICT FOR APPROVAL. INFORMATION SHALL INCLUDE AS A MINIMUM: PUMP SIZES, LOCATIONS AND HOURS OF OPERATION FOR EACH PUMP. IF OFF-SITE DISCHARGE IS PROPOSED, OR OFF-SITE ADVERSE IMPACTS ARE EVIDENT, AN INDIVIDUAL WATER USE PERMIT MAY BE REQUIRED. THE PERMITTEE IS CAUTIONED THAT SEVERAL MONTHS MAY BE REQUIRED FOR CONSIDERATION OF THE WATER USE PERMIT APPLICATION.

SPECIAL CONDITIONS

- | | | | |
|---|---------------|-------|-------|
| 1. MINIMUM BUILDING FLOOR ELEVATION: | BASIN 1 (10): | 68.2' | NGVD. |
| | BASIN 2 (20): | 66.2' | NGVD. |
| | BASIN 3 (30): | 65.9' | NGVD. |
| | BASIN 4 (40): | 62.0' | NGVD. |
| | BASIN 5 (50): | 62.0' | NGVD. |
| | BASIN 6 (60): | 62.0' | NGVD. |
| 2. MINIMUM ROAD CROWN ELEVATION: | BASIN 1 (10): | 65.3' | NGVD. |
| | BASIN 2 (20): | 63.0' | NGVD. |
| | BASIN 3 (30): | 63.0' | NGVD. |
| | BASIN 4 (40): | 61.1' | NGVD. |
| | BASIN 5 (50): | 61.1' | NGVD. |
| | BASIN 6 (60): | 59.8' | NGVD. |

3. **DISCHARGE FACILITIES:**

DESCRIPTION:

POND 1: 330 LF OF 36" DIAMETER RCP WITH PIPE INVERT SET AT ELEVATION 62.0' NGVD. OUTFALL IS TO POND NO. 3 OF BASIN 30.

RECEIVING WATER: POND NO. 3

CONTROL ELEVATION: 62.0' NGVD

POND 2: 275 LF OF 36" DIAMETER RCP, WITH PIPE INVERT SET AT ELEVATION 60.5' NGVD. OUTFALL IS TO POND NO. 5 OF BASIN 50.

RECEIVING WATER: POND NO. 5

CONTROL ELEVATION: 60.5' NGVD

POND 3: 714 LF OF 48" DIAMETER RCP, WITH PIPE INVERT SET AT ELEVATION 59.0' NGVD. OUTFALL IS TO POND NO. 40 OF BASIN 40.

RECEIVING WATER: POND NO. 4

CONTROL ELEVATION: 59.0' NGVD

SPECIAL CONDITIONS (CONTINUED)

POND 4: 500 LF OF 42" DIAMETER RCP, WITH PIPE INVERT SET AT ELEVATION 58.0' NGVD. OUTFALL IS TO POND NO. 6 OF BASIN 60.

RECEIVING WATER: POND NO. 6

CONTROL ELEVATION: 58.0' NGVD

POND 5: 250 LF OF 42" DIAMETER RCP, WITH PIPE INVERT SET AT ELEVATION 59.0' NGVD. OUTFALL IS TO POND NO. 6 OF BASIN 60.

RECEIVING WATER: POND NO. 6

CONTROL ELEVATION: 59.0' NGVD

POND 6: 1 - 8.0' WIDE WEIR WITH WEIR CREST SET AT ELEVATION 58.5' NGVD,
2 - 11" DIAMETER CIRCULAR ORIFICES WITH INVERT ELEVATIONS SET AT
57.0' NGVD. OUTFALL IS TO EAST LAKE TOHOPEKALIGA.

RECEIVING WATER: EAST LAKE TOHOPEKALIGA

CONTROL ELEVATION: 57.0' NGVD

4. THE PERMITTEE SHALL BE RESPONSIBLE FOR THE CORRECTION OF ANY EROSION OR SHOALING PROBLEMS THAT RESULT FROM THE CONSTRUCTION OR OPERATION OF THE SURFACE WATER MANAGEMENT SYSTEM.
5. MEASURES SHALL BE TAKEN DURING CONSTRUCTION TO INSURE THAT SEDIMENTATION AND/OR TURBIDITY PROBLEMS ARE NOT CREATED IN THE RECEIVING WATER.
6. THE PERMITTEE SHALL BE RESPONSIBLE FOR THE CORRECTION OF ANY WATER QUALITY PROBLEMS THAT RESULT FROM THE CONSTRUCTION OR OPERATION OF THE SURFACE WATER MANAGEMENT SYSTEM.
7. THE DISTRICT RESERVES THE RIGHT TO REQUIRE THAT WATER QUALITY TREATMENT METHODS BE INCORPORATED INTO THE DRAINAGE SYSTEM IF SUCH MEASURES ARE SHOWN TO BE NECESSARY.
8. OPERATION OF THE SURFACE WATER MANAGEMENT SYSTEM SHALL BE THE RESPONSIBILITY OF AN THE STEIN/CLIFTON GROUP (GOLF COURSE OWNER).
9. PRIOR TO THE INITIATION OF ANY WITHDRAWAL OF WATER (IRRIGATION, DEWATERING, PUBLIC WATER SUPPLY, ETC.), IT WILL BE NECESSARY TO APPLY FOR A WATER USE PERMIT. THE PERMITTEE IS CAUTIONED THAT A MINIMUM OF 90 DAYS IS REQUIRED FOR CONSIDERATION OF THE WATER USE PERMIT APPLICATION. THE PERMITTEE IS CAUTIONED THAT THE ISSUANCE OF A SURFACE WATER MANAGEMENT PERMIT SHALL NOT BE CONSTRUED TO BE A GUARANTEE THAT WATER WILL BE AVAILABLE.

SPECIAL CONDITIONS (CONTINUED)

10. THE PERMITTEE IS RESPONSIBLE FOR COMPLYING WITH LOCAL COMPREHENSIVE PLAN, ZONING AND SUBDIVISION REQUIREMENTS. ISSUANCE OF THIS PERMIT DOES NOT REPRESENT THAT THE PERMITTED PROJECT IS COMPATIBLE WITH LOCAL LAND USE REQUIREMENTS. ANY CHANGE IN THE PERMITTED PROJECT IN ORDER TO COMPLY WITH LOCAL LAND USE REQUIREMENTS, WHICH IMPACTS THE SURFACE WATER MANAGEMENT SYSTEM DESIGN, WILL REQUIRE MODIFICATION OF THIS PERMIT.
11. THE DEVELOPMENT OF KISSIMMEE BAY WILL IMPACT SIX (6+) ACRES OF WETLANDS. TO OFFSET THIS WETLAND LOSS THE APPLICANT SHALL BE RESPONSIBLE TO CREATE 15.96 ACRES OF WETLANDS WITHIN THE WATER MANAGEMENT SYSTEM AS SHOWN IN EXHIBIT NO. 3.
12. THE FOLLOWING VEGETATION SHALL BE PLANTED IN THE MITIGATION AREAS SPACED 2 TO 3 FEET ON CENTERS: SOFT RUSH (Juncus effusus), PICKERELWEED (Pontederia lanceolata), ARROWHEAD (Sagittaria lancifolia), BLUE FLAG IRIS (Iris virginia), CANNA (Canna flaccida), AND BULL RUSH (Scripus vadius). THE WATER CONTROL ELEVATIONS SHALL BE MAINTAINED TO PROVIDE SEASONAL INUNDATION AND AN ADEQUATE HYDROLOGICAL REGIME FOR THE VEGETATION PLANTED IN THE MITIGATION AREA.
13. ANNUAL REPORTS SHALL BE SUBMITTED TO THE DISTRICT FOR THE THREE (3) YEAR MONITORING AND MAINTENANCE PROGRAM SHOWN IN APPENDIX A. THE REPORTS SHALL BE BASED ON QUARTERLY INSPECTIONS WITH SEMI-ANNUAL PHOTOGRAPHS TAKEN FROM THE ESTABLISHED PHOTOPOINTS. ASSESSMENT SHALL BE MADE OF THE CONDITION OF THE PLANTED VEGETATION AND OF THE NATURAL RECRUITED VEGETATION WITH COMMENTS OF WILDLIFE UTILIZATION OF THE MITIGATION AREA.
14. THE REMOVAL OF CATTAILS, PRIMROSE, AND WATER HYACINTH SHALL BE REQUIRED TO MAINTAIN A COVERAGE OF LESS THAN 10% AT ALL TIMES. THE OBSERVATIONS AND REMOVAL OF THESE NUISANCE SPECIES SHALL BE INCLUDED IN THE ANNUAL REPORTS.
15. THE CONSTRUCTION OF REAR LOT SWALES ADJACENT TO EAST LAKE TOHOPEKALIGA SHALL REQUIRE APPROVAL FROM THE FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION AND THE FLORIDA DEPARTMENT OF NATURAL RESOURCES.
16. THE PERMITTEE SHALL BE RESPONSIBLE FOR THE SUCCESSFUL COMPLETION OF THE MITIGATION PLAN, INCLUDING THE MONITORING AND MAINTENANCE OF THE MITIGATION AREAS FOR THE DURATION OF THE PLAN. THE MITIGATION AREA SHALL NOT BE CONSIDERED A CONSERVATION AREA UNTIL THE MITIGATION PLAN WAS ACCOMPLISHED AS PERMITTED AND DISTRICT STAFF HAS CONCURRED.
17. THE CONSERVATION AREAS AND BUFFER ZONES MAY IN NO WAY BE ALTERED FROM THEIR NATURAL STATE. ACTIVITIES PROHIBITED WITHIN THE CONSERVATION AREAS INCLUDE, BUT ARE NOT LIMITED TO: CONSTRUCTION OR PLACING OF BUILDINGS ON OR ABOVE THE GROUND; DUMPING OR PLACING SOIL OR OTHER SUBSTANCES SUCH AS TRASH; REMOVAL OR DESTRUCTION OF TREES, SHRUBS, OR OTHER VEGETATION - WITH THE EXCEPTION OF EXOTIC VEGETATION REMOVAL; EXCAVATION, DREDGING, OR REMOVAL OF SOIL MATERIAL; DIKING OR FENCING; AND ANY OTHER ACTIVITIES DETRIMENTAL TO DRAINAGE, FLOOD CONTROL, WATER CONSERVATION, EROSION CONTROL, OR FISH AND WILDLIFE HABITAT CONSERVATION OR PRESERVATION.

SPECIAL CONDITIONS (CONTINUED)

18. THE PERMITTEE SHALL SUBMIT A COPY OF ALL PRELIMINARY PLATS FOR DISTRICT STAFF REVIEW, TO DETERMINE IF SUFFICIENT DRAINAGE AND MAINTENANCE EASEMENTS HAVE BEEN PROVIDED. A COPY OF ALL RECORDED PLATS SHALL BE SUBMITTED WHEN AVAILABLE, TO BE INCLUDED INTO THE PERMIT FILE FOR DOCUMENTATION OF ADEQUATE AND PROPER EASEMENTS FOR THE DRAINAGE FACILITIES AND DEDICATION OF WETLANDS FOR CONSERVATION.
19. UPON IMPLEMENTATION OF WASTEWATER REUSE: WATER QUALITY SAMPLES SHALL BE TAKEN AT THE DISCHARGE LOCATION OF THE WATER MANAGEMENT SYSTEM DURING PERIODS OF DISCHARGE AS SHOWN ON EXHIBIT NO. 3. A LABORATORY CERTIFIED BY THE STATE OF FLORIDA SHALL BE RESPONSIBLE FOR ALL WATER QUALITY SAMPLING AND ANALYSES. REPORTS INCLUDING PERMIT NUMBERS SHALL BE SUBMITTED TO THIS DISTRICT ON A SEMI-ANNUAL BASIS. INITIAL SAMPLING RESULTS SHALL BE REPORTED TO THE DISTRICT NO LATER THAN SIX MONTHS FOLLOWING THE ISSUANCE OF THIS PERMIT. THE DISTRICT WILL EVALUATE MONITORING REQUIREMENTS FOLLOWING TWO YEARS OF DATA COLLECTION AND MAKE A DETERMINATION AS TO WHETHER THE DISCHARGE DEGRADES RECEIVING WATER AND CONFORMS TO STATE WATER QUALITY STANDARDS AS DEFINED IN CHAPTER 17-3 F.A.C. IF THE WATER QUALITY ANALYSES SHOW LITTLE OR NO CHANGE AND IT IS DETERMINED THAT THERE IS MINIMAL CONTAMINANT POTENTIAL, THE MONITORING PROGRAM MAY BE MODIFIED TO REDUCE THE SAMPLING SCHEDULE AND/OR PARAMETERS. IF WATER QUALITY PROBLEMS DEVELOP, THE DISTRICT RESERVES THE RIGHT TO REQUIRE MORE FREQUENT SAMPLING AND MORE THOROUGH ANALYSES IN ORDER TO PROVIDE ASSURANCE THAT THE DISCHARGING WILL NOT CAUSE ADDITIONAL OFF-SITE WATER QUALITY IMPACTS.

MONITORING TYPE
AND SCHEDULE

PARAMETERS

A. GENERAL
(QUARTERLY)

pH, NITRATE WITH NITRITE AS N, TOTAL NITROGEN AS N, AMMONIUM AS N, ORTHO-PHOSPHATE AS P, TOTAL PHOSPHORUS AS P, AND TOTAL SUSPENDED SOLIDS.

20. PRIOR TO THE CONSTRUCTION OF ANY WASTEWATER TREATMENT PONDS; PAVING, GRADING, AND DRAINAGE PLANS (ALONG WITH CALCULATIONS SHOWING THAT THE PONDS WILL RETAIN THE 10 YEAR/3 DAY STORM EVENT PLUS A 3 DAY MINIMUM STORAGE VOLUME CAPACITY OF EFFLUENT - PRIOR TO DISCHARGE INTO THE MASTER SURFACE WATER MANAGEMENT SYSTEM) SHALL BE SUBMITTED TO THE DISTRICT FOR REVIEW AND APPROVAL.

A P P E N D I X "A"

MITIGATION PLAN FOR KISSIMMEE BAY

OSCEOLA COUNTY

Copy

MICROFILMED

2.0 MITIGATION PLAN

Proposed mitigation includes the creation of 1.52 acres of littoral zones in the internal lake system, 12.13 acres of created marsh associated with the lake system and 2.21 acres of enhanced area at the outfall from the site. The bayhead in the northwestern corner of the site will be preserved intact. Total jurisdictional wetlands of South Florida Water Management District total 7.36 acres.

Created lakes within the golf course will be designed with shallow slopes where littoral zones are planned and planting will occur down to a two foot depth. In areas where a 4:1 slope is planned this will create a planted littoral zone 8 feet wide for every linear foot of shoreline.

Planting of this littoral shelf will include the following native wetland species:

1. **Soft Rush (*Juncus effusus*)** - to be planted in staggered rows at the edge of the water and up to one foot above normal water level, spaced 2 to 3 feet on center. This species spreads quickly and provides excellent erosion control and surface water filtration. This species will constitute approximately 10% of plants installed.
2. **Pickerelweed (*Pontederia lanceolata*)** - to be planted on 2 to 3 foot centers throughout most of the littoral areas, down to a depth of 2 feet. This plant is hardy, establishes quickly and is tolerant of extreme fluctuations of water levels and hydroperiods. It is also an excellent wildlife attractant and is attractive when blooming. This species will constitute approximately 60% of total plants installed.
3. **Arrowhead (*Sagittaria lancifolia*)** - to be planted at random throughout, providing diversity and constituting approximately 10% of total plants installed.
4. **Blue Flag Iris (*Iris virginica*)** - to be planted in clumps in areas most exposed to the golf course. This plant provides attractive blooms in spring and will add to the landscape. Total numbers will comprise approximately 5% of plants installed.
5. **Canna (*Canna flaccida*)** - to be planted in clumps similar and adjacent to the iris. Provides colorful yellow flowers in spring and is an attractive addition to the overall landscape. This species will comprise approximately 5% of planted species.

6. **Bulrush** (Scirpus validus) - to be planted in clumps in deeper water (2-3 feet) to add diversity to the landscape and as a wildlife attractant. This species will comprise approximately 5% of total plants.
7. Various native wetland species will be scattered at random throughout the plantings to add diversity to the marshes. These will include: Bacopa sp., Beak Rush (Rhynchospora sp.), Maidencane (Panicum hemitomon), Lizard's Tail (Saururus cernuus), St. John's Wart (Hypericum sp.) and Red Root (Lachnanthes caroliniana).

Extensive marsh systems will also be planted with the same species listed above in the same approximate percentages. In addition, small clumps of Bald Cypress (Taxodium distichum), Blackgum (Nyssa sylvatica) and Buttonbush (Cephalanthus occidentalis) will be added. These marsh areas will be designed with an average water depth of 6" to 1 foot.

Because these created wetland systems are close to East Lake Tehopekaliga, it is expected that other wetland species such as Sawgrass and Willow will also eventually become established.

Copy

3.0 Maintenance Plan

Periodic checks will be made in the planted littoral and marsh areas to remove any species that are noxious and dominant or might impede establishment of planted or recruited desirable species. Noxious species include cattail primrose willow, Brazilian pepper, water hyacinth and alligator weed. Attention will also be given to other problems that may also affect establishment of the planted species such as erosion or herbicide run-off.

Copy

4.0 MONITORING PLAN

Monitoring programs on mitigation areas will be conducted on a regular basis as required and pertinent reports submitted. The following methodology is proposed for completion of each monitoring program:

1. *Visual inspections over each area to estimate overall percentage of cover by planted and recruited wetland species.*
2. *A series of eleven meter-wide belt transects will be established and permanently marked. These will be monitored at each period with wetland species counted and tabulated by species. A baseline count will be conducted at completion of planting and subsequent counts will indicate survival percentages and increased coverage by planted and recruited species.*
3. *Panoramic photographs will be taken at each monitoring period using a series of fixed and permanent photopoints throughout the littoral and marsh areas. An attached plan view indicates suggested locations of transects and photopoints.*
4. *Notes will be made on wildlife utilization of each area, severe erosion, fire, flooding, drought or any other unusual situation which may be relevant to the viability of the created and enhanced wetlands.*

All the data from the above suggested items will be summarized in reports and will be used to gauge viability and success of the mitigation.

ATTACHMENTS

Copy

LOCATION MAP

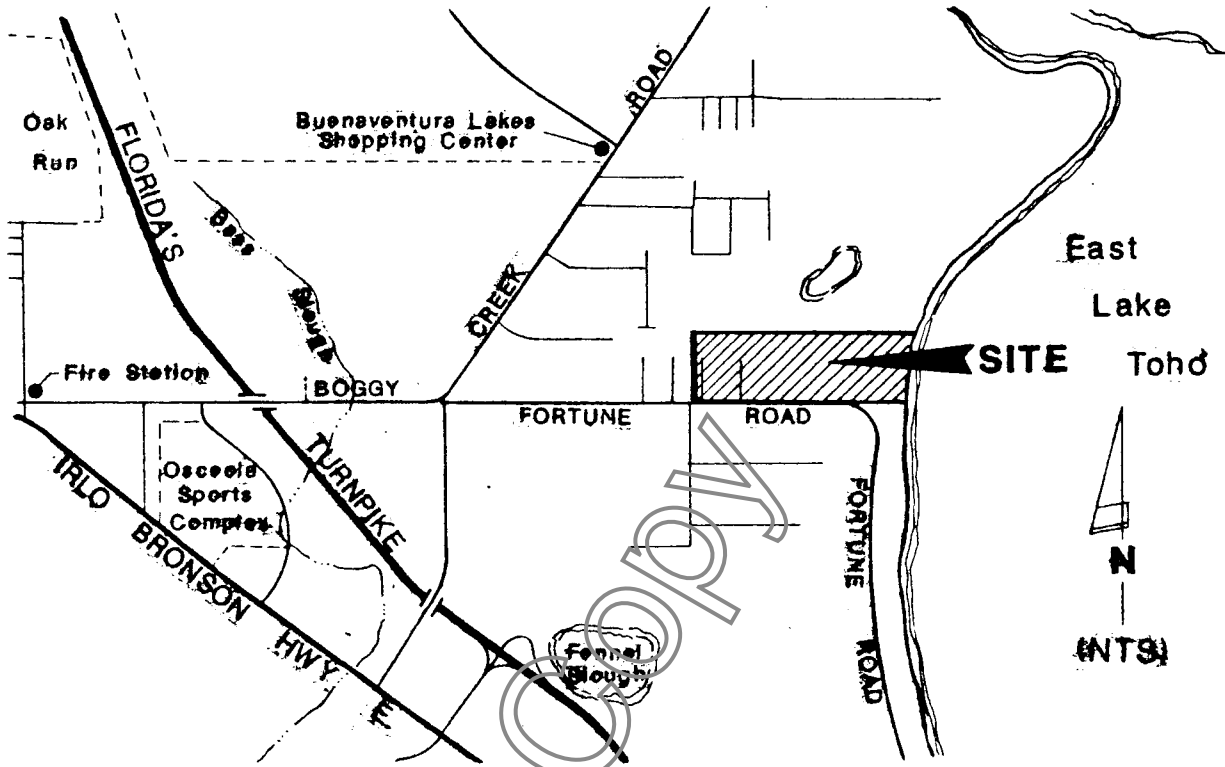
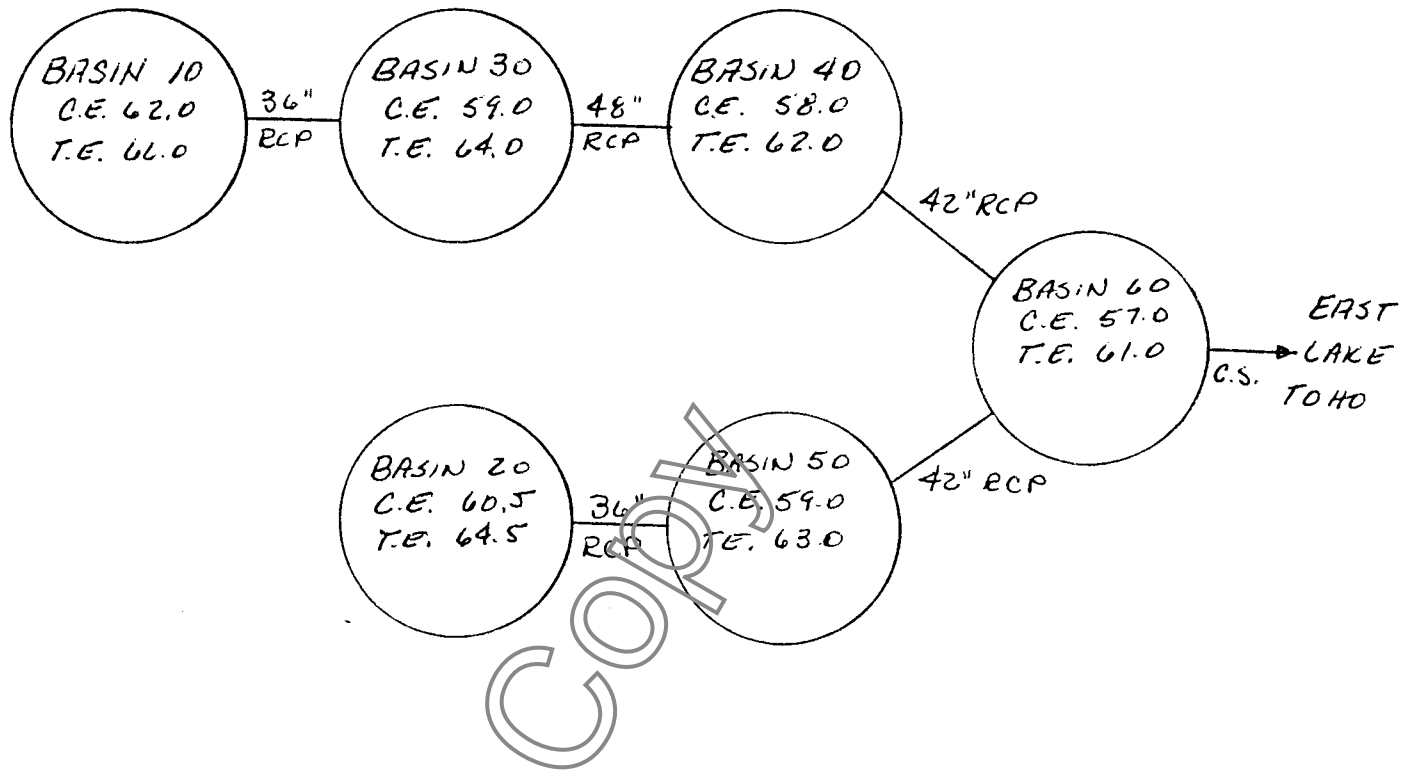


Exhibit 1

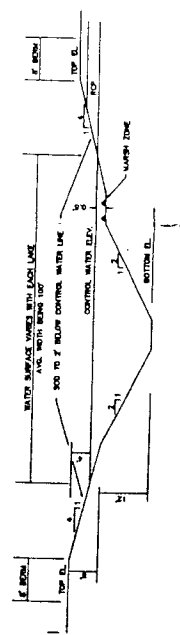
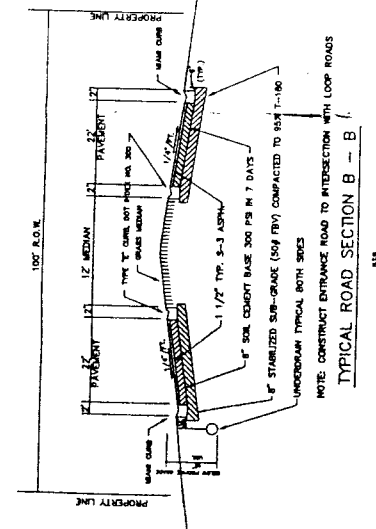
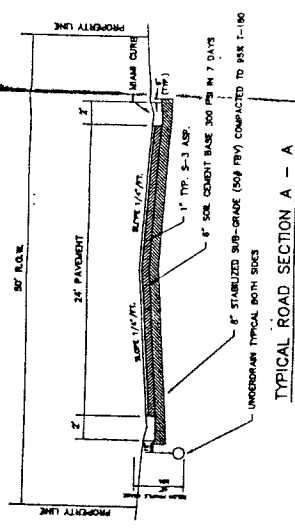
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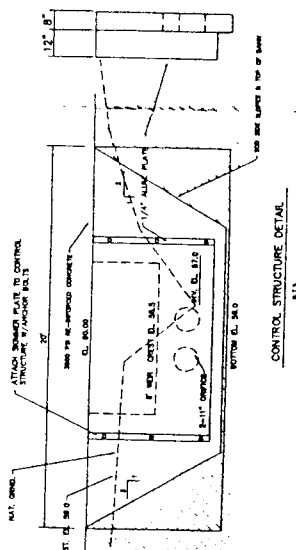
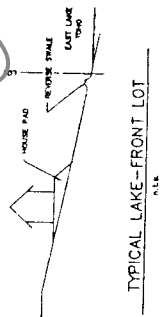
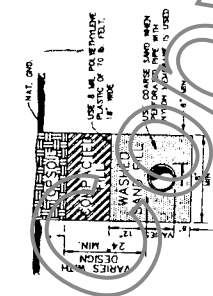
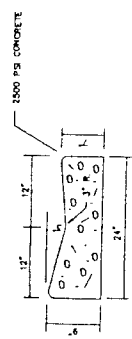
NODAL DIAGRAM
 KISSIMMEE BAS

Exhibit 1A

MICROFILMEL



ASIN	E.F. EL.	UTITORAL ZONE	SURFACE AREA	TOP EL.	BOTTOM EL.	CONTROL EL.	MARSH ZONE	CONTROL STRUCTURE
F10	86.20	.08AC	1.39AC	86.0	50.0	58AC	36" RCP	36" RCP
F20	86.23	.22AC	2.72AC	84.5	48.5	1.01AC	36" RCP	36" RCP
F30	85.85	.18AC	0.85AC	84.0	58.0	.00AC	48" RCP	48" RCP
F40	82.0	.14AC	0.90AC	82	48	2.44AC	42" RCP	42" RCP
F50	82.0	.27AC	0.89AC	83	58	2.75AC	42" RCP	42" RCP
F60	82.0	.83AC	10.75AC	59	45	7.74AC	CONTROL STRUCTURE	CONTROL STRUCTURE



GENERAL

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE SPECIFICATIONS FOR CONSTRUCTION OF PUBLIC WORKS, AS APPLICABLE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
3. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AT ALL TIMES.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES AND STRUCTURES.
5. THE CONTRACTOR SHALL MAINTAIN ADEQUATE RECORDS OF ALL WORK DONE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE ENVIRONMENT.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PUBLIC SAFETY.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE QUALITY OF THE WORK.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE QUALITY OF THE MATERIALS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE QUALITY OF THE LABOR.

PAVING & FINISHES

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10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE QUALITY OF THE LABOR.

WATER DISTRIBUTION

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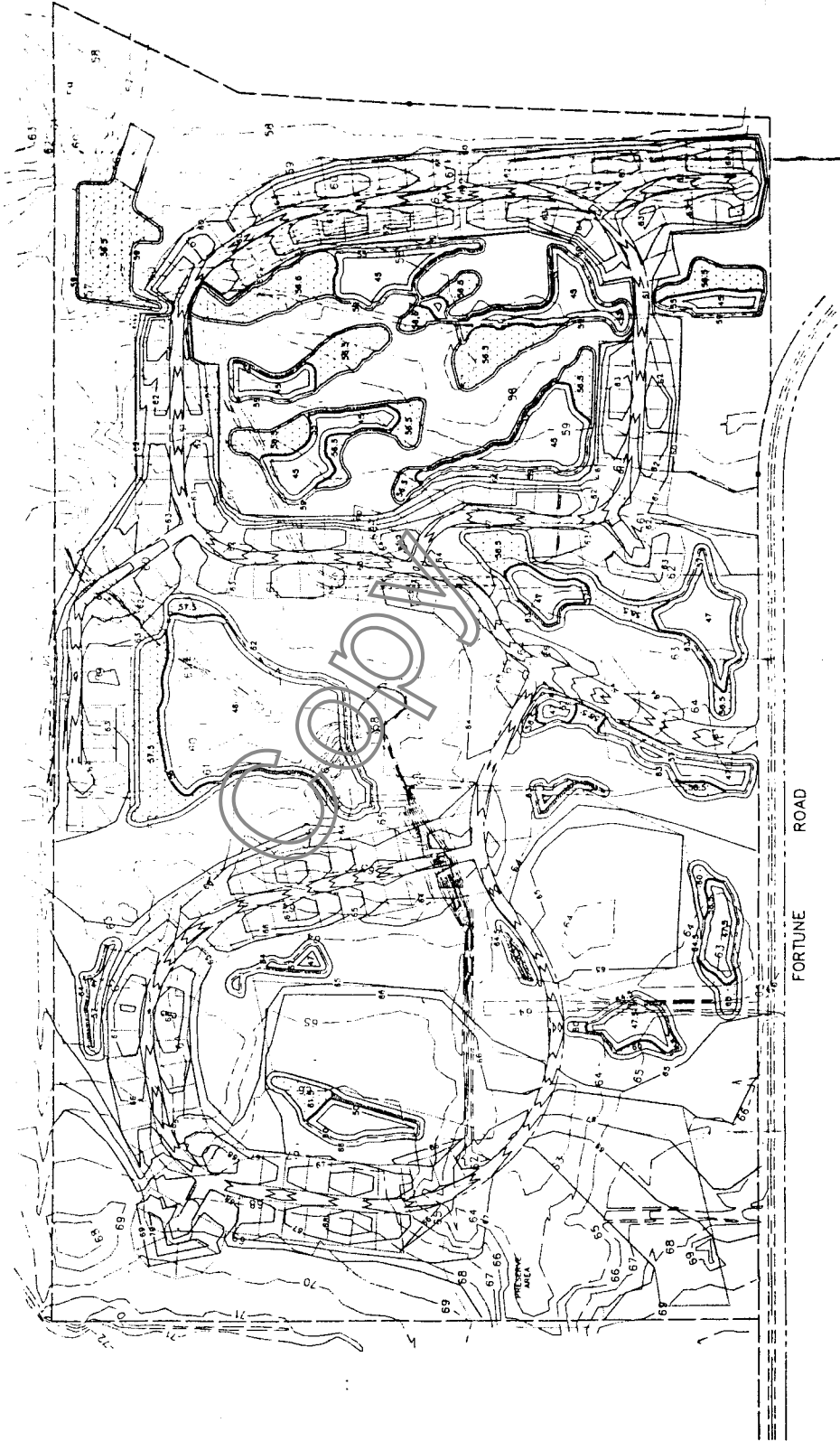
SEWERAGE & WASTE SYSTEMS

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ARRINGTON-HOBBS
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 813 BRYAN STREET KISSIMMEE, FLORIDA 32741
 KISSIMMEE (407) 848-2239 ORLANDO (407) 338-4018

TYPICAL SECTIONS, LEGENDS, AND NOTES

RTS-SIMMEE BAY



MASS GRADING PLAN

KISSIMMEE BAY

ARRINGTON-HOBBS

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EXHIBIT 2A

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Osceola

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Kissimmee

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EXHIBIT 6

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