

4-069-0296A



Project Correspondence

1724

MEMORANDUM

MA
RECEIVED
APR 04 1994

DATE: March 31, 1994
TO: Gloria Roberson, Director
Division of Permit Data Services
THROUGH: Patrick M. Frost, Orlando Field Office Director
Department of Resource Management
FROM: Karen B. Davis, Executive Staff Assistant
Department of Resource Management
SUBJECT: May 1994 Regulatory Agenda

PERMIT DATA SERVICES
Palatka

APPLICATION # ***DATE PROJECT NAME REVIEWERS

40C-4 Approvals:

4-009-0435A	May	Cocoa Ranch - A. Duda & Sons	McDaniel/Cope/Fall
4-069-0158AM5*	June	Pennbrooke Phase 1G	M.Cook/Eunice
4-069-0158AM6	May	Pennbrooke Fairways	M.Cook/Eunice
4-069-0252AM*	May	Mission Inn Golf Course	Aboodi/Eunice
4-069-0296A	May	Cross Tie Ranch-Ph.II	M.Cook/Eunice
4-095-0050AGM2	June	Orange Co. Sheriff's Hanger @Orl. Exec. Airport	Brabham/Johnson
4-095-0363A*	June	Pitman & Sons Industrial Park	Brabham/Johnson
4-095-0462AC	June	Pitman & Sons Industrial Park	Brabham/Johnson
4-105-0018AM2	May	Fair Lake Estate Rec. Area	Aboodi/Eunice
4-117-0307AGM*	June	Dodd Road	Pakzadian/Hart
4-117-0374AG*	May	County Road 427/Ph. IV	Pakzadian/Milch
4-127-0202AG	May	Old Mission Road	M.Cook/Johnson
4-127-0252A*/**	June	Saxon Blvd. Center	M.Cook/Hardman
4-127-0258A*	June	Sawgrass Point P.U.D.	M.Cook/Hart

40C-4 Substantive Denial:

4-069-003AME2	N/A	Lake Sand Plant I	C.Dewey/Eunice
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40C-42 Approvals:

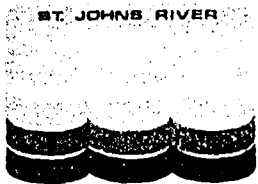
42-117-0948ANI	May	Rol Manufacturing of America, Inc.	Grady/Hardman
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40C-42, 1.605 Denial:

42-095-1440ANI	May	Coordinated Care	Aboodi/Johnson
42-095-1443ANI	May	Oakland Shores Subdivision	Aboodi/Milch
42-095-1453ANI	May	Elvis Purvis Real Estate	Aboodi/Milch

Wetland Resource Management Approvals:

12-069-0026AM*	May	Mission Inn Golf Course	Eunice
12-069-0043AM2*	May	Pennbrooke Phase 1G	Eunice
12-095-0106A*	June	Pitman & Sons Industrial Park	Johnson
12-117-0060AGM*	June	Dodd Road	Hart
12-117-0092AG*	May	County Road 427/Ph.IV	Pakzadian/Milch



**WATER
MANAGEMENT
DISTRICT**

Henry Dean, Executive Director
John R. Wehle, Assistant Executive Director

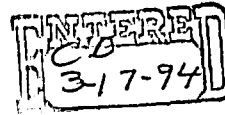
POST OFFICE BOX 1429 PALATKA, FLORIDA 32178-1429
TELEPHONE 904/329-4500 SUNCOM 904/860-4500
FAX (EXECUTIVE/LEGAL) 329-4125 (PERMITTING) 329-4315 (ADMINISTRATION/FINANCE) 329-4508

FIELD STATIONS

618 E. South Street Orlando, Florida 32801 407/897-4300	7775 Baymeadows Way Suite 102 Jacksonville, Florida 32256 904/730-6270	PERMITTING: 305 East Drive Melbourne, Florida 32904 407/984-4940	OPERATIONS: 2133 N. Wickham Road Melbourne, Florida 32935-8109 407/254-1762
---------------------------------------------------------------	---------------------------------------------------------------------------------	---------------------------------------------------------------------------	--------------------------------------------------------------------------------------

March 16, 1994

Mr. Jim Modica, President
Modica and Associates
P.O. Box 1090
Minneola FL 34755



Re: Cross-Tie Phase II, Permit Application No. 4-069-0296A

Dear Mr. Modica:

This letter is a result of our meeting (February 28, 1994) and site inspection (March 9, 1994) concerning the project referenced above. As indicated, District staff's inspections of Phase II revealed that construction has started on the project prior to the issuance of a permit. The unauthorized construction, which the District presently is reviewing a permit application, included land clearing, clearing and grading of roads and the installation of drainage structures such as culverts and connector boxes.

The unauthorized construction is a non-compliance of section 40C-4.041, F.A.C., which states: "unless expressly exempt by statute or rule, a surface water management permit must be obtained from the District prior to construction." In addition, the unauthorized work is non-compliance with condition number 17 of permit number 40-069-0119 which states that the proposed surface water management system must be constructed as per plans received by the District on December 9, 1992.

Since no permits have been issued for Phase II, it is recommended that you advise your client to cease all unauthorized construction activity until all the proper District permits have been obtained. It is my understanding that you have advised your client that all unauthorized work has ceased.

During the meeting, I indicated that the District will be seeking a penalty for the non-compliance of the Districts rules in accordance with section 373.129, F.S. and reimbursement of staff's investigative costs. The District will prepare a Consent Order which will include a settlement penalty. As you are aware, in determining a penalty, the District reviews many factors such as extent of deviation from the rule, harm to the water resource, and past history of non-compliance. In determining the penalty amount, the staff will recognize that you contacted the District once you become aware of the unauthorized work

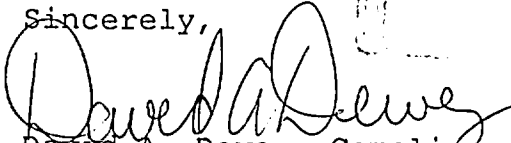
Patricia T. Harden, CHAIR SANFORD	Lenore N. McCullagh, VICE CHAIR ORANGE PARK	Jesse J. Parrish, III, TREASURER TITUSVILLE	William Segal, SECRETARY MAITLAND
Reid Hughes DAYTONA BEACH	Dan Roach FERNANDINA BEACH	Denise M. Prescod JACKSONVILLE	James H. Williams OCALA
		Joe E. Hill LEESBURG	

Mr. Jim Modica, President
March 15, 11994
Page 2

and had all construction stopped. Once the Consent Order has been prepared, it will be sent to your client for signature. Upon his signature, it is to be returned to the District and it will be acted on by the District's Governing Board.


Please contact me at (407) 897-4328, if you have any questions.

Sincerely,



David A. Dewey, Compliance Manager
Department of Resource Management

DAD:rc

cc: Pat Frost 
Ken Torman
David Eunice
PDS/VP
Orlando Permit File

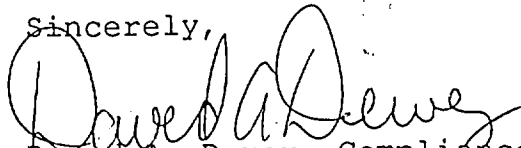
Mr. Herb Mayer
518 Pleasant Street
North Hampton MA 01060

Mr. Jim Modica, President
March 15, 11994
Page 2

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
Please contact me at (407) 897-4328, if you have any questions.

Sincerely,

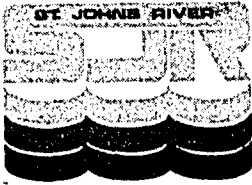


David A. Dewey, Compliance Manager
Department of Resource Management

DAD:rc

cc: Pat Frost 
Ken Torman
David Eunice
PDS/VP
Orlando Permit File

Mr. Herb Mayer
518 Pleasant Street
North Hampton MA 01060



**WATER
MANAGEMENT
DISTRICT**

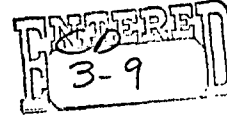
March 4, 1994

Henry Dean, Executive Director
John R. Wehle, Assistant Executive Director

POST OFFICE BOX 1429 PALATKA, FLORIDA 32178-1429
TELEPHONE 904/329-4500 SUNCOM 904/860-4500
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Mr. Jim Modica, President
Modica and Associates
P.O. Box 1090
Minneola FL 34755



Re: Borrow Pit Located on Property Owned by Mr. Herb Mayer; Related
Permit Number 4-069-0296

Dear Mr. Modica:

The District staff have reviewed the contents of your letter dated March 1, 1994, concerning the property referenced above. You have indicated the following:

1. A borrow pit is being excavated by Mr. Mayer to obtain clay material to be used in conjunction with a horse stable. The horse stable has been permitted by the District and is part of Phase I of the project Cross-Tie.
2. The borrow pit will not exceed 5 acres in size and will not be 8 feet or greater in depth.
3. This borrow pit is located in an area that is not planned for development now or in the future. There are no plans filed with the local government for work in this area that would require a permit from the District. In addition, the pit is not part of the Cross-Tie project.

Based upon this information, the District will not require a permit for excavation of the borrow pit. However, if the District discovers that this pit had been planned to be part of a project that requires permits from the District, we will pursue enforcement action in accordance with chapter 373.129, F.S.

If you have any questions, please contact me at (407) 897-4328.

Sincerely,

David A. Dewey, Compliance Manager
Department of Resource Management

DAD:rc

cc: Pat Frost, ^{PFD}Orlando Permit File, PDS/CI

Patricia T. Harden, CHAIR
SANFORD
Reid Hughes
DAYTONA BEACH

Lenore N. McCullagh, VICE CHAIR
ORANGE PARK
Dan Roach
FERNANDINA BEACH

Jesse J. Parrish, III, TREASURER
TITUSVILLE
Denise M. Prescod
JACKSONVILLE
Joe E. Hill
LEESBURG

William Segal, SECRETARY
MAITLAND
James H. Williams
OCALA

RESOURCE MANAGEMENT ROUTING SHEET

File number: 4-069-0296A

Date Received: 3/ 3/94

Date: 3/ 4/94 Correspondence Routed In: ORLANDO

Mail type: GEN. CORRESPONDENCE

Performed By: SA

Application Received: 1/24/94

Permit Issued: / /

Mapped number: _____ F.O.R. number: _____

Receipt number: _____

Related number: _____

Proj-name: CROSS-TIE RANCH PHASE II

Routed To:

Name	Job Title	Office
<u>MARGIE COOK</u>	<u>ENGINEER</u>	<u>ORLANDO</u>
<u>DAVID EUNICE</u>	<u>ENGINEER TECHNICIAN</u>	<u>ORLANDO</u>
<i>Dave Dewey</i>	<i>Compliance Mgr.</i>	<i>Orlando</i>

General Counsel:

Comments: COPY TO MARGIE C., DAVE E. AND DAVE D.

Copied and Routed by: A.H. on 3/4/94

Modica and Associates
Environmental Planning, Design & Permitting

March 1, 1994

Dave Dewey
 St. Johns River Water
 Management District
 618 East South Street
 Orlando, Florida 32801

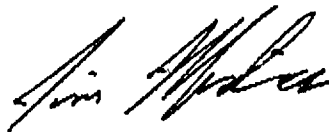
RE: Cross-Tie

Dear Dave:

This letter was drafted in response to our conversation last week about the Cross-Tie development and the owners request to continue work within a borrow pit. The purpose for the construction of the borrow pit is to obtain clay material for the floor of a large horse stable. The stable has been permitted by the district and is part of Phase I. The borrow pit is located in an area that is not planned for development. The pit will not exceed 5 acres in size. This is per my conversation with Herb Mayer, the property owner. Mr. Mayer said that there are no plans for doing any work in the area of the borrow pit other than excavation to obtain clay material to be used in conjunction with the horse stable.

Please let me know if the owner can continue to remove material from the pit to complete Phase I.

Sincerely,



Jim Modica

cc: Herb Mayer

Associates:

Jim Modica, B.S., President
 John Lesman, M.S., Senior Biologist
 John Miklos, B.S., Biologist/Limnologist
 Walter Taylor, Ph.D., Field Biologist
 Jim McCann, B.S., Horticulturalist
 Rodney Hudson, B.S., Limnologist
 David Hanf, Biologist

RECEIVED

MAR - 3 1994

4-069-0296 A

RECORDS
 ORLANDO



RESOURCE MANAGEMENT ROUTING SHEET

File number: 4-069-0296A

Date Received: 3/ 3/94

Date: 3/ 3/94

Correspondence Routed In: ORLANDO

Mail type: RAI RESPONSE

Performed By: SA

P

Application Received: 1/24/94

Permit Issued: / /

Mapped number: _____ F.O.R. number: _____

Receipt number: _____

Related number: _____

Proj-name: CROSS-TIE RANCH PHASE II

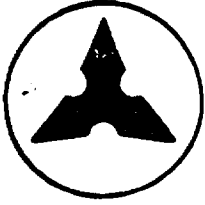
Routed To:

Name	Job Title	Office
<u>MARGIE COOK</u>	<u>ENGINEER</u>	<u>ORLANDO</u>
<u>DAVID EUNICE</u>	<u>ENGINEER TECHNICIAN</u>	<u>ORLANDO</u>
<u>LORI DOWDY</u>	<u>DATA MAN. SUPERVISOR</u>	<u>PALATKA</u>

General Counsel:

Comments: 4 SETS PLANS (3 PGS), CALCS, GOVERNMENT NOTIFICATIONS; 1 EA TO MARGIE C. AND DAVE E.

Copied and Routed by: CD on 3/3/94



FARNER BARLEY

AND ASSOCIATES, INC.

ENGINEERS ▲ SURVEYORS ▲ PLANNERS

February 25, 1994

Marjorie Cook, P.E.
SJRWMD
618 East South Street
Orlando, Florida 32801

RECEIVED

MAR - 3 1994
4-069-6296A
RECORDS
ORLANDO

RE: Cross-Tie Ranch Phase II, Application No. 4-069-0296A
Lake County, Florida (FBA #921088.001)

Dear Ms. Cook:

We are in receipt of your letter of Feb. 18, 1994 requesting additional information for the subject MSSW application. Revised plans, calculations, and additional plan sheets are attached in quadruplicate. The following comments and responses correspond to your letter format:

1. The completed "Local Government Form" is included.
2. The retention area SMA 2 was in fact reconfigured as part of Phase I and attached to this submittal is an "as-built" survey. The existing geometry was used in the current calculations and exceeds the previous volumes.
3. The temporary cul-de-sacs do extend beyond the Phase II plat limits because of the physical encroachment into lot areas which would be necessary otherwise. This property is indeed part of the total PUD acreage (690 ac.) ownership of the applicant. The configuration of the total property is shown on the master plan, enclosed.
4. The cul-de-sac's will provide treatment within the perimeter swales which are consistent with the general roadway section detailed in the construction plans. Calculations are provided in the revised data submitted herewith for runoff resulting from a 1.5" rainfall event. However, I don't agree that OFW criteria should apply as 40C-42.026 refers to "system *direct discharges* to Class I, Class II, or Outstanding Florida Waters" which doesn't occur from this project. Nonetheless there is more than adequate storage volume to meet any of the criteria.

Ms. Marjorie Cook
Page Two
February 25, 1994

5. The minimum finished floor elevations as dictated by the 100-year peak stage in the respective retention areas is annotated on the Revised Sheet 2.
6. The swale check dams which will be used on the property line swale sections are detailed on Revised Sheet 9 which calls for seed and mulch cover.

We trust that this application is complete for review and recommendation for Board action. Please don't hesitate to call if you have any further questions.

Sincerely,

FARNER, BARLEY & ASSOCIATES, INC.



Thomas J. McCann, P.E.

TJM/

Enclosures

"95"

File

Modica and Associates

Environmental Planning, Design & Permitting

4-069-0296A

March 1, 1994

Associates:

- Jim Modica, B.S., President
- John Lesman, M.S., Senior Biologist
- John Miklos, B.S., Biologist/Limnologist
- Walter Taylor, Ph.D., Field Biologist
- Jim McCann, B.S., Horticulturalist
- Rodney Hudson, B.S., Limnologist
- David Hanf, Biologist

Dave Dewey
 St. Johns River Water
 Management District
 618 East South Street
 Orlando, Florida 32801

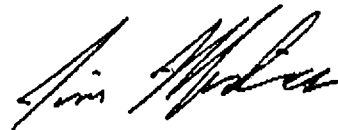
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Sincerely,



Jim Modica

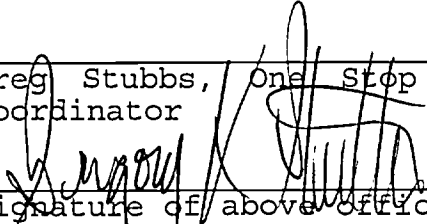
cc: Herb Mayer



LOCAL GOVERNMENT NOTIFICATION

LAKE COUNTY PLANNING & DEVELOPMENT hereby provides notification that the development proposal, submitted to the St. Johns River Water Management District, known as CROSS-TIE RANCH PHASE II being proposed by CROSS-TIE RANCH LIMITED PARTNERSHIP which is located in Section 5 & 8, Township 19S, Range 28E, and which consists of 100 acres has been reviewed by the local government. After such review, all necessary final action has been taken by the governmental entity to determine, and such determination has been made, that the proposed activity is consistent with the local comprehensive plan and is in compliance with any land development regulation in effect in the area where the development will take place.

Greg Stubbs, One Stop Permitting
Coordinator

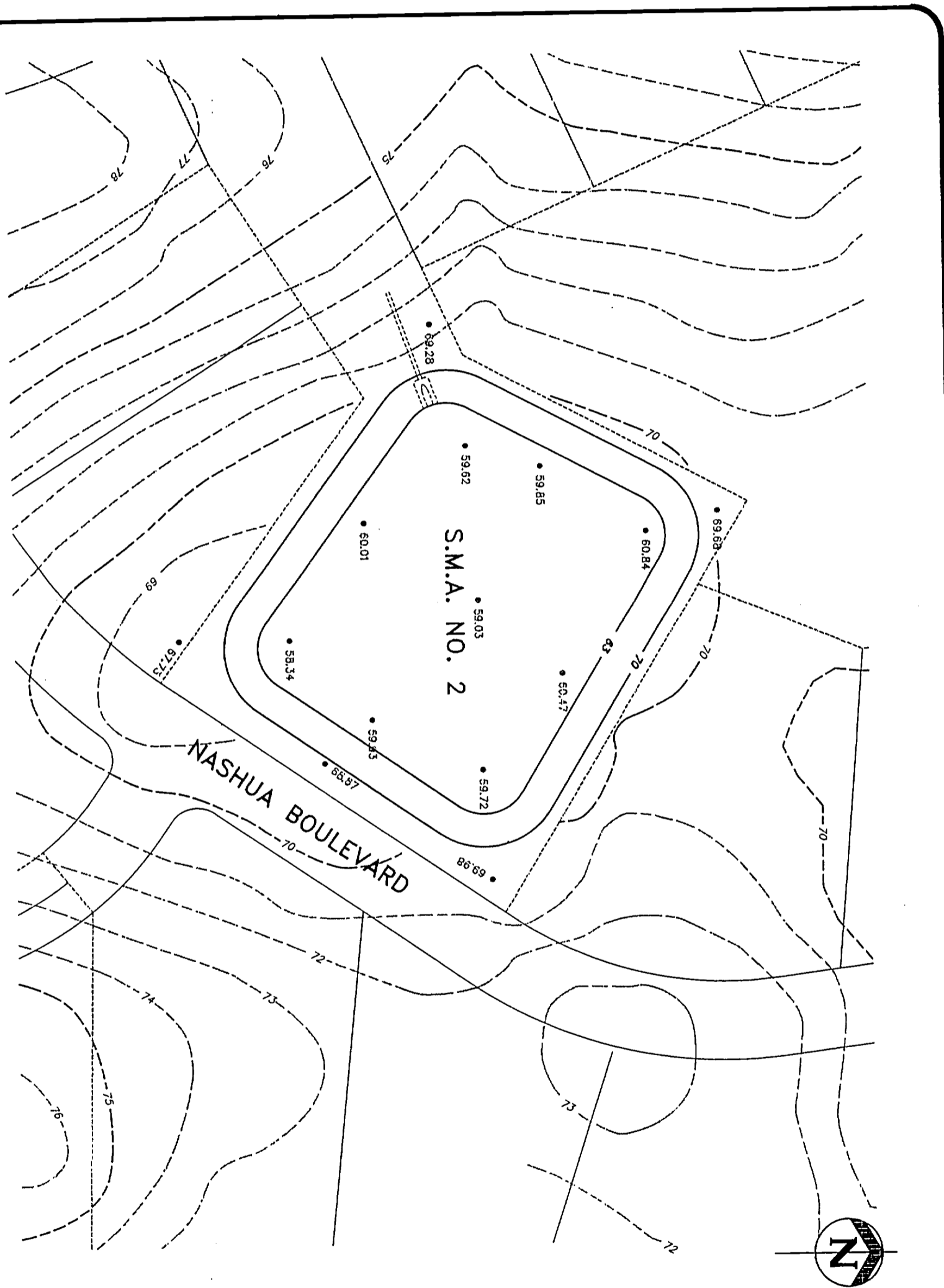


Signature of above officer or
Employee

2/28/94
Date

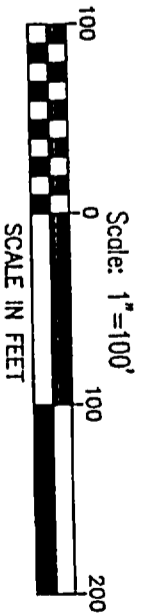
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4-069-0296A
RECORDS
ORLANDO

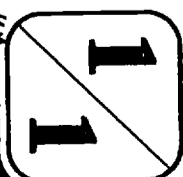


PROPOSED

MAR - 3 1994
 4-069-00 96 A
 RECORDS
 ORLANDO



to be removed



DRAWN: J.W.M.	5.
CHECKED:	4.
SCALE:	3.
DATE: FEB. 1994	2.
PROJECT NO: 9210BB.001	REVISION: 1.



**FARNER
 BARLEY**
 AND ASSOCIATES, INC.

350 North Sinclair Avenue • Tavares, Florida 32778 • (904) 343-8481

- ▲ ENGINEERS
- ▲ SURVEYORS
- ▲ PLANNERS

**AS-BUILT SURVEY OF S.M.A. NO. 2
 CROSS-TIE RANCH
 PHASE II**

SECTIONS 5 & 8, TWP. 19 S., RGE. 28 E.
 LAKE COUNTY, FLORIDA

STORMWATER MANAGEMENT CALCULATIONS

FOR

Cross-Tie Phase 2

Lake County, Florida

RECEIVED

MAR - 3 1994
4-069-02 96A
RECORDS
ORLANDO.

T/MC 2/25/94
Thomas McCann, P.E.
Farner, Barley & Assoc.
Tavares, Florida
January 1994 (rev. Feb94)

PROJECT DESCRIPTION

The proposed 100-acre project addition is to be developed for a low density subdivision of 40 single-family lots together with common recreation areas. There is to be no regrading of the lot areas or the central common area. The only significant earthwork which is necessary for infrastructure construction is that for grading of roadways. The direct stormwater runoff from the streets will be collected in roadside swales and conveyed to a retention area for percolation into the shallow groundwater table.

SYSTEM DESIGN & PERFORMANCE CRITERIA

The total runoff calculated for each respective basin will be routed into the retention basin without exfiltration loss in the conveyance swales. From that simple storage level it will be demonstrated shown that the facility will completely recover in less than 14 days. Additionally, for the purpose of setting minimum building levels, a 24-hour 100-year storm will be stored in the basin 1 and 2 retention areas.

The above approach is very conservative in that no percolation or exfiltration losses are considered to occur from the swale system or in the retention areas during the storm period. The particularly good site soils and groundwater conditions would, in fact, insure that little or no runoff would accumulate beyond impervious areas.

HYDROLOGIC DATA

Overall Assumptions:

- All "A" type soils with a CN=39 for grassed pervious areas.
- Retention area bottoms are considered as DCIA only after runoff occurs. Otherwise, there is no DCIA.
- Developed impervious areas will be figured as NDCIA and a composite CN will be calculated using 4,000 ft.² per lot for house and drive and 22 ft. wide pavement for roadways.

Postdevelopment Parameters:

Land use - Indirectly connected impervious areas - **CN95**
Pervious and grassed areas - **CN39**

Time of concentration, use $T_c = 30$ minutes as a minimum. (Note that this is not a significant parameter with total retention and routing periods in days.)

For runoff coefficients to compute 40C-42 water quality volumes, that is 1.5" rainfall, the FDOT Drainage Manual, Table 5-5 will be used:

Grassed areas - C = 0.20 & impervious areas - C = 0.95

Basin Calculations:

Basin B-1:

Area = **83.3 ac.** (inc. offsite from SR44)

26 lots X 4000 ft.² = 104,000 ft.² imp.

7650 ft. roadway X 22 ft. = 166,300 ft.²

Total imper. area = **6.25 ac.**

CN = 39(77.1) + 95(6.25) = **43.2** w/ 1.93 ac. ret. area = **2.3% DCIA**

Basin B-2:

Area = **73.7 ac.**

32 lots X 4000 ft.² = 128,000 ft.² imp.

5070 ft. roadway X 22 ft. = 111,600 ft.²

stable & parking = 54,000 ft.²

Total imper. area = **6.74 ac.**

CN = 39(68.2) + 95(6.7) = **44.7** w/ 1.35 ac. ret. area = **1.8% DCIA**

Basin B-0:

Area = **23.5 ac.**

10 lots X 4000 ft.² = 40,000 ft.² imp.

Total imper. area = **0.92 ac.**

CN = 39(22.6) + 95(.92) = **41.2** w/NO DCIA

Runoff Coef: 0.20(22.6) + 0.95(.92) = **0.23**

For runoff coefficients to compute 40C-42 water quality volumes, that is 1.5" rainfall, the FDOT Drainage Manual, Table 5-5 will be used:

Grassed areas - C = 0.20 & impervious areas - C = 0.95

Basin Calculations:

Basin B-1:

Area = 83.3 ac. (inc. offsite from SR44)

26 lots X 4000 ft.² = 104,000 ft.² imp.

7650 ft. roadway X 22 ft. = 166,300 ft.²

Total imper. area = 6.25 ac.

CN = 39(77.1) + 95(6.25) = 43.2 w/ 1.93 ac. ret. area = 2.3% DCIA

Basin B-2:

Area = 73.7 ac.

32 lots X 4000 ft.² = 128,000 ft.² imp.

5070 ft. roadway X 22 ft. = 111,600 ft.²

stable & parking = 54,000 ft.²

Total imper. area = 6.74 ac

CN = 39(68.2) + 95(6.7) = 44.7 w/ 1.35 ac. ret. area = 1.8% DCIA

Basin B-0:

Area = 23.5 ac.

10 lots X 4000 ft.² = 40,000 ft.² imp.

Total imper. area = 0.92 ac.

CN = 39(22.6) + 95(.92) = 41.2 w/NO DCIA

Runoff Coef: 0.20(22.6) + 0.95(.92) = 0.23

Basin B-4:

Area = 9.1 ac.

1 lots X 4000 ft.² = 4,000 ft.² imp.

Total imper. area = 0.1 ac.

CN = 39(9.0) + 95(0.1) = 39.6 w/ NO DCIA

Runoff Coef: 0.20(9.0) + 0.95(.1) = 0.21

Basin B-5:

Area = 1.4 ac.

1 lots X 4000 ft.² = 4,000 ft.² imp.

250 ft. roadway X 22 ft. = 5,500 ft.²

Total imper. area = 0.22 ac.

CN = 39(1.2) + 95(0.2) = 47 w/ NO DCIA

Runoff Coef: 0.20(1.2) + 0.95(0.2) = 0.31

Basin B-6:

Area = 4.1 ac.

2 lots X 4000 ft.² = 8,000 ft.² imp.

Total imper. area = 0.18 ac.

CN = 39(3.9) + 95(0.18) = 41.4 w/NO DCIA

Runoff Coef: 0.20(3.9) + 0.95(0.18) = 0.23

STORM ROUTING

With the above parameters the 25-yr 24-hr. storm event of a total rainfall depth of 8.40" and a 100-yr. storm event of 10.50" (USWB Pub. TP-4) is distributed according to the following tables:

Retention Basins 24-hour, 25-year Storms:

Basin	Area	CN	DCIA (%)	S (in)	24-Hr.RO (a-f)	24-Hr.RO (ft. ³)	40C-42 Vol. (ft. ³)
1	83.3	43.2	2.3	13.15	13.56	590,616	78,620
2	73.7	44.7	1.8	12.37	12.72	553,874	108,930

Swale Management Areas:

24-hr Events-

40C42 Criteria-

Basin	Area	CN	DCIA (%)	S (in)	24-Hr RO (a-f)	Existing 24 hr. Case RO	Δ RO 24-hr	R.O. Coef.	40C-42 Vol.(af)
0	14.5	42.6	0	13.47	2.05	1.61	0.45	0.23	0.42
4	9.1	41.2	0	14.27	1.18	1.01	0.17	0.21	0.24
5	1.4	47	0	11.28	0.25	0.15	0.10	0.31	0.05
6	4.1	45.5	0	11.98	0.69	0.45	0.23	0.23	0.12

For the rear lot areas the net increase in runoff is so slight that the water quality volumes will in most cases be greater than the 25-yr. net difference in runoff. The above table evaluates both cases.

STORM ROUTING

With the above parameters the 25-yr 24-hr. storm event of a total rainfall depth of 8.40" and a 100-yr. storm event of 10.50" (USWB Pub. TP-4) is distributed according to the following tables:

Retention Basins 24-hour, 25-year Storms:

Basin	Area	CN	DCIA (%)	S (in)	24-Hr.RO (a-f)	24-Hr.RO (ft. ³)	40C-42 Vol. (ft. ³)
1	83.3	43.2	2.3	13.15	13.56	590,615	78,620
2	73.7	44.7	1.8	12.37	12.72	553,874	108,930

Swale Management Areas: 24-hr Events-

40C42 Criteria-

Basin	Area	CN	DCIA (%)	S (in)	24-Hr RO (a-f)	Existing 24 hr. Case RO	Δ RO 24-hr	R.O. Coef.	40C-42 Vol.(af)
0	14.5	42.6	0	13.47	2.05	1.61	0.45	0.23	0.42
4	9.1	41.2	0	14.27	1.18	1.01	0.17	0.21	0.24
5	1.4	47	0	11.28	0.25	0.15	0.10	0.31	0.05
6	4.1	45.5	0	11.98	0.69	0.45	0.23	0.23	0.12

For the rear lot areas the net increase in runoff is so slight that the water quality volumes will in most cases be greater than the 25-yr. net difference in runoff. The above table evaluates both cases.

Swale Volumes:

Basin	Length (ft)	Avg. Slope (%)	Reduction Factor	Vol. (ft.3)	Vol. (af)	Greatest Vol. from above(af)
0	3000	1.00	0.50	42,000	0.96	0.45
4	500	0.60	0.30	9,800	0.22	0.24
5	750	0	0	12,375	0.28	0.05
6	1200	1.00	0.50	16,800	0.39	0.23

The above swale volumes area based upon the geometry which yields a 28 ft.² cross section for Section A-A and 16.5 ft.² for the roadside swale. The area-length product is further reduced depending on the slope. The swale storage recovery from full 2-ft. depth is less than 3 hrs. at the conservative permeability rate of 20 ft. per day.

24-hour, 100-year Storms:

Basin	Area	CN	DCIA (%)	S (in)	24-Hr. RO (a-f)	Retention Stage (ft)
1	83.3	43.2	2.3	13.15	22.13	65.2
2	73.7	44.7	1.8	12.37	20.56	70.1

Retention Area Capacity R-1:

El.(ft)	Pond Area(ft ²)	Pond ΔVol.(ft ³)	Pond ΣVol.(ft. ³)	Pond ΣVol.(a-f)	Routing Results
58.00	105265	0		0	40C-42 Vol. @ ← el. 58.7 25-yr stage @ ← el. 62.9 100-yr stage @ ← el. 65.2
59.00	112104	108,685	108,685	2.495	
60.00	118940	115,522	224,207	5.147	
61.00	125780	122,360	346,567	7.956	
62.00	132620	129,200	475,767	10.922	
63.00	139460	136,040	611,807	14.045	
64.00	146298	142,879	754,686	17.325	
65.00	197850	172,074	926,760	21.276	
66.00	238560	218,205	1,144,965	26.285	
67.00	277360	257,960	1,402,925	32.207	

R-2:

El.(ft)	Pond Area(ft ²)	Pond ΔVol.(ft ³)	Pond ΣVol.(ft. ³)	Pond ΣVol.(a-f)	Routing Results
59.75	58933	0	0	0	40C-42 Vol. @ ← el. 61.7 25-yr stage. @ ← el. 66.9 100-yr stage. @ ↓ el.70.1
60.00	63405	15292	15292	0.351	
61.00	67540	65473	80765	1.854	
62.00	71672	69606	150371	3.452	
63.00	71672	71672	222043	5.097	
64.00	76107	73890	295932	6.794	
65.00	80541	78324	374256	8.592	
66.00	84976	82759	457015	10.492	
67.00	89410	87193	544208	12.493	
68.00	93846	91628	635836	14.597	
69.00	98280	96063	731899	16.802	
70.00	102715	100498	832396	19.109	

Retention Area Capacity R-1:

El.(ft)	Pond Area(ft ²)	Pond ΔVol.(ft ³)	Pond ΣVol.(ft. ³)	Pond ΣVol.(a-f)	Routing Results
58.00	105265	0		0	40C-42 Vol. @ = el. 58.7 25-yr stage @ = el. 62.9 100-yr stage @ = el. 65.2
59.00	112104	108,685	108,685	2.495	
60.00	118940	115,522	224,207	5.147	
61.00	125780	122,360	346,567	7.956	
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R-2:

El.(ft)	Pond Area(ft ²)	Pond ΔVol.(ft ³)	Pond ΣVol.(ft. ³)	Pond ΣVol.(a-f)	Routing Results
59.75	58933	0	0	0	40C-42 Vol. @ = el. 61.7 25-yr stage. @ = el. 66.9 100-yr stage. @ ↓ el.70.1
60.00	63405	15292	15292	0.351	
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63.00	71672	71672	222043	5.097	
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66.00	84976	82759	457015	10.492	
67.00	89410	87193	544208	12.493	
68.00	93846	91628	635836	14.597	
69.00	98280	96063	731899	16.802	
70.00	102715	100498	832396	19.109	

Additional criteria for Lake Co. requires the retention of 4.0" of runoff from all connected impervious areas. As there is really no such strictly defined area we will use the roadway pavement as follows:

Basin	Pavement Area(ac.)	4" Vol. (a-f)	Pond Area (ac)	4" Vol. Depth
1	6.25	2.08	2.42	0.86'
2	5.5	1.83	1.36	1.34'

Soils & Groundwater Modeling

Hand auger borings and percolation tests were conducted at three locations in the retention areas on the site. The percolation tests will be the basis for the permeability values and groundwater table estimates used in the modeling. Only in the lowest boring, B-1, was groundwater encountered. At a depth of 12 ft. from the surface level of el. 60.0 ft. the groundwater level would be at el. 48.0 ft. Allowing some undulation with the topography, and considering that the borings were taken at a seasonal high time, the groundwater level across the site could be considered as el. 50.0, two feet higher.

SCS generalized data for these Astatula sands give typical values as greater than 20"/hr. One half of this value (20 ft/day) will be used for a retention areas drawdown estimates even though the real field values are greater by orders of magnitude.

As a conservative design, total retention is staged without any losses from the swales or the retention areas is first provided. In the following groundwater analysis the recovery of the retention volumes is shown with a three-dimensional model.

A version of USGS's groundwater program, MODFLOW, will be used to demonstrate the retention area drawdown and recovery routing. The initial runoff will fill the unsaturated volume between the pond bottom and the groundwater table, el. 50.0 ft. The next stage is for the saturated flow in a horizontal sense through the sides to the surrounding groundwater table as a dynamic mounding.

The relatively small volumes for 40C-42 requirements are also routed through the ponds. It should be obvious that with the percolative capacity of the retention areas designed for much larger storms that recovery of these runoff amounts will be a matter of minutes. A typical swale unit is also modeled with 2 ft. of depth. The unsaturated flow condition fully recovers in 2.4 hrs.

The groundwater modeling results are included in the appendix.

Soils & Groundwater Modeling

Hand auger borings and percolation tests were conducted at three locations in the retention areas on the site. The percolation tests will be the basis for the permeability values and groundwater table estimates used in the modeling. Only in the lowest boring, B-1, was groundwater encountered. At a depth of 12 ft. from the surface level of el. 60.0 ft. the groundwater level would be at el. 48.0 ft. Allowing some undulation with the topography, and considering that the borings were taken at a seasonal high time, the groundwater level across the site could be considered as el. 50.0, two feet higher.

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The groundwater modeling results are included in the appendix.

APPENDIX

PONDS - Version 2.00
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Written By Devo Seereeram, Ph.D.
And Robert D. Casper

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Farner, Barley & Associates, Inc.

Retention Pond Recovery Analysis

I. Job Information

Job Name: **Cross-Tie R1 24-hr. storm**
Engineer: tjm
Date: 1/17/94

II. Input Data

Equivalent Pond Length, [L] (ft):	375.00
Equivalent Pond Width, [W] (ft):	375.00
Pond Bottom Elevation, [PB] (ft above datum):	58.00
Porosity Of Material Within Pond, [p] (%):	100.00
Base Of Aquifer Elevation, [B] (ft above datum):	40.00
Water Table Elevation, [WT] (ft above datum):	50.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day)	20.00
Fillable Porosity of Aquifer, [n] (%):	25.00
Vertical Unsaturated Infiltration, [lv] (ft/day):	20.00
Runoff Volume, [V] (cubic feet)	590616.00
Percent Recovery Of Runoff Volume, [PV] (%)	100.00

PONDS - Version 2.00
Copyright 1993

Written By Devo Seereeram, Ph.D.
And Robert D. Casper

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Retention Pond Recovery Analysis

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Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day)	20.00
Fillable Porosity of Aquifer, [n] (%):	25.00
Vertical Unsaturated Infiltration, [lv] (ft/day):	20.00
Runoff Volume, [V] (cubic feet)	590616.00
Percent Recovery Of Runoff Volume, [PV] (%)	100.00

III. Results

UNSATURATED FLOW

Recovery Time From Unsaturated Flow, [T1] (days): 0.1000
Recovered Volume From Unsaturated Flow, [V1] (ft³): 281250.00

SATURATED FLOW

Recovery Time From Saturated Flow, [T2] (days): 5.2116
Recovered Volume From Saturated Flow, [V2] (ft³): 309366.00
Maximum Radius Of Influence, [R] (ft): 167.21
Maximum Driving Head, [Hmax] (ft): 10.200
Minimum Driving Head, [Hmin] (ft): 8.000

TOTAL

Total Recovery Time, [T] (days): 5.3116
Total Recovered Volume, [V] (ft³): 590616.00

Retention Pond Recovery Analysis

I. Job Information

Job Name: **Cross-Tie R2 24-hr storm**
Engineer: **tjm**
Date: **1/17/94**

II. Input Data

Equivalent Pond Length, [L] (ft):	300.00
Equivalent Pond Width, [W] (ft):	300.00
Pond Bottom Elevation, [PB] (ft above datum):	60.00
Porosity Of Material Within Pond, [p] (%):	100.00
Base Of Aquifer Elevation, [B] (ft above datum):	40.00
Water Table Elevation, [WT] (ft above datum):	50.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day)	20.00
Fillable Porosity of Aquifer, [n] (%):	25.00
Vertical Unsaturated Infiltration, [Iv] (ft/day):	20.00
Runoff Volume, [V] (cubic feet)	511313.00
Percent Recovery Of Runoff Volume, [PV] (%)	100.00

III. Results

UNSATURATED FLOW

Recovery Time From Unsaturated Flow, [T1] (days):	0.1250
Recovered Volume From Unsaturated Flow, [V1] (ft ³):	225000.00

SATURATED FLOW

Retention Pond Recovery Analysis

I. Job Information

Job Name: Cross-Tie R2 24-hr storm
Engineer: tjm
Date: 1/17/94

II. Input Data

Equivalent Pond Length, [L] (ft):	300.00
Equivalent Pond Width, [W] (ft):	300.00
Pond Bottom Elevation, [PB] (ft above datum):	60.00
Porosity Of Material Within Pond, [p] (%):	100.00
Base Of Aquifer Elevation, [B] (ft above datum):	40.00
Water Table Elevation, [WT] (ft above datum):	50.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day)	20.00
Fillable Porosity of Aquifer, [n] (%):	25.00
Vertical Unsaturated Infiltration, [Iv] (ft/day):	20.00
Runoff Volume, [V] (cubic feet)	511313.00
Percent Recovery Of Runoff Volume, [PV] (%)	100.00

III. Results

UNSATURATED FLOW

Recovery Time From Unsaturated Flow, [T1] (days):	0.1250
Recovered Volume From Unsaturated Flow, [V1] (ft ³):	225000.00

SATURATED FLOW

Recovery Time From Saturated Flow, [T2] (days): 3.8180
Recovered Volume From Saturated Flow, [V2] (ft³): 286313.00
Maximum Radius Of Influence, [R] (ft): 151.05
Maximum Driving Head, [Hmax] (ft): 13.181
Minimum Driving Head, [Hmin] (ft): 10.000

TOTAL

Total Recovery Time, [T] (days): 3.9430
Total Recovered Volume, [V] (ft³): 511313.00

I. Job Information

Job Name: **XT2 Swales**
Engineer: tjm
Date: 1/18/94

II. Input Data

Equivalent Pond Length, [L] (ft):	100.00
Equivalent Pond Width, [W] (ft):	14.00
Pond Bottom Elevation, [PB] (ft above datum):	80.00
Porosity Of Material Within Pond, [p] (%):	100.00
Base Of Aquifer Elevation, [B] (ft above datum):	40.00
Water Table Elevation, [WT] (ft above datum):	50.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day)	20.00
Fillable Porosity of Aquifer, [n] (%):	25.00
Vertical Unsaturated Infiltration, [Iv] (ft/day):	20.00
Runoff Volume, [V] (cubic feet)	2800.00
Percent Recovery Of Runoff Volume, [PV] (%)	100.00

III. Results

UNSATURATED FLOW

Recovery Time From Unsaturated Flow, [T1] (days):	0.1000
Recovered Volume From Unsaturated Flow, [V1] (ft ³):	2800.00

SATURATED FLOW

Recovery Time From Saturated Flow, [T2] (days):	0.0000
Recovered Volume From Saturated Flow, [V2] (ft ³):	0.00
Maximum Radius Of Influence, [R] (ft):	0.00
Maximum Driving Head, [Hmax] (ft):	0.000
Minimum Driving Head, [Hmin] (ft):	0.000

I. Job Information

Job Name: XT2 Swales

Engineer: tjm

Date: 1/18/94

II. Input Data

Equivalent Pond Length, [L] (ft):	100.00
Equivalent Pond Width, [W] (ft):	14.00
Pond Bottom Elevation, [PB] (ft above datum):	80.00
Porosity Of Material Within Pond, [p] (%):	100.00
Base Of Aquifer Elevation, [B] (ft above datum):	40.00
Water Table Elevation, [WT] (ft above datum):	50.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day)	20.00
Fillable Porosity of Aquifer, [n] (%):	25.00
Vertical Unsaturated Infiltration, [Iv] (ft/day):	20.00
Runoff Volume, [V] (cubic feet)	2800.00
Percent Recovery Of Runoff Volume, [PV] (%)	100.00

III. Results

UNSATURATED FLOW

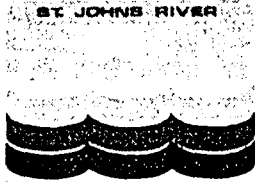
Recovery Time From Unsaturated Flow, [T1] (days):	0.1000
Recovered Volume From Unsaturated Flow, [V1] (ft^3):	2800.00

SATURATED FLOW

Recovery Time From Saturated Flow, [T2] (days):	0.0000
Recovered Volume From Saturated Flow, [V2] (ft^3):	0.00
Maximum Radius Of Influence, [R] (ft):	0.00
Maximum Driving Head, [Hmax] (ft):	0.000
Minimum Driving Head, [Hmin] (ft):	0.000

TOTAL

Total Recovery Time, [T] (days):	0.1000
Total Recovered Volume, [V] (ft ³):	2800.00



**WATER
MANAGEMENT
DISTRICT**

February 18, 1994

Certified Mail P 232 499 523

Mr. Thomas J. McCann, P.E.
Farner, Barley & Associates, Inc.
350 North Sinclair Avenue
Tavares FL 32778

Re: Cross-Tie Ranch Phase II; Application Number 4-069-0296A
(Please reference the above number on any submittal)

Dear Mr. McCann:

The St. Johns River Water Management District is in receipt of your Management and Storage of Surface Waters Individual Permit application. Upon preliminary review of the proposed project, the following technical information is required to sufficiently review the possible impacts the project may have on the surrounding area. This information is being requested pursuant to the authority vested in the St. Johns River Water Management District under subsection 373.413(2), Florida Statutes (F.S.), and sections 40C-4.101 and 40C-4.301, Florida Administrative Code (F.A.C.).

In order to expedite the review of your application, please use the application number referenced above on all correspondence, and submit three (3) copies of all requested information unless otherwise indicated by a specific information request.

1. It appears that the project is in the Wekiva River Protection Area. Please submit a completed and executed District Form No. 40C-41.063(4) entitled "Local Government Notification" for this project. [40C-41.063(4), F.A.C.]
2. It appears that the stage-storage relationship for Pond 2 indicated in the stormwater calculations received on January 24, 1994 is inconsistent with the permitted plans for Phase I. Please clarify this discrepancy. If the pond is proposed to be reconfigured and/or deepened in Phase II, please provide a proposed cross-section. [40C-4.301(1)(a) 6., 8., 9., 10., 12.; (2)(a) 1., 2., 3., 4.; F.A.C.]

Henry Dean, Executive Director

John R. Wehla, Assistant Executive Director

POST OFFICE BOX 1429 PALATKA, FLORIDA 32178-1429
TELEPHONE 904/329-4500 SUNCOM 904/860-4500

FAX (EXECUTIVE/LEGAL) 329-4125 (PERMITTING) 329-4315 (ADMINISTRATION/FINANCE) 329-4508

FIELD STATIONS

618 E. South Street
Orlando, Florida 32801
407/867-4300

7775 Baymeadows Way
Suite 102
Jacksonville, Florida 32256
904/730-6270

PERMITTING:
305 East Drive
Melbourne, Florida 32904
407/984-4940

OPERATIONS:
2133 N. Wickham Road
Melbourne, Florida 32935-8109
407/254-1762

Patricia T. Harden, CHAIR
SANFORD

Lenore N. McCullagh, VICE CHAIR
ORANGE PARK

Jesse J. Parrish, III, TREASURER
TITUSVILLE

William Segal, SECRETARY
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Reid Hughes
DAYTONA BEACH

Dan Roach
FERNANDINA BEACH

Denise M. Prescod
JACKSONVILLE

Joe E. Hill
LEESBURG

James H. Williams
OCALA

Mr. Thomas J. McCann, P.E.

February 18, 1994

Page 2

3. It appears that the proposed cul-de-sacs are located outside of the project boundaries. If work is proposed outside of the property owned or controlled by the applicant, please provide proper authorization. [40C-4.301(1)(a)8., F.A.C.]
4. The plans are not clear as to how treatment will be provided for the proposed cul-de-sacs and Basin 5 prior to discharge. Please clarify. Please be advised that the apparent ultimate receiving water body is an Outstanding Florida Water (OFW). Therefore, required treatment volumes should meet OFW criteria. [40C-4.301(1)(a)6., 9., 10.; (2)(a)4., 6., 7.; 40C-42.026, F.A.C.]
5. Please indicate the minimum finished floor elevations on the construction plans. [40C-4.301(1)(a)3; F.A.C., 9.1.3., A.H.]
6. Provide a detail of the proposed check dams. Include an indication of the vegetative cover proposed. [40C-4.301(1)(a)6., 9., 10.; (2)(a)4., 6., 7.; 40C-42, F.A.C.]

If the applicant desires to dispute the necessity for any information requested on an application form or in a letter requesting additional information, pursuant to section 40C-1.605(5), F.A.C., he or she may request an administrative hearing in accordance with section 120.57, F.S. Any petition for administrative hearing must comply with sections 40C-1.511 and 40C-1.521, F.A.C., must be filed within fourteen (14) days of receipt of the request for additional information, and must be filed with the District Clerk, in Palatka.

Please be advised, pursuant to subsection 40C-1.605(5), F.A.C., any application which has not been technically completed within sixty (60) days from the date of receipt of a request for additional information by the District, will be prepared for an Intent to Deny at the next timely Governing Board meeting. If you require more than the allotted sixty (60) days, please indicate this to the staff.

In addition, no construction (includes land clearing) shall begin on the proposed project until a permit is issued by the St. Johns River Water Management District. This is pursuant to subsection 40C-4.041(1), F.A.C., which states in relevant part, "unless expressly exempt by sections 373.406 and 403.813, F.S., or sections 40C-4.051 or 40C-44.051, F.A.C., a surface water management permit must be obtained from the District prior to the construction, alteration, operation, maintenance, removal or abandonment of any dam, impoundment, reservoir, appurtenant work or works...."

3. It appears that the proposed cul-de-sacs are located outside of the project boundaries. If work is proposed outside of the property owned or controlled by the applicant, please provide proper authorization. [40C-4.301(1)(a)8., F.A.C.]
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If the applicant desires to dispute the necessity for any information requested on an application form or in a letter requesting additional information, pursuant to section 40C-1.605(5), F.A.C., he or she may request an administrative hearing in accordance with section 120.57, F.S. Any petition for administrative hearing must comply with sections 40C-1.511 and 40C-1.521, F.A.C., must be filed within fourteen (14) days of receipt of the request for additional information, and must be filed with the District Clerk, in Palatka.

Please be advised, pursuant to subsection 40C-1.605(5), F.A.C., any application which has not been technically completed within sixty (60) days from the date of receipt of a request for additional information by the District, will be prepared for an Intent to Deny at the next timely Governing Board meeting. If you require more than the allotted sixty (60) days, please indicate this to the staff.

In addition, no construction (includes land clearing) shall begin on the proposed project until a permit is issued by the St. Johns River Water Management District. This is pursuant to subsection 40C-4.041(1), F.A.C., which states in relevant part, "unless expressly exempt by sections 373.406 and 403.813, F.S., or sections 40C-4.051 or 40C-44.051, F.A.C., a surface water management permit must be obtained from the District prior to the construction, alteration, operation, maintenance, removal or abandonment of any dam, impoundment, reservoir, appurtenant work or works...."

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SENDER: *Y-069-0296A*

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

M. Coak

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- 1. Addressee's Address
 - 2. Restricted Delivery
- Consult postmaster for fee.

3. Article Addressed to:

*Thomas McCann, P.E.
Farmer, Bailey & Assoc.
350 N. Sinclair Ave.
Tampa FL 32778*

4a. Article Number

P232 499 523

4b. Service Type

- Registered Insured
- Certified COD
- Express Mail Return Receipt for Merchandise

7. Date of Delivery

12/15/91

8. Addressee's Address (Only if requested and fee is paid)

*Farmer, Bailey & Assoc.
350 N. Sinclair Ave.
Tampa, FL 32778*

6. Signature (Agent)

Marlene Calvert

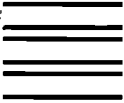
PS Form 3811, December 1991

4U.S. GPO: 1992-323-402

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St. Johns River Water Management District
618 E. South Street, Suite 200
Orlando, Florida 32801

Mr. Thomas J. McCann, P.E.
February 18, 1994
Page 3

If you have any questions, please do not hesitate to call me
at 407/897-4316.

Sincerely,



Marjorie Cook, P.E.
Department of Resource Management

MC:rc

cc: . PDS-RAIL
Pat Frost *WLD*
Joan B. Budzynski, P.E.

Estate of Herbert Mayer
Cross-Tie Ranch L.P.
518 Pleasant Street
Northampton MA 01060

