



Response to RAI

1726

RESOURCE MANAGEMENT ROUTING SHEET

Application Number: 40-069-0161A

Date : 10/10/94

Date Received: 10/ 7/94

Appl. Received: 8/22/94

Date Issued: / /

Related Permit:

Mail Type: RAI RESPONSE

F.O.R.: P

Project Name: NORTH RIDGE

 * Name Job Title Office *

MARGIE COOK ENGINEER ORL

DAVID EUNICE ENVIRONMENTAL SPECIALIST ORL

GENERAL COUNSEL:

Comments:

3 SETS REVISED PLANS (9 PGS), CALCS; 1 EA TO MARGIE C., DAVE E.

Copied and Routed By:
MAIL ROUTED FROM: ORL

 Sa on 10-10-94

PROCESSED BY: SA

McCoy & Associates
CONSULTING ENGINEERS and PLANNERS

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Clermont, Florida 34711

RECEIVED

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Marjorie D. Cook, Engineer
David Eunice, Environmental Specialist
St. Johns River Water Management District
Dept. of Resource Management
618 E. South St.
Orlando, FL 32801

OCT 07 1994

40-069-0161A
RECORDS
ORLANDO

October 3, 1994

PROJECT: NORTH RIDGE - 194 LOT SINGLE-FAMILY RESIDENTIAL SUBDIVISION
Sec. 20, Twp. 22S, Rng. 26E; City of Clermont, Lake County, Fl.
(Project No. 93-028)

RE: SJRWM Application No. 40-069-0161A
Response to the Request for Additional Information
Dated September 19, 1994

Dear Marjorie and David:

Please review the following responses in reply to your RAI referenced above:

Q1. Please be advised that in accordance with Florida State Statutes, all plans, specifications, and reports being filed for public records, shall be signed and sealed by an appropriate registrant holding a valid certificate of registration within the State of Florida. The revised calculations received by the District on August 30, 1994 were not signed and sealed. Please provide signed and sealed copies pursuant to chapter 471.025(1) Florida Statutes.

R1. *Please find signed and sealed copies of the revised calculations enclosed.*

Q2. Demonstrate that the storage capacity within the retention ponds will be restored within a maximum of 14 days following a storm event.
[40C-4.301(1)(a); (2)(a), F.A.C.; 12.9, A.H.]

R2. *Please refer to the signed and sealed calculations enclosed.*

Q3. It appears that the calculations for the required treatment volume are inconsistent with chapter 40C-42.026, F.A.C. Please review and revise these calculations, if necessary. Staff realizes, however, that the volume provided far exceeds the volume required.
[40C-4.301(1)(a)6.,9.,10.; (2)(a)4.,6.,7.; 40C-42.026, F.A.C.]

- R3. *Based upon our recent conversations, we understand that the presumed treatment volume calculation "inconsistency" is rooted in the use of the SCS methodology to determine potential runoff from the first inch of rainfall. Please be advised that we have researched TR-55, 40C-4.301, 40C-42.026, F.A.C., and even the MSSW Applicant's Handbook, and can find nothing demonstrating the use of the SCS method as inappropriate for computing the runoff from one inch of rainfall from Type "A" soils. Actually, Section 10.3.5, page 37 A.H., lists the SCS methodology as the first "Examples of accepted methodologies for computation of runoff...". Furthermore, in the U.S.D.A. Technical Release 55, (TR-55), June 1986 revision, Table 2-1 on page 2-3 summarizes the runoff from various rainfall amounts for various curve numbers. The table clearly indicates zero runoff from the first inch of rainfall for curve numbers less than 70 and zero runoff from the first 1.5" of rainfall for curve numbers less than 60.*

It should be noted that the basic concept of the SCS methodology is the consideration given to the hydrologic soil group, the cover type, the soil treatment, the hydrologic condition and the antecedent runoff condition to estimate the infiltration potential of the ground surface and determine the runoff Curve Number. By definition, the HSG "A" is limited to "soils (that) have low runoff potential and high infiltration rates even when thoroughly wetted". It is our experience that it is not unreasonable to expect zero runoff from a dense, well-maintained lawn on the deep, excessively drained sandy ridges characteristic of the Clermont area. However, if there is additional documentation available regarding the applicability of the SCS methodology of which we are not aware, we would be very interested in obtaining a reference to such documentation for further research.

At any rate, even if the rational method is used with a conservatively high coefficient of 0.20 to compute the runoff from 60% of the pervious basin area, the 1.25" of runoff from the remaining 40% of impervious area will always control the minimum treatment volume requirement. In fact, the impervious area would have to drop below 14% before the "lawn runoff" would control the treatment volume. If a coefficient of 0.15 was used to simulate the highly permeable HSG "A" pervious area, the impervious area would have to drop below 10% for the "lawn runoff" to control the treatment volume requirement. $\{[(1.25")X = (1-X)(0.2)] \Rightarrow X=13.8\%$

- Q4. In providing reasonable assurance that the proposed retention basins will recover within 72 hours, please provide the following information.
- a. Provide the supporting documentation used in estimating the seasonal high water table elevations within WRA's A-1 and C-2. It appears that the water table elevations used in the recovery calculations are inconsistent with the soils report.
 - b. It appears that the bottom elevations of WRA's A-1, B-1 and C-1 are within Stratum 2, according to the boring logs within the soils report. Please provide supporting documentation for the permeability used for these basins, since the permeability rates were only provided for Stratum 1.
[40C-4.301(1)(a)6.,9.,10.; (2)(a)4.,6.,7.; 40C-42.026, F.A.C.]

R4.a. *The seasonal high water table at this project site is controlled by the three receiving water bodies of the pre-development drainage basins -- Lake Charles, Lake Willow and Jack's Lake. The USGS Quadrangle map indicates the Lake Charles water level to be at elevation 81 and the Jack's Lake water level to be at elevation 83. The Lake Willow water level was not depicted, but can conservatively be taken as the average of the other two lake levels with a water level of 82. The Lake Willow water level was surveyed at elevation 79.20 in December 1993. Please note that the lowest seasonal high groundwater level used in the revised drawdown calculations was assumed to be at an elevation of 87 to account for any potential perching of the groundwater.*

Given the extremely rapid permeability rates of the Astatula soils and the fact that no groundwater tables were encountered in any of the ten foot deep borings, it is a very safe conclusion that the normal seasonal high groundwater level will occur substantially below the ten foot boring depths, as was estimated in the soils report. It is also worthy to note that the soil boring investigations were conducted in June during the rainy season. Based upon our experience in this area, we are confident that no water tables will be encountered by our proposed Water Retention Areas. However, we have revised our plans to direct the contractor to remove any clay stratums encountered during WRA excavation to a minimum depth of five feet below the design pond bottom elevation and replace the clay material with clean, permeable sand from the upper soil layer.

b. *Please review the revised drawdown calculations enclosed. As discussed in Part a. above and indicated on the revised plans, the contractor will be required to remove any clay stratums encountered during the excavation of the WRA to a minimum depth of five feet below the design pond bottom elevation and replace the clay material with clean, permeable sand from the upper soil layer. It should also be noted that these underlying soil stratums tend to follow the natural ground surface and usually disappear altogether around lakes and ponds. Borings AB-1 and AB-2 were both taken at high points adjacent to the final WRA locations and may not be totally representative of the actual soil profile closer to the lakes.*

Q5. Please provide a description of the type and density of the natural vegetative cover within the proposed buffers adjacent to Jacks Lake and Lake Willow [40C-4.301(1)(a)6.,9.,0.; (2)(a)4.,6.,7.; 40C-42.023, F.A.C.]

R5. *The vegetation adjacent to the lakes consist of dense stands of native grasses, weeds and trees. The Pre-Development Plan, Sheet 2 of 26, delineates the existing trees. The existing underbrush consists primarily of weeds and briars.*

Q6. According to the FEMA Flood Insurance Rate Map, it appears that Lake Willow is located within Flood Zone A, an area in which base flood elevations have not been determined. Provide the sources, with the dates, used to establish the 100-year flood elevation of Lake Willow. If the District or FEMA has not accepted a flood study of this system, a copy of a flood study used to determine the 100-year floodplain elevation must be submitted to the District for review. If no flood study has been done, the applicant must conduct one.
[40C-4.301(1)(a)12.,13.; (2)(a)1.,3.. F.A.C.]

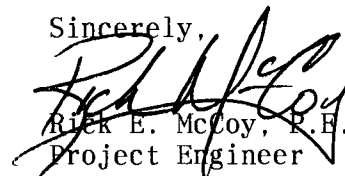
- R6. *Please refer to the City of Clermont FIRM Panel which provides a Base Flood Elevation of 90 for both Jack's Lake and Lake Charles. Based upon the highly permeable soils at this site, it can be reasonably concluded that the flood waters in Lake Willow will also stabilize at the 90 elevation. Further assurance can be provided by a quick analysis of the U.S.G.S. Quadrangle map from which a contributing drainage area of approximately 250 acres can be determined for Lake Willow basin. Based upon a SCS Curve Number estimate of 48 for the basin, a 100-year rainfall of 11.0 inches would yield 4" of runoff from the basin or about 80 ac-ft of runoff volume, (250 ac x 4"/12). Assuming an 82.0 base elevation for Lake Willow, (El. 79.2 by survey on 12-93), and an average 10 acre surface area for the lake yields a storage volume of 80 ac-ft at the 90.0 flood elevation. Therefore, the 90.0 elevation for the 100-year flood plain is safely conservative and a more detailed study is not warranted. As an added measure of safety, elevation 96.0 has been set as the minimum finished floor elevation for the residences around Lake Willow.*
- Q7. Provide reasonable assurance that the proposed project will not result in adverse impacts to the 100-year floodplain. It appears that it is the intent of the applicant to prohibit any fill being placed below the 100-year flood elevation. If this is the case, please clearly indicate as such on the construction plans and Deed Restrictions.
[40C-4.301(1)(a)12.,13.; (2)(a)1.,3., F.A.C.]
- R7. *Please refer to the revised construction plans which clearly delineate the 100-year flood plain to be outside of the construction limits. Clermont has written strict conservation restrictions for the 100-year floodplain into the city's Comprehensive Land Use Plan. The restrictions prevent the construction or placement of buildings, utilities, infrastructure or fill material of any manner within a designated floodplain. The Comp Plan rules are fervently enforced by the City. To further strengthen the city's control over these areas, the 100-year floodplains will also be encumbered with a conservation easement, in favor of the City of Clermont, by the Final Record Plat. For further verification and assurance, a copy of the Clermont Comprehensive Land Use Plan can be obtained from the Planning Department at City Hall or call the City Planner at 394-4083.*
- Q8. Please provide a berm stability analysis for proposed berms in excess of six feet in height. [40C-4.301(1)(a)3.,6.,12., F.A.C.]
- R8. *Please review the attached stability analysis for the berms in excess of six feet in height. Specifically, the analysis applies to WRA B-1, B-2, and C-1.*
- Q9. Provide sufficient grading to demonstrate that the runoff from all areas proposed for development will be treated prior to discharge. There is insufficient information on the construction plan to provide reasonable assurance that all areas, such as Lots 18-20 and the recreation area, will receive adequate treatment.
[40C-4.301(1)(a)6.,9.,10.; (2)(a)4.,6.,7.; 40C-42.023; 40C-42.026, F.A.C.]

- R9. *Please review the revised plans for additional drainage details. Note that an entrance wall is proposed for the western property line along Grand Highway. The wall and rear yard swale will prevent the discharge of runoff from lots 18-20. The recreation area is included in the WRA "C-1" drainage basin area. The intent is for all surface runoff from the recreation area to be directed to the WRA.*
- Q10. Erosion control measures must be utilized during development of the area contributing runoff to the Vegetative Natural Buffer, so as to prevent siltation of the buffer. Please delineate the minimum erosion and sediment control measures proposed upland of the Vegetative Natural Buffer. [40C-4.301(1)(a); (2)(a), F.A.C.; Section 21.2.3. Stormwater A.H.]
- R10. *Please review the revised plans. The silt barrier has been moved to the 100-year floodplain to protect the VNB adjacent to Lake Willow. The silt barrier around Jack's Lake is to be installed between the existing clay road and the lakefront vegetation. Please note that the existing clay roadway is to be reclaimed after the subdivision roadway is completed so that local traffic can be rerouted. The existing roadway will be seed and mulched or sodded after the existing clay base is removed.*
- Q11. Please address these minor concerns on the construction plans.
- a. Provide the berm width, L, on Sheet 9.
 - b. It appears that, elevation B on Sheet 9, the top of structure elevation, for WRA's B-3, C-1, C-2, and C-3 was inputted incorrectly. The top elevations indicated are 5-10 feet above the top of berm elevations. [40C-4.301(1)(a); (2)(a), F.A.C.]
- R11.a. *Please review the revised plans. All berms will have a minimum top width, "K", of ten feet. The berm width "L" represents the backside of the WRA. Due to the slopes at this site, not all WRA's will have a berm along the backside. WRA's "A-1" and "C-2" for instance will transition into the back of adjacent lots without a defined berm. The five foot (5') widths indicated in the revised Summary Table for width "L" would actually represent the sidewalks along WRA's "B-1", "B-2", "C-1" and "C-3".*
- b. *The elevations for the structure tops in question were incorrect. The elevations have been corrected in the revised Table on Sheet 9.*
- Q12. A legal reservation, in the form of an easement, deed restrictions, or other instrument must be provided establishing a right-of-way easement for maintenance of the stormwater management system. At a minimum, please delineate on the construction plans the proposed drainage easements, conservation easements, and tracts, including easements necessary for the maintenance of pipes, retention areas, rear yard swales, natural vegetative buffer, and retention pond access. Indicate easement widths. Minimum widths should be consistent with section 9.5 of the Stormwater Applicant's Handbook. [40C-4.301(1)(a)6.; (2)(a)4., F.A.C.; 9.5 Stormwater A.H.]

- R12. *The proposed drainage easements, tracts, conservation areas and right-of-ways have been noted on the revised Master Geometry Plan. These features will be incorporated into the Final Record Plat.*
- Q13. The permit application indicates that the applicant is the proposed operation and maintenance entity. Please be advised that the property owner or developer is normally not acceptable as a responsible entity when the property is intended to be subdivided. Please indicate an acceptable operation and maintenance entity which would comply with section 40C-42.027, F.A.C. Submit three copies of draft documents which establish the entity to be responsible for the operation and maintenance of the surface water management system pursuant to rule 40C-42.027, F.A.C. If a Homeowners' Association is proposed, enclosed is recommended language which should be incorporated into draft Articles of Incorporation and Declaration of Covenants and Restrictions.
[40C-4.301(1)(a)6.; (2)(a)4.;40C-42.027, F.A.C.]
- R13. *Please find a "Letter of Intent" enclosed indicating the City of Clermont's acceptance of the stormwater management system when constructed to their requirements. A Homeowner's Association is not proposed at this time.*
- Q14. Please demonstrate that the proposed project will not have any adverse secondary and cumulative impacts to wetlands, water quality, and upland habitat for aquatic and wetland dependent fish or wildlife listed as endangered, threatened, or of special concern. [40C-4.041(2), F.A.C.]
- R14. *There have been no endangered, threatened or species of special concern observed at this project site. However, every effort will be made during the construction operations to prevent disturbance of the lake areas and to preserve the natural habitat. We believe that the use of the VNB's to be the best treatment methodology to accomplish this objective.*

Should there be any questions or need for additional information concerning these responses, please contact us at your earliest convenience.

Sincerely,


Rick E. McCoy, P.E.
Project Engineer

enclosures

cc: Star Development, Inc.



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CITY OF CLERMONT

Office of the City Manager

October 4, 1994

Director of Permitting
St. Johns River Water Management District
618 East South Street, Suite 200
Orlando, FL 32801

RE: Northridge Subdivision

Sir:

This letter is to serve as formal notification the City of Clermont will maintain the drainage facilities in the above referenced project. The proposed Stormwater retention facilities shall be designed and sized for accommodation of rights-of-way waters for the project.

The developers of the project have indicated they will dedicate the stormwater drainage retention area facilities to the City upon completion. The City agrees to maintain such facilities upon engineer of record and City Engineer verification that all required construction meets specifications as delineated on the formally approved site plan for the project.

If you should have further questions concerning this project, please feel free to contact this office.

Sincerely,

Wayne Saunders
CITY MANAGER

WS:jo