

PERMIT CRITERIA MANUAL

CELEBRATION AND ENTERPRISE COMMUNITY
DEVELOPMENT DISTRICTS

June 1994
Revised February 1995

Prepared by:
District Engineer
Post, Buckley, Schuh & Jernigan, Inc.
1560 Orange Avenue, Suite 700
Winter Park, Florida 32789

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
	Table of Contents	1
1	Introduction	2
	Project Overview	3
	Manual Format	3
	Definitions	3-5
2	General Requirements and Design Process/Permit Submittal ...	
	Administrative	
	Permits	6
	Construction Plan Review	6-7
	Construction and System Acceptance	8
3	Utility Systems	
	Considerations and Criteria	
	Existing Utilities	9
	Support documentation	10
	Potable water	11
	Reuse Water	12
	Color Coding of Pipelines	13
	Notifications	14
	Easements	15
	Grease Removal	16
	Record Drawings	17
	Shop Drawings and Operations and	
	Maintenance Instructions	18
	Pump Stations	19
	Water for Construction	20
	Meters	
	Connections to Existing Systems	
	Temporary Connection to Water	
	And Wastewater System	
	Plans and Specifications	
	Calculations and Documentation	
4	Stormwater Management System	
	Considerations and Criteria	
	Plans and Specifications	
	Calculations and Documentation	

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
5	Roadways and Bridges	
	Considerations and Criteria	
	Plans and Specifications	
	Calculations and Documentation	
6	Landscape and Common Area	
	Considerations and Criteria	
	Plans and Specifications	
	Calculations and Documentation	
7	Standard Specifications	

SECTION 1

INTRODUCTION

The Permit Criteria Manual (PCM) as a manual for the permit criteria and technical specifications for potable water, wastewater, reuse water, stormwater management, roadway and bridges, landscape and common area projects within the Celebration and Enterprise Community Development Districts (District). All irrigation systems shall comply with the requirements of a reuse water project.

The Permit Criteria Manual applies to all public and private system connections and extensions to existing District systems.

All procedures, applicable charges and fees associated with the connection and service with as well as the extension of the District utility systems are described in the District Operating Policies and Procedures.

PROJECT OVERVIEW

The Enterprise and Celebration Community Development Districts, created under Chapter 190, Florida Statutes, was established on March 29, 1992. The District comprises approximately 9500 gross acres all within Osceola County, Florida.

The District's Board of Supervisors has special power relating to public improvement and community facilities authorized by the above legislation and more specifically identified and described in the Engineer's Report.

MANUAL FORMAT

This manual is divided into seven sections:

- Introduction
- General Requirements and Plan Submittal
- Utility Systems
- Stormwater Management System
- Roadways and Bridges
- Landscape and Common Area
- Standard Specifications

The requirements and specifications within the Permit Criteria Manual are dynamic in nature. Those requirements and specification addressed herein have been coordinated and cross-referenced with the respective portions of

the District Operating Policies and Procedures, Developer's Agreement, Drainage Interlocal Agreement and other related documents or agreements to determine the design guidelines required within the District. The Permit Criteria Manual user should, however, ensure that all design meets the applicable federal, state and local regulations and laws. The most stringent regulations, laws or policies will take precedence.

It is imperative that all Developers building within the District which will connect to, utilize, or extend any District system or facility be familiar with the referenced material listed in each section. The Developer is advised that the PCM as well as other District documents will be from time to time updated; and to that extent, it is the Developer's responsibility to ensure that the Developer has received all updates, amendments and subsequent rules and regulations to District Documents. This manual is not the one source of information necessary to meet all regulatory agency requirements, but is a guide for that purpose.

DEFINITIONS

Whenever the following terms are used in the "Permit Criteria Manual", the intent and meaning of such terms shall be interpreted as follows:

ANSI: American National Standards Institute, Inc.

AASHTO: American Association of State Highway and Transportation Officials

ASTM: American Society for Testing and Materials

AWWA: American Water Works Association

Developer: Any person, corporation, or other legally recognized entity who engages in the business of making improvements to or upon real property located within the district's service area as owner, tenant or legally constituted agent for the owner of such real property.

District: The Celebration and/or Enterprise Community Development District that certain local unit of special purpose government of the State of Florida, created pursuant to the provisions of Chapter 190 Florida Statutes.

District Engineer: A professional or engineering firm selected and retained from time to time by the District to perform engineering services on behalf of the District.

Drainage or Utility Easement: An area designated by plat and/or easement document for the purpose of surface water management or utility facilities.

Engineer: A Florida Registered Professional or his representative as employed by the Developer for the purpose of project design, inspection and testing.

FDEP: Florida Department of Environmental Protection

FDOT: Florida Department of Transportation

N.G.V.D.: National Geodetic Vertical Datum

Owner's Agent or Owner Representative: An authorized representative of the Owner or Developer assigned the responsibility of project construction management.

RCID: Reedy Creek Improvement District

SFWMD: South Florida Water Management District.

SECTION 2

GENERAL REQUIREMENTS AND DESIGN PROGRESS/PERMIT SUBMITTAL

ADMINISTRATIVE

Permits

The Developer shall obtain and pay for all permits, from all applicable local, state, and federal agencies that are required for the construction of the proposed improvements prior to beginning construction. Additionally, the Developer shall comply with any and all permits, approvals and agreements secured by the District and/or by other entities that affect or encumber the Developer's Project or limits of construction.

In no case will any connections to the District's systems be permitted until the Developer's Utility Service Request Application is accepted by the District and/or a Developer's Agreement between the Developer and the District is executed.

Construction Plan Review

During the design and permitting of the Developer's Project, the Developer shall provide and the District shall review the construction permit plans and technical specifications of the proposed roadway and bridges, grading, stormwater management, erosion control, utility systems, landscape and common area designs. All plans shall be prepared in accordance with the provisions of Chapter 471, Florida Statutes, governing the practice of professional engineers and landscape architects. All plans shall be prepared on drawings no larger than 22" x 34". The developer shall submit five sets of full size (22" x 34") and five sets of half size (11" x 17") construction plans, technical specifications, and supporting documents. Where applicable, all documents shall be signed and sealed by a professional engineer or landscape architect registered in the State of Florida.

All plan submittals shall include the necessary information to allow for the review of the proposed improvements at one time. Review of the submitted documents will not commence until all necessary information has been received by the District. Phased projects may submit plans for

relevant phases only, but the plans shall be of sufficient detail for the District to understand the design of the additional phases.

Construction plans shall include, as a minimum, the following:

- Project Name, Applicant's Name, Design Engineer, Design Landscape Architect, Date and Sheet Index.
- General location map.
- Scale, north arrow and legend stating the meaning of all symbols used on the plans.
- Legal limits and description of the Property.
- All horizontal control shall be shown on each construction plan and shall be based on the District coordinate grid system.
- Location of all existing roads, right-of-way, easements, topography (with a description of the benchmark), sidewalks, landscaping, stormwater management and utility systems, wetlands, wetland buffers, 100-year flood plain and any other existing element on the project boundary or within 100 feet outside the project boundary. All elevations shall be on National Geodetic Vertical Datum (NGVD).
- Limits of construction plan including identification of construction access and haul routes.
- Location of all proposed roads, buildings, paving, drainage and utility improvements, pipe sizes and materials, potable water and reuse water system connections, inlets, manholes, cleanouts, hydrants and valves. Provide proposed elevations on the appropriate items.
- Proposed site topography with 1 foot contours and spot elevations to indicate high points and low points. All elevations shall be on National Geodetic Vertical Datum (NGVD).

- Plan and profile sheets for all drainage, potable water, wastewater, force main, reuse water and wastewater gravity sewer lines.
- Rim and invert elevations for all drainage and wastewater gravity sewer lines and manholes.
- Location of all existing District utilities adjacent to proposed project, showing clearly the interface between existing and proposed conditions. This shall include but not be limited to special features to safeguard District utilities and water management from hazardous substances.
- Location and details of the proposed erosion and sedimentation control plan. Description of measures to be implemented during the construction period to limit adverse quantity and quality impacts off the site.
- Location, size and configuration of all utility and water management easements proposed for District facilities.
- Proposed landscape plan indicating the following:
 - a. location, space, size and species of all trees, shrubs, groundcover areas and muck areas.
 - b. quantity of plant material by type with scientific and common name.
 - c. identification of all special characteristics such as color, multi-trunk condition, branching pattern.
 - d. vegetation and trees to be removed/cleared and those to be preserved and protected with details on the method of protection.
- Proposed irrigation plan indicating the following:
 - a. location and size of main lines and distribution lines.
 - b. location, spacing and type of heads and valves.
 - c. type of system/controller.

- d. points of connection to the District's system.
- e. area of coverage.

All construction plans shall be prepared at a scale no greater than 1" = 40'. Profile sheets shall be prepared at a scale of 1" = 40' horizontal and 1" x 4' vertical. Special details and/or plans shall be prepared at a suitable scale to clearly identify the intent of the work.

FDEP Utility System Permitting

The Developer shall, before submission to the FDEP, submit five original copies of the FDEP Public Drinking Water and Domestic Wastewater permit application submittals to the District for its review and acceptance of the proposed utility system connections and/or extensions to the District's utility system: a copy of the District acceptance forms are included at the end of this section as Exhibits _____ and _____. All copies of the application shall be completely filled in, signed and dated by the permit applicant (Developer), the Engineer and the City of Kissimmee. Documentation on the project fire flow calculations shall also be submitted with the FDEP utility applications. Upon completion of District review, four original applications will be returned to the Developer or the Engineer for submittal to the FDEP.

Should any 'Requests For Additional Information' (RAI) or any other related correspondence associated with the Developer's FDEP permit applications be issued to the Developer or the applicant, the Developer shall ensure that copies of those documents, with attachments if applicable, and any responses made are forwarded to the District in a timely manner.

RCID/SFWMD Stormwater Management System Permitting

The Developer shall, before submission to the RCID, submit five original copies of the SFWMD Surface Water Management permit application submittal to the District for its review and acceptance of the proposed stormwater management system connections and/or modifications to the District's stormwater management system: a copy of the District acceptance form is included at the end of this section as Exhibit _____.

All copies of the application shall be completely filled in, signed and dated by the permit applicant (Developer) and Engineer. Upon completion of District review, four original applications will be returned to the Developer or the Engineer for submittal to the RCID.

Should any 'Requests For Additional Information' (RAI) or any other related correspondence associated with the Developer's SFWMD permit application be issued to the Developer or the applicant, the Developer shall ensure that copies of those documents, with attachments if applicable, and any responses made are forwarded to the District in a timely manner.

Pre-Construction Notification

All construction shall be completed in accordance with the construction plans and specifications approved by the applicable local, state and federal agencies.

1. The Developer or his Engineer shall conduct a pre-construction meeting with District representatives, Osceola County, Reedy Creek Improvement District, Engineer of Record, the Contractor, appropriate subcontractors and any other appropriate entity. The purpose of this meeting is to discuss any proposed changes to the approved designs, proposed construction schedule, District inspection and observation procedures, general coordination, notification procedures and any other requirements regarding the construction activities. The Developer shall submit to the District a copy of all construction permits to the pre-construction meeting.
2. The project may be inspected periodically by the District's inspector. Deficiencies will be noted by the inspector and the Developer and/or his Engineer will be notified. Major deficiencies shall be corrected prior to continuing construction work. All deficiencies noted during periodic inspections shall be corrected prior to final acceptance by the District.
3. The District shall be notified 48 hours prior to any testing or sampling so that a District representative may be present to witness such tests and sampling. Testing and sampling that would require notification would include but not be limited to compaction tests on backfill, pressure and leakage tests for pressure mains, main flushing, disinfection and bacteriological sampling for potable water, reuse water and wastewater force mains, and alignment, and infiltration/exfiltration tests for gravity sewer mains.

Completion of Construction

1. Prior to final acceptance of the Developer's connections to District systems and/or that portion of the Developer's system that will be turned over to the District, the District may complete a final

inspection of drainage, potable water, reuse water, irrigation and wastewater systems. A punch list will be prepared by the District's inspector calling out items that are not in conformance with Design Drawings and Specifications or with Standard District Details and Specifications. All deficiencies noted shall be repaired or replaced before final acceptance will be given by the District. The District may, at its discretion, waive the final inspection of the facilities.

In no case will any final connections to the District's systems be allowed until the system(s) are approved and accepted by the District. Although the District may accept portions of the system for phased projects, it is not obliged to do so.

2. The Developer shall submit one complete set of reproducible mylar record drawings certified by the Engineer of Record in accordance with the District Utility Operating Policies and Procedures. Record drawings shall clearly indicate the final as-constructed location of mains, fittings, valves, hydrants, air release valves, blowoffs, meter boxes, services, manholes, sewer laterals, cleanouts and other appurtenances. The location of items listed above shall be dimensioned and referenced to permanent points of reference. Record drawings shall also indicate lot sizes, rights-of-way lines, easement lines and pavement locations. Should the Record Drawings be deemed inaccurate or incomplete by the District, the District shall return those documents to the Developer for review and resubmission.
3. The Developer shall submit Grants of Easement and/or Easement Modification Agreements including legal descriptions and sketch maps prepared by a surveyor registered in the State of Florida, for review and acceptance by the District.
4. The Developer shall provide Engineer's certification to the District that all facilities were installed in accordance with approved plans, specifications and/or record drawings and that all testing and sampling requirements were met.
5. The Developer shall, before submission to the FDEP, submit two original copies of the FDEP potable water and wastewater Request for Clearance submittals to the District for its review and acceptance of the proposed utility system connections and/or extensions to the District's utility system: a copy of the District's acceptance forms are included at the end of this section as Exhibits _____ and _____. Upon completion of District review, one original application will be returned to the Developer or the

Engineer for submittal to the FDEP.

6. The Developer shall, before submission to the RCID and SFWMD, submit two original copies of the SFWMD Construction Completion submittal to the District for its review and acceptance of the proposed stormwater management system connections and/or modifications to the District's stormwater management system: a copy of the District acceptance form is included at the end of this section as Exhibit _____. Upon completion of District review, one original application will be returned to the Developer or the Engineer for submittal to the RCID.

7. Prior to the activation of the Developers Utility System that is connected to the District's system, the Developer shall furnish, complete and/or comply with the items identified on the Customer Service Application.

Letter of Acceptance

Upon receipt of System Clearance documentation from FDEP for the proposed potable water and wastewater systems, the District shall notify Osceola County, in writing, that construction has been completed and the District accepts the connections to the existing District utility systems and/or that portion of the Developers system given to the District.

Upon receipt of notification from RCID and SFWMD that construction of the proposed stormwater management system has been accepted, the District shall notify Osceola County, in writing, that construction has been completed and the District accepts the proposed stormwater management system and/or the connections to the existing District Stormwater Management System.

Engineer for submittal to the FDEP.

6. The Developer shall, before submission to the RCID and SFWMD, submit two original copies of the SFWMD Construction Completion submittal to the District for its review and acceptance of the proposed stormwater management system connections and/or modifications to the District's stormwater management system: a copy of the District acceptance form is included at the end of this section as Exhibit _____. Upon completion of District review, one original application will be returned to the Developer or the Engineer for submittal to the RCID.
7. Prior to the activation of the Developers Utility System that is connected to the District's system, the Developer shall furnish, complete and/or comply with the items identified on the Customer Service Application.

Letter of Acceptance

Upon receipt of System Clearance documentation from FDEP for the proposed potable water and wastewater systems, the District shall notify Osceola County, in writing, that construction has been completed and the District accepts the connections to the existing District utility systems and/or that portion of the Developers system given to the District.

Upon receipt of notification from RCID and SFWMD that construction of the proposed stormwater management system has been accepted, the District shall notify Osceola County, in writing, that construction has been completed and the District accepts the proposed stormwater management system and/or the connections to the existing District Stormwater Management System.

SECTION 3

UTILITY SYSTEMS

CONSIDERATIONS AND CRITERIA

Existing Utilities

The water system for the District is a dual supply system. Potable water mains have been installed to provide for domestic water use and fire protection. Reuse (non-potable) water mains have been installed to provide for irrigation and other non-potable uses. In accordance with the District Operating Policies and Procedures, all points of connection to the potable water system shall be metered and shall include a backflow prevention device. Where applicable, points of connection to the reuse water system shall be metered.

Support documentation

The design of utilities throughout Celebration are guided by all applicable local, state and federal plans, guidelines, and regulations and more specifically by the following Celebration documents:

Document	Source/Author	Publication Date
Large User Agreement (LUA)	City of Kissimmee and the District	January 1993 with Amendments
Master Utilities Plan (MUP)	Post, Buckley, Schuh & Jernigan, Inc.	February 1993 with Amendments
Engineering Design Guidelines (EDG)	Post, Buckley, Schuh & Jernigan, Inc.	June 1994 Revised February 1995

Potable Water

The potable water supplied by the District is purchased from the City of Kissimmee and meets all local, state and federal drinking water standards.

Reuse Water

The reuse water supplied by the District is purchased from the City of Kissimmee and meets all state and federal reuse water standards for limited public access areas.

Color Coding of Pipelines

The Developer shall provide and install color-coded identification tape as specified in the Standard Specifications for potable water lines (blue), reuse water lines (purple) and wastewater force mains (green).

Notifications

In accordance with the District Operating Policies and Procedures, the District shall be notified 48 hours in advance prior to any flushing, pressure testing, bacteriological sampling or TV and infiltration/exfiltration testing so the District's representative can witness the operations.

Easements

For pipelines and pump stations not within publicly dedicated rights-of-way and to be owned and operated by the District, the Developer shall grant to the District utility easements centered over top of pipe for pipelines and an easement for submersible pump stations, as may be necessary for the installation, operation and maintenance. However, the District will consider easements of alternate sizes where appropriate and where repair and maintenance by the District can be accomplished.

Grease Removal

The grease removal shall be in compliance with all local, state and federal regulations and the Engineering Design Guidelines.

Record Drawings

Record drawings shall clearly indicate the final as-constructed location of drainage facilities, utility mains, fittings, valves, hydrants, air release valves, blowoffs, meter boxes, services, manholes, sewer laterals, cleanouts and other appurtenances. The location of items listed above shall be dimensioned and referenced to permanent points of reference. Record drawings shall also indicate lot sizes, rights-of-way lines, easement lines and pavement locations.

Shop Drawings and Operations and Maintenance Instructions

For systems being transferred to the District for ownership and operation, the Developer shall submit shop drawings of all pumps, piping, valves and other materials installed, along with the manufacturer's operation and maintenance instructions. Two sets of each shall be submitted. The Developer shall transfer all warranties to the District.

Pump Stations

Pump stations shall be of the submersible type as specified in the District Standard Specifications unless otherwise approved by the District. The Developer shall provide a water service to the pump station with a hose bibb and vacuum breaker at the station. The minimum wet well diameter shall be six feet. The pumps, motors, control panel, frame and cover and guide rails shall be supplied by the pump supplier to insure unit responsibility. The pumping station shall include an auto nailer system to notify both the pump station operator and the District of power loss high or low discharge pressures and high or low level alarms in the wet well. Provisions for future odor control equipment shall be incorporated into each lift station design.

Water for Construction

Contractor is to notify the District forty eight (48) hours prior to required date for temporary construction water. The Developer will supply and install meter and a backflow preventer in accordance with District standards. Contractor/customer shall provide protection for assembly from damage. Contractor/customer is to notify the District forty eight (48) hours prior to time desired to remove temporary water service so that the District may do so. The District will charge for all construction water used. If construction is a sub-division or new utility extension, Contractor is responsible for obtaining and installing the backflow preventer for flushing lines.

Meters

All meters for potable and reuse water service will be furnished, installed and paid for by the Developer. The meters shall be of the type specified and accepted by the District. It is the Developer's responsibility to stake in the field the desired location of the meter assembly. All potable services shall include an approved backflow preventer. All taps, connections and backflow preventers will be furnished, installed and paid for by the Developer. Reuse lines shall not have spigots unless they are below ground in a vault and locked, including private residences.

Connections to Existing System

No connections to the existing water, wastewater, or reuse water systems are permitted until the Engineer of Record has certified to the District that the system is built in accordance with the approved plans, that all testing is complete and within the allowable limits for leakage and infiltration and

provide copies of the FDEP clearance letters. The District must be notified forty eight (48) hours in advance of connecting to the existing system so that a representative of the District can observe the connection.

Temporary Connection to Water and Wastewater System

The District may permit temporary connection for sales trailers and other non-permanent uses. In addition, a connection fee, a meter fee and deposit will be paid in accordance with the District Operating Policies and Procedures Rate Schedule.

The District reserves the right to temporarily disconnect the service at any time to perform maintenance to its lines or to construct new lines. The District will give, to the extent possible, reasonable notice to the Contractor/Developer/User prior to any disconnection.

PLANS AND SPECIFICATIONS

All utility system construction plans shall be reviewed by the District. Construction plan documents shall comply with all applicable local, state and federal requirements as well as all District requirements and standards.

All utility system technical specifications shall comply, at a minimum, with the District standard technical specifications. If District Specifications are used, the Developer shall ensure those specifications are edited for the specific project.

CALCULATIONS AND DOCUMENTATION

All utility system calculations shall be completed in accordance with all local, state and federal regulations, applicable regulatory permitting requirements, the Master Utilities Plan and the Large User Agreement.

Flow factors to determine potable water and wastewater demands shall be consistent with those identified in the District Operating Policies and Procedures Rate Schedule.

For the potable water system including fire protection, the following standards shall serve as uniform requirements within the District.

1. The maximum daily flow to average daily flow ratio shall be 2.0.
2. The peak hour to average daily flow ratio shall be 4.0.

3. Fire flow for non-residential buildings and multi-family residential units shall be determined in accordance with Insurance Services Offices (ISO) Standards. The maximum fire flow demand shall be 2000 gallons per minute for a maximum duration of four hours.
4. Fire flow for single family residential units shall be 750 gallons per minute for a maximum duration of two hours.

For the wastewater system, the following standards shall serve as uniform requirements within the District.

1. Applicable sections of Division 4 of the Code of the City of Kissimmee shall serve as the basic standard for wastewater treatment service. These sections are: 29-130.3(b), 29-131, 29-132, 29-133, 29-134 (except subsection c), 29-136, 29-137, 29-138, 29-139, 29-140 and 29-140.1.
2. The transmission system associated with the delivery of wastewater to the point of connection to the City of Kissimmee system consists of three components: lift stations (District and Private), gravity mains and transmission force mains.
3. Each lift station (District and Private) shall be designed to operate in concert with the entire District wastewater collection and transmission system.
4. Any maintenance or repairs to District or private lift stations requiring the replacement of a pump, valve or any other appurtenance/equipment shall not change the hydraulics of the District's wastewater transmission system.
5. Transmission mains shall convey wastewater in such a way as to not exceed a velocity of 5.0 feet per second.

SECTION 4

STORMWATER MANAGEMENT SYSTEM

CONSIDERATIONS AND CRITERIA

1. Stormwater management lakes and ponds are within the jurisdiction of the South Florida Water Management District (SFWMD) and the Reedy Creek Improvement District (RCID). The quality of stormwater discharged from these lakes and ponds is also under the jurisdiction of RCID Pollution Control Board. The latest update of the Celebration Stormwater Master Plan (SMP) will serve as a guideline for design of stormwater management systems for Celebration. The original SMP, dated July 26, 1993, and all subsequent updates were prepared in conformance with SFWMD Conceptual Permit No. 48-00714-S issued on September 10, 1992 for Walt Disney World's Master Development Plan.

Per RCID Pollution Control Board objectives, stormwater quality will be designed to meet SFWMD and RCID pollution abatement/water quality volume requirements or the background water quality in the receiving waters, (Reedy Creek and/or Bonnet Creek), whichever is more stringent. SFWMD and RCID criteria (i.e., Class III standards) requires each lake or pond in the SMP to provide wet detention stormwater treatment volume as the greater of:

- One (1) each of runoff over the contributing drainage areas, or
- 2.5 inches over impervious areas (less lake areas).

Background concentrations of pollutants normally associated with surface waters to be met (e.g., ortho-phosphate, nitrite, zinc, copper and lead) are as measured within Reedy Creek and/or Bonnet Creek, the receiving waters of the Celebration Project.

2. No attenuation of stormwater discharge is required if each lake or drainage basin within the Celebration development discharges at rates no greater than those shown in Section 6 of the SMP for the 10 year/72 hour storm. If discharges exceed those shown in the SMP, attenuation will be provided to reduce the discharge rate to that specified in the SMP or an acceptable analysis will be performed to

show that higher discharge rates have no impact on stages in receiving waters.

3. Projects with encroachments into the 100 year floodplain are required to provide one-to-one compensating storage using SFWMD methodology as described in Section 7 of the SMP. The 100 year floodplain elevations to be used in the calculation of encroachments are those from 'Reedy Creek Improvement District Master Drainage Study Annual Update, February 1992, Table 13 - Water Surface Data' and listed in Table 5-4 of the SMP under the column heading 'UNET'. Site storage may be utilized as consistent with the type of development.
4. To assure compatibility/compliance with the SMP, standard methodologies are recommended for analysis and final design of stormwater management facilities and include, but are not limited to, the following:
 - a. The Santa Barbara Urban Hydrograph (SBUH) method for determination of runoff hydrographs.
 - b. Composite Soil Conservation Service (SCS) Curve Numbers (CN) computed for each basin using a CN of 74 for pervious areas (including wetlands) and a CN of 98 for impervious areas (including lakes).
 - c. Time of concentration (T_c) by the methods presented in either SCS TR-55 'Urban Hydrology for Small Watersheds' or the Florida DOT Drainage Manual. Minimum T_c should be 15 minutes.
 - d. The design storm to be used to comply with the discharge rate limitation described in the SMP is the 10 year/72 hour storm with a rainfall amount of 10.19 inches, using the SFWMD 72 hour rainfall distribution.
 - e. The 50 year/72 hour storm shall be modeled in addition to the 10 year/72 hour storm to ensure structure capacity to pass the storm without exceeding the top of bank. Rainfall amount is 12.91 inches, using the SFWMD 72 hour rainfall distribution.
 - f. The 100 year/72 hour storm is to be modeled to ensure habitable finished floors are set one foot above this elevation. Rainfall amount is 14.27 inches, using the SFWMD 72 hour

rainfall distribution.

- g. Minimum top of berm elevation for lakes and ponds shall be set at two (2) feet above the 10 year/72 hour design high water elevation or at the 100 year/72 hour design high water elevation, whichever is lower. Figure W-3 provides a typical lake section.
 - h. In compliance with Condition of Approval #23 of the Celebration Development Order, any shoreline banks created along on-site stormwater wet detention lakes greater than five acres in area shall include littoral zones constructed on slopes no steeper than a 4:1 horizontal to vertical ratio and shall be planted in, or allowed to be colonized by, native emergent and submergent vegetation, excluding cattails. The Developer through Project buildout (and after project build out the Districts), shall ensure, by supplemental replanting if necessary, that at least 80 percent cover by native aquatic vegetation is established within the littoral zone (to include at minimum the area between ordinary high water and ordinary low water) for the duration of the Project. Consistent with all lakes and ponds shall include a minimum 15 foot wide maintenance berm around the lake or pond with slopes no steeper than 8:1. The maintenance term shall be dedicated as an easement.
 - i. Control elevations (i.e., normal water elevations) for lakes and ponds shall be set at or above the treatment pool elevations listed for each pond in the tables providing village by village model results in Section 6 of the SMP. Control elevations proposed to be lower than those contained in the SMP will require the approval of RCID and SFWMD.
5. Pumping into or out of lakes, ponds, or other stormwater management facilities is prohibited except by special authorization from the District.
6. Non-stormwater discharges such as sediments, turbidity, debris, or toxic, hazardous or otherwise noxious materials into lakes, ponds or other District or RCID stormwater management facilities during or after construction is prohibited. Design Engineer shall show that overland flow will not erode lake slopes. Particular attention shall be given to those areas that flow directly to the lake from a distance greater than thirty (30) feet.

7. All internal site drainage systems shall be designed with sufficient capacity for the peak runoff resulting from a 10-year storm of critical duration. The 3-year storm may be used for areas that are not through vehicular traffic routes (i.e., parks, parking lots, etc.). The peak rate of runoff may be estimated by the use of the Rational Method ($Q = CIA$). Other methods may be used as approved by District Engineer.

The rainfall intensity for design storms shall be derived from the intensity-duration curve for Zone 7, published in the Florida DOT Drainage Manual. The critical duration of a design storm is defined to be equal to the time of concentration of the basin or sub-basin, except that use of a duration less than 10 minutes is not required.

Recommended runoff coefficients are as follows:

Description of Surface	C
Undisturbed pine-palmetto	0.15
Well-drained lawn	0.3
Turf-filled pavers	0.6
Solid pavers, on sand base	0.8
Impervious pavement or rooftop	0.95

Time of concentration shall be determined as described above.

8. Minimum road and building elevations shall be designed in accordance with the applicable SFWMD permit conditions, Osceola County regulations and if necessary FEMA requirements. The pond stages reported in the village by village model results tables in Section 6 of the SMP provide guidelines for establishing these elevations but must be verified in final design of each site's stormwater management system.

Drainage plans will ensure that surface water from a 10 year/72 hour event will have a route to the designated stormwater management lake system. This is to prevent water from being locally trapped in areas and potentially affecting building floor slabs.

9. Drainage pipes for internal site drainage shall be designed in accordance with the applicable Osceola County regulations.

The minimum size pipe shall be 15-inch diameter or equivalent for any pipe receiving stormwater runoff. This minimum size does not apply to roof drains. All CDD maintained culverts are to be reinforced concrete.

10. All roads are planned with open and closed drainage. Plans with open drainage systems (e.g., swales or canals) must be approved by CDD.
11. Proposed development shall not exceed the percent imperviousness for the pertinent drainage basin(s) listed in the village by village hydrologic parameters tables listed in Section 6 of the SMP. If the percent imperviousness is exceeded, an analysis of the increased runoff on receiving waters will be made at the sole expense of the Developer and approved by the District Engineer.
12. In basins containing an existing District stormwater management lake, runoff may be discharged directly to the District lake from parcels with less impervious coverage than approved in that basins SFWMD permit. Runoff in excess of the permitted amount shall be detained on the parcel. All commercial and industrial parcels containing development which entails handling or transfer of hazardous substances will be required to meet the pre-treatment requirements of SFWMD or other requirements stipulated by RCID or other regulatory agencies prior to these areas' discharge to the master stormwater management system.
13. Lake outflow structures are to function solely through gravity flow and are to have fixed overflow elevations.
14. Connection of pipeworks, drainage works, swales, that cross into, enter District facilities is prohibited except as specifically authorized by the District.
15. Developments containing or adjacent to a protected isolated wetland shall ensure that the hydroperiod of the wetland is not adversely affected. Where the drainage area and runoff to an isolated wetland is modified due to proposed grading and/or a stormwater management lake with a control elevation lower than the seasonal high water elevation of the wetland is proposed, rehydration of the wetland shall be provided through one or more of the methods described in the SMP.
16. Sumps for lake outfalls may be required if the discharge is conveyed

in a pipe system. Spreader swales are required for all lake outfalls to conservation areas, whether via a pipe system or a broad-crested weir structure.

17. All inflow points to a lake or pond that discharges to a conservation area shall include two (2) additional in-line manhole structures for possible future connection to a water quality treatment system.
18. The superstructure (i.e., low chord) for a new bridge over water shall have a minimum vertical clearance of: six (6) feet over the mean annual flood or control water elevation or two (2) feet over the 50-year 72-hour design high water elevation, whichever is greater, and a minimum horizontal clearance of 25 ft. measured normal to the centerline of the canal.

PLANS AND SPECIFICATIONS

The construction drawings shall be prepared in accordance with requirements in the Stormwater Master Plan, District Standard Specifications, Engineering Design Guidelines, applicable Osceola County regulations and the RCID/SFWMD requirements for permit applications. The Construction plans shall include temporary and permanent erosion and sedimentation control plans.

CALCULATIONS AND DOCUMENTATION

1. Complete calculations for runoff estimates, pipe sizing, hydraulic grade line elevations, retention volume, reservoir routing, floodplain encroachment and compensation, wetland rehydration, or other pertinent calculations shall be submitted with plans.
2. Any off-site drainage areas draining onto or through the project site shall be identified and accounted for. Any off-site proposed storm drainage system shall be shown in its entirety and accompanied by full data and calculations. Any off-site existing system requiring backwater calculations shall likewise be fully shown and documented.
3. Printouts from computer programs for drainage calculations shall include or be accompanied by full input data and design assumptions including default values.

The following programs are approved for use: U.S. Army Corps of Engineers Hydrologic Engineering Center - HEC-1 and HEC-2; Soil Conservation Service TR-20; Environmental Protection Agency -

SWMM; South Florida Water Management District - R.C.4 or M.B.P.; Streamline Technologies, Inc. - Advanced Interconnected Channel & Pond Routing (adICPR); Hydraulic Systems Software - Basin Runoff Networking (BRN). Other programs may be used, subject to CDD approval, if accompanied by full documentation and if certified by a registered professional engineer. Once approved, this need not be resubmitted for subsequent projects.

4. Estimates of the impervious area of future pavement or buildings or areas to be developed by others, such as single family lots, may be used for design purposes but must be consistent with the percent imperviousness values provided in the village by village hydrologic parameters tables in Section 6 of the SMP. The value of such estimates must be stipulated and included in that project's SFWMD permit. The actual impervious area to be developed will be limited to the stipulated value unless it can subsequently be shown that the designed site drainage system is adequately sized for the runoff from increased impervious area and that there are no adverse impacts to the master stormwater management system's peak stages and/or discharges due to the increased impervious area. Developments with larger impervious coverage amounts than those shown in Section 6 of the SMP shall provide additional detention. Calculations to show the relationship of the proposed system with the existing system shall also be provided.

5. As part of the drainage calculations submittal, five copies of the South Florida Water Management District permit application shall be submitted to the District. The drainage calculations shall specifically include the following:
 - A statement from the design engineer certifying that the design is consistent with the Celebration Stormwater Master Plan.

 - Acreages and percentages of per land use:
 - a. impervious surfaces
 - b. roof areas
 - c. pervious areas
 - d. lakes, canals, and retention areas
 - e. wetland areas
 - f. total project area

SECTION 6

LANDSCAPE AND COMMON AREA

CONSIDERATIONS AND CRITERIA

Not used

PLANS AND SPECIFICATIONS

Prior to construction, all landscape, irrigation and common area construction plans shall be reviewed and accepted by the District. Construction plan documents shall comply with all applicable local, state and federal requirements and those specific requirements described in Section 2.

All landscape, irrigation and common area technical specifications shall comply, at a minimum, with the District Standard Technical Specifications included in Section 7. If District Specifications are used, the specifications shall be edited for the specific project.

CALCULATIONS AND DOCUMENTATION

Not used.

SECTION 7

STANDARD SPECIFICATIONS

This section provides standard specifications for storm drainage, potable water, wastewater and reuse water systems and landscape, irrigation systems and common area improvements. The section are numbered using CSI format and include:

- Section 02145 Special Provisions for Construction Activities in canals
- Section 02225 Excavation and Backfill for Utilities
- Section 02226 Excavation and Backfill for Structures
- Section 02270 Erosion and Sedimentation Control
- Section 02345 Site Concrete Work
- Section 02400 Culverts and Storm Sewers
- Section 02440 Underdrains
- Section 02450 Rip-Rap
- Section 02451 Erosion Control Mattress
- Section 02660 Water Distribution System
- Section 02601 Drainage Structures
- Section 02663 Reuse Water Distribution System
- Section 02721 Oil Skimmers
- Section 02730 Sanitary Sewerage Collection System
- Section 02732 Sanitary Sewerage Force Main
- Section 02750 Submersible Sewage Pumping Station

Technical specifications for roadways and bridges shall comply with the applicable sections of current Osceola County and Florida Department of Transportation (FDOT) standard construction specifications.